

Data Validation Package

March 2011
Water Sampling at the
Shiprock, New Mexico, Disposal Site

July 2011



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Sampling Event Summary

Site: Shiprock, New Mexico, Disposal Site

Sampling Period: March 21–25, 2011

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

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

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

Table 1. Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
Nitrate + Nitrite as Nitrogen	10	SHP01	0608	35.7
			0610	270
			0611	17.4
			0614	353
			0615	22.9
			0618	75.4
			0630	12.4
			0735	645
			0773	27.1
			0854	40.6
			0857	33.6
			1008	18.4
			1104	16.3
			1105	60
			1111	38.8
			1112	452
			1113	391
			1114	131
1115	378			
1128	535			
1139	29.9			
1140	131			
1141	58.5			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
Selenium	0.01	SHP01	0610	0.239
			0614	0.99
			0615	0.277
			0618	0.476
			0622	0.207
			0630	0.105
			0734	0.0162
			0735	0.0712
			0773	0.0589
			0793	0.246
			0798	0.0362
			0854	0.0157
			0855	0.0188
			1008	0.0231
			1009	0.049
			1089	0.046
			1104	0.0311
			1105	0.31
			1111	0.571
			1112	3.07
			1113	0.111
			1114	0.0149
			1115	0.0679
1128	0.0223			
1139	0.0252			
1140	1.22			
1141	0.706			
Uranium	0.044	SHP01	0608	0.756
			0610	1.19
			0611	0.0602
			0612	0.284
			0614	1.99
			0615	1.79
			0618	2.22
			0619	0.152
			0622	0.223
			0623	0.0666
			0625	0.0479
			0626	0.0533
			0630	0.137
			0734	0.095
			0735	0.393
			0736	0.0479
			0766	0.277
			0768	0.757
			0773	0.389
			0775	0.205
			0779	1
			0792	0.239
			0793	0.648
0798	0.315			
0853	0.108			
0854	1.38			
0855	0.085			
0856	0.0665			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
			0857	0.769
			1008	1.28
			1009	0.246
			1089	0.232
			1104	0.595
			1105	1.57
			1111	1.23
			1112	1.87
			1113	0.762
			1114	0.73
			1115	1.1
			1128	1.49
			1135	0.141
			1137	0.172
			1138	0.237
			1139	0.845
			1140	2.26
			1141	1.07
			1143	0.0722
Nitrate + Nitrite as Nitrogen	10	SHP02	0600	84.8
			0603	2100
			0604	1590
			0725	61.5
			0725	70.3
			0727	148
			0728	154
			0730	270
			0731	44.7
			0812	1430
			0813	2400
			0814	885
			0815	888
			0816	16.1
			0817	655
			0818	858
			0819	56.5
			0824	321
			0825	29.1
			0826	125
			0827	266
			0828	177
			0830	43.7
			0833	1260
			0835	83
			0836	29
			0838	587
			0841	625
			0844	794
			1007	913
1049	783			
1057	2370			
1059	397			
1068	339			
1069	515			
1070	668			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
			1071	1350
			1073	1690
			1074	1240
			1078	555
			1079	96
			1091	1040
			1092	869
			1093R	2060
			1095	1830
			1096	648
Selenium	0.01	SHP02	0603	0.0944
			0604	0.937
			0725	0.0327
			0725	0.0322
			0730	0.0107
			0731	0.03
			0812	5.53
			0813	0.0146
			0814	2.09
			0815	0.018
			0816	0.0156
			0818	2.11
			0819	0.0709
			0826	0.0428
			0827	0.0265
			0828	0.0931
			0830	0.0304
			0833	0.455
			0835	0.458
			0836	0.223
			0837	0.363
			0838	4.71
			0841	3.57
			0843	0.136
			0844	1.84
			0848	0.089
			1007	0.366
			1049	1.37
			1057	0.273
			1068	0.108
			1069	0.215
			1070	2.97
1071	1.43			
1073	2.35			
1074	0.299			
1078	2.79			
1079	0.444			
1091	2.47			
1092	2.38			
1093R	0.467			
1095	0.19			
1096	2.94			

Table 1 (continued). Shiprock Locations that Exceed Standards

Analyte	Standard ^a	Site Code	Location	Concentration
Uranium	0.044	SHP02	0600	0.76
			0602	0.451
			0604	0.0977
			0725	0.173
			0725	0.175
			0727	0.269
			0728	0.264
			0812	0.139
			0813	0.152
			0814	0.0919
			0815	0.304
			0817	30.4
			0818	0.115
			0819	0.913
			0820	0.0732
			0824	0.319
			0826	3.08
			0827	0.978
			0828	0.79
			0833	0.184
			0835	0.0771
			0836	0.0465
			0837	0.0597
			0838	0.138
			0841	0.142
			0844	0.181
			1007	3.01
			1049	0.164
			1057	0.0717
			1059	0.066
			1068	0.822
			1069	1.73
			1070	0.107
1071	0.145			
1073	0.0637			
1074	1.84			
1078	0.149			
1079	0.0454			
1091	0.119			
1092	0.11			
1093R	0.0851			
1095	0.0536			
1096	0.11			

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

Both filtered and unfiltered samples were submitted from the river locations. River location analyte concentrations for filtered and unfiltered samples were compared to statistical benchmark values derived using data from location 0898, which is upstream of the site on the San Juan River. As shown in Table 2, benchmark values for unfiltered samples were not exceeded for the river locations adjacent to or downstream from the site.

Some benchmark values for filtered samples were exceeded (Table 3). At location 0940 only manganese slightly exceeded the benchmark in the filtered sample. At location 0897 some

benchmarks were exceeded in the filtered sample. It is expected that results for filtered samples would be lower than for unfiltered samples. This typical difference was observed in the other river locations but in 0897, the results for nitrate + nitrite as nitrogen, sulfate, and uranium were 2 to 5 times higher in the filtered sample. This anomaly suggests that the sample was biased in the sampling and analytical process; therefore, laboratory results from the filtered sample at location 0897 have been qualified with a “J” flag, indicating that the results are estimates.

The results for all unfiltered samples collected from the river locations were below benchmark levels, which demonstrates that the site is not having a measureable impact on river quality.

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

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark	0.1	2.5000	0.8400	0.0017	2.2000	152	0.0087
0501	ND ^a	0.0683	0.675	ND	0.806	144	0.00196
0897	ND	0.0558	0.56	ND	0.751	148	0.00192
0898 (Benchmark Location)	ND	0.0447	0.323	ND	0.77	152	0.00191
0899	ND	0.053	0.344	ND	0.821	135	0.00196
0940	ND	0.0601	0.328	ND	0.814	137	0.00188
0956	ND	0.0657	0.348	ND	0.802	137	0.00163
0965	ND	0.0578	0.354	ND	0.83	136	0.00179
1203	ND	0.0847	0.362	ND	0.746	147	0.0019
1205	ND	0.126	0.379	ND	0.796	144	0.00183

^a ND = Not Detected.

Units are in milligrams per liter.

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

Location	Ammonia as N	Manganese	Nitrate+Nitrite as N	Selenium	Strontium	Sulfate	Uranium
Benchmark	0.1	0.0236	1.0889	0.0019	1.2072	248	0.0031
0501	ND ^a	0.0093	0.565	ND	0.787	140	0.00191
0897	ND	0.00736	<u>1.8</u>	0.00182	0.786	<u>713</u>	<u>0.00329</u>
0898 (Benchmark Location)	ND	0.00831	0.329	ND	0.843	146	0.00198
0899	ND	0.00775	0.358	ND	0.835	135	0.00187
0940	ND	<u>0.0305</u>	0.325	ND	0.819	136	0.00187
0956	ND	0.00728	0.35	ND	0.784	138	0.0017
0965	ND	0.00673	0.417	ND	0.814	139	0.00179
1203	ND	0.0183	0.369	ND	0.741	147	0.00165
1205	ND	0.00501	0.388	ND	0.727	142	0.00173

^a ND = Not Detected.

Units are in milligrams per liter.

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

Table 4. Floodplain River Locations, Filtered and Unfiltered Samples

Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a
0501	Calcium	62.2	64.5	4%
	Chloride	12.6	12.6	0%
	Magnesium	12.3	12.7	3%
	Manganese	0.00932	0.0683	152%
	Nitrate+Nitrite as N	0.565	0.675	18%
	Potassium	2.16	2.21	2%
	Selenium	ND ^b	ND	-----
	Sodium	38.5	38.1	1%
	Strontium	0.787	0.806	2%
	Sulfate	140	144	3%
	Uranium	0.00191	0.00196	3%
0897	Calcium	60.3	58.6	3%
	Chloride	39.7	12.6	104%
	Magnesium	14.1	11.8	18%
	Manganese	0.00736	0.0558	153%
	Nitrate+Nitrite as N	1.8	0.56	105%
	Potassium	2.38	2.38	0%
	Selenium	0.00182	ND	-----
	Sodium	49.6	39.7	22%
	Strontium	0.786	0.751	5%
	Sulfate	713	148	131%
	Uranium	0.00329	0.00192	53%
0898	Calcium	64.2	57.9	10%
	Chloride	12.5	13.1	5%
	Magnesium	13.6	12.1	12%
	Manganese	0.00831	0.0447	137%
	Nitrate+Nitrite as N	0.329	0.323	2%
	Potassium	2.41	2.48	3%
	Selenium	ND	ND	0%
	Sodium	42.8	39.9	7%
	Strontium	0.843	0.77	9%
	Sulfate	146	152	4%
	Uranium	0.00198	0.00191	4%
0899	Calcium	65.4	65.2	0%
	Chloride	11.7	11.5	2%
	Magnesium	12.8	13	2%
	Manganese	0.00775	0.053	149%
	Nitrate+Nitrite as N	0.358	0.344	4%
	Potassium	2.11	2.31	9%
	Selenium	ND	ND	-----
	Sodium	39.7	38.4	3%
	Strontium	0.835	0.821	2%
	Sulfate	135	135	0%
	Uranium	0.00187	0.00196	5%

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

Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a
0940	Calcium	64.4	63.9	1%
	Chloride	11.2	11.5	3%
	Magnesium	12.9	12.8	1%
	Manganese	0.0305	0.0601	65%
	Nitrate+Nitrite as N	0.325	0.328	1%
	Potassium	2.07	2.14	3%
	Selenium	ND	ND	-----
	Sodium	38.9	37.2	4%
	Strontium	0.819	0.814	1%
	Sulfate	136	137	1%
	Uranium	0.00187	0.00188	1%
0956	Calcium	61.8	64.3	4%
	Chloride	11.4	11.3	1%
	Magnesium	12.2	12.7	4%
	Manganese	0.00728	0.0657	160%
	Nitrate+Nitrite as N	0.35	0.348	1%
	Potassium	2.09	2	4%
	Selenium	ND	ND	-----
	Sodium	37.1	36.5	2%
	Strontium	0.784	0.802	2%
	Sulfate	138	137	1%
	Uranium	0.0017	0.00163	4%
0965	Calcium	63.8	66.2	4%
	Chloride	11.5	11.4	1%
	Magnesium	12.7	13.1	3%
	Manganese	0.00673	0.0578	158%
	Nitrate+Nitrite as N	0.417	0.354	16%
	Potassium	2.12	2.46	15%
	Selenium	ND	ND	-----
	Sodium	40.2	38.1	5%
	Strontium	0.814	0.83	2%
	Sulfate	139	136	2%
	Uranium	0.00179	0.00179	0%
1203	Calcium	59.3	60.4	2%
	Chloride	13.2	13	2%
	Magnesium	11.8	12.4	5%
	Manganese	0.0183	0.0847	129%
	Nitrate+Nitrite as N	0.369	0.362	2%
	Potassium	2.27	2.74	19%
	Selenium	ND	ND	-----
	Sodium	37	38.2	3%
	Strontium	0.741	0.746	1%
	Sulfate	147	147	0%
	Uranium	0.00165	0.0019	14%

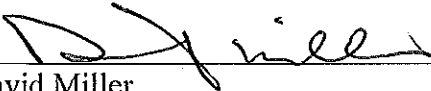
Table 4 (continued). Floodplain River Locations, Filtered and Unfiltered Samples

Location	Analyte	Result, Filtered	Result, Unfiltered	RPD ^a
1205	Calcium	58.5	65.5	11%
	Chloride	12.6	12.9	2%
	Magnesium	11.6	13	11%
	Manganese	0.00501	0.126	185%
	Nitrate+Nitrite as N	0.388	0.379	2%
	Potassium	2.16	2.83	27%
	Selenium	ND	ND	-----
	Sodium	36.5	38.1	4%
	Strontium	0.727	0.796	9%
	Sulfate	142	144	1%
	Uranium	0.00173	0.00183	6%

^a RPD = Relative Percent Difference.

^b ND = Not Detected.

Units are in milligrams per liter.

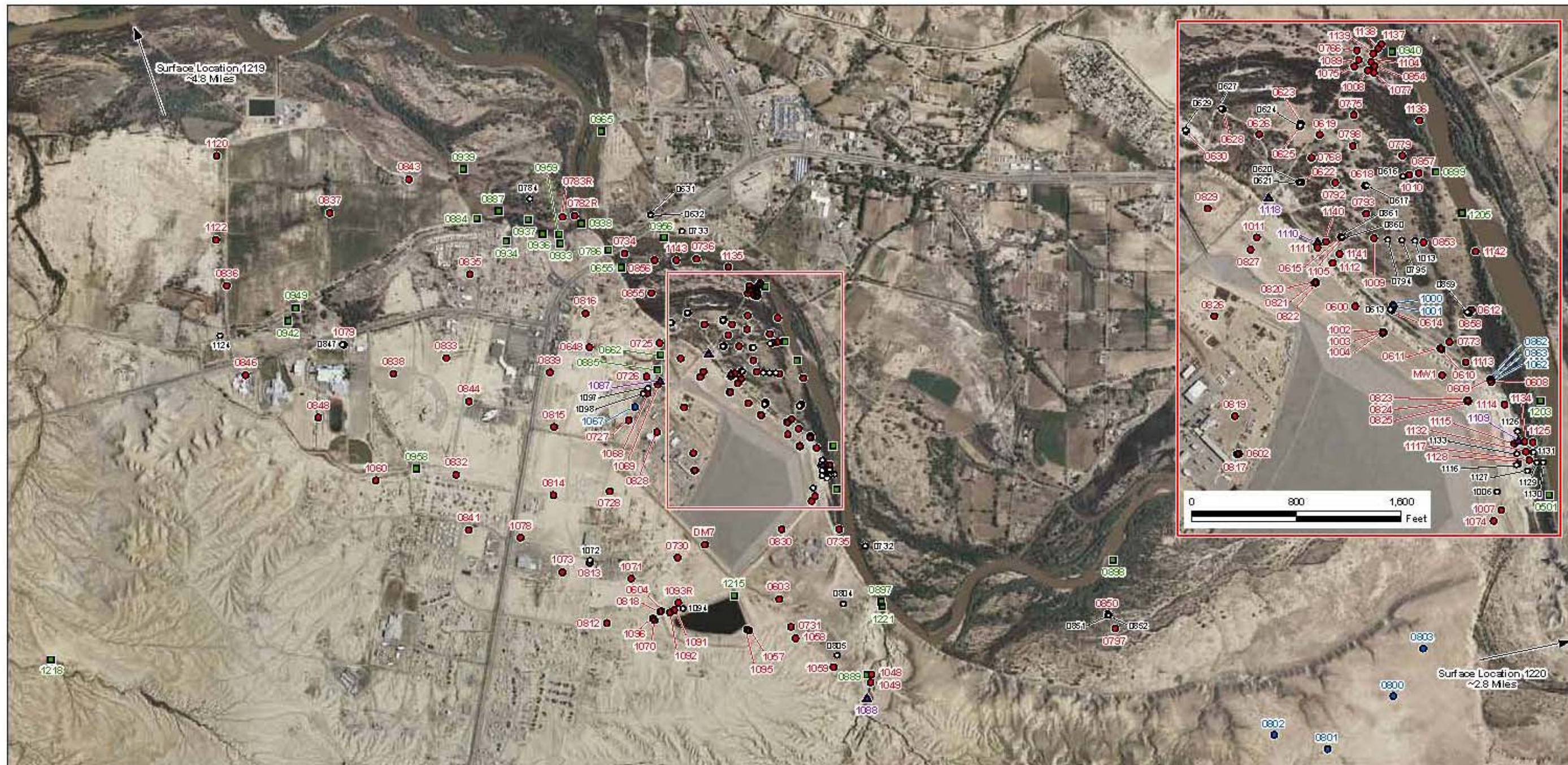


 David Miller
 Site Lead, S.M. Stoller Corporation

8/23/11

 Date

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



U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC05-81OR21400
Planned Sampling Map Shiprock, NM, Disposal Site March 2011	
DATE PREPARED: March 16, 2011	FILE NAME: S0755500

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Shiprock, New Mexico, Disposal Site Planned Monitoring Locations

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Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Shiprock, New Mexico	Date(s) of Water Sampling	March 21–25, 2011
Date(s) of Verification	May 27, 2011	Name of Verifier	Gretchen Baer

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures? List other documents, SOPs, instructions.	Yes	Work Order Letter dated February 24, 2011.
2. Were the sampling locations specified in the planning documents sampled?	No	A total of 35 locations were not sampled, see Trip Report for explanation.
3. Was a pre-trip calibration conducted as specified in the above-named documents?	Yes	Pre-trip calibrations were performed on March 18, 2011.
4. Was an operational check of the field equipment conducted daily? Did the operational checks meet criteria?	Yes	With the exception of the final (post-trip) turbidity check for S14818. Because these readings were <i>above</i> the acceptance criteria, and because the stability criteria of <10 NTU was met at the three affected GW locations, data were not further qualified.
5. Were the number and types (alkalinity, temperature, specific conductance, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well: Was one pump/tubing volume purged prior to sampling? Did the water level stabilize prior to sampling? Did pH, specific conductance, and turbidity measurements stabilize prior to sampling? Was the flow rate less than 500 mL/min? If a portable pump was used, was there a 4-hour delay between pump installation and sampling?	Yes Yes Yes Yes NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	Duplicate samples were collected from seven locations.
10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?	Yes	One equipment blank was collected.
11. Were trip blanks prepared and included with each shipment of VOC samples?	NA	
12. Were QC samples assigned a fictitious site identification number?	Yes	
Was the true identity of the samples recorded on the Quality Assurance Sample Log or in the Field Data Collection System (FDCS) report?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	No	At locations SHP01-0850 & SHP02-0662, 0889, 1057, 1078, 1093R, 1095, 1215, 1218, 1219, 1220, and 1221, turbidity was >10 NTU, but the samples inadvertently were not filtered. Some results will be qualified with a "J" flag as estimated values.
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members (hardcopies) or are dates present for the "Date Signed" fields (FDCS)?	Yes	
18. Was all other pertinent information documented on the field data sheets?	Yes	
19. Was the presence or absence of ice in the cooler documented at every sample location?	Yes	
20. Were water levels measured at the locations specified in the planning documents?	Yes	

Laboratory Performance Assessment

General Information

Report Number (RIN): 11033665
 Sample Event: March 21–25, 2011
 Site(s): Shiprock Disposal Site (Floodplain), New Mexico
 Laboratory: GEL Laboratories, Charleston, South Carolina
 Work Order Nos.: 274790, 274796, 274800, 274802, 274803
 Analysis: Metals and Wet Chemistry
 Validator: Gretchen Baer
 Review Date: May 27, 2011

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated), “Standard Practice for Validation of Laboratory Data.” The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 5.

Table 5. Analytes and Methods

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

Data Qualifier Summary

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

Table 6. Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
274790-001	0501	Ammonia as N	U	Less than 5 times the method blank
274790-001	0501	Chloride	J	Matrix spike failure
274790-002	0501	Ammonia as N	U	Less than 5 times the method blank
274790-002	0501	Chloride	J	Matrix spike failure
274790-003	0608	Chloride	J	Field duplicate failure
274790-003	0608	Nitrate + Nitrite as N	J	Field duplicate failure
274790-006	0612	Potassium	J	Reporting limit verification failure
274790-011	0622	Ammonia as N	U	Less than 5 times the method blank

Table 6 (continued). Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
274790-012	0623	Ammonia as N	U	Less than 5 times the method blank
274790-012	0623	Potassium	J	Reporting limit verification failure
274790-013	0625	Ammonia as N	U	Less than 5 times the method blank
274790-013	0625	Potassium	J	Reporting limit verification failure
274790-014	0626	Potassium	J	Reporting limit verification failure
274790-015	0628	Ammonia as N	U	Less than 5 times the method blank
274790-015	0628	Potassium	J	Reporting limit verification failure
274790-016	0630	Ammonia as N	U	Less than 5 times the method blank
274790-016	0630	Potassium	J	Reporting limit verification failure
274790-017	0655	Ammonia as N	U	Less than 5 times the method blank
274790-017	0655	Potassium	J	Reporting limit verification failure
274790-018	0734	Ammonia as N	U	Less than 5 times the method blank
274790-018	0734	Potassium	J	Reporting limit verification failure
274790-019	0735	Sulfate	J	Field duplicate failure
274790-019	0735	Selenium	J	Matrix spike failure
274790-019	0735	Uranium	J	Serial dilution failure
274790-019	0735	Ammonia as N	J	Exceeded holding time. MS failure.
274790-020	0736	Ammonia as N	J	Exceeded holding time
274796-001	0766	Ammonia as N	U	Less than 5 times the method blank
274796-001	0766	Chloride	J	Matrix spike failure
274796-001	0766	Uranium	J	Serial dilution failure
274796-004	0775	Ammonia as N	U	Less than 5 times the method blank
274796-006	0782R	Ammonia as N	U	Less than 5 times the method blank
274796-007	0783R	Ammonia as N	U	Less than 5 times the method blank
274796-008	0792	Ammonia as N	U	Less than 5 times the method blank
274796-010	0797	Ammonia as N	U	Less than 5 times the method blank
274796-012	0850	Ammonia as N	U	Less than 5 times the method blank
274796-015	0855	Ammonia as N	U	Less than 5 times the method blank
274796-016	0856	Ammonia as N	U	Less than 5 times the method blank
274796-018	0897	Ammonia as N	U	Less than 5 times the method blank
274796-019	0897	Ammonia as N	U	Less than 5 times the method blank
274796-020	0898	Ammonia as N	U	Less than 5 times the method blank
274800-001	0898	Ammonia as N	U	Less than 5 times the method blank
274800-002	0899	Ammonia as N	U	Less than 5 times the method blank
274800-003	0899	Ammonia as N	U	Less than 5 times the method blank
274800-004	0940	Ammonia as N	U	Less than 5 times the method blank
274800-005	0940	Ammonia as N	U	Less than 5 times the method blank
274800-006	0956	Ammonia as N	U	Less than 5 times the method blank
274800-007	0956	Ammonia as N	U	Less than 5 times the method blank
274800-008	0965	Ammonia as N	U	Less than 5 times the method blank
274800-009	0965	Ammonia as N	U	Less than 5 times the method blank
274800-011	1009	Ammonia as N	J	Matrix spike failure
274800-016	1110	Ammonia as N	U	Less than 5 times the method blank
274802-001	1115	Chloride	J	Matrix spike & field duplicate failures
274802-001	1115	Selenium	J	Matrix spike failure
274802-003	1118	Ammonia as N	U	Less than 5 times the method blank

Table 6 (continued). Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
274802-007	1135	Ammonia as N	U	Less than 5 times the method blank
274802-008	1136	Ammonia as N	U	Less than 5 times the method blank
274802-015	1143	Ammonia as N	U	Less than 5 times the method blank
274802-016	1203	Ammonia as N	U	Less than 5 times the method blank
274802-018	1205	Ammonia as N	U	Less than 5 times the method blank
274802-019	1205	Ammonia as N	U	Less than 5 times the method blank
274802-020	Equip Blank, 2126	Ammonia as N	U	Less than 5 times the method blank
274802-020	Equip Blank, 2126	Potassium	U	Less than 5 times the calibration blank
274802-020	Equip Blank, 2126	Potassium	J	Reporting limit verification failure
274802-020	Equip Blank, 2126	Sodium	U	Less than 5 times the calibration blank
274802-020	Equip Blank, 2126	Sodium	J	Reporting limit verification failure
274803-001	0735 Dup, 2604	Selenium	J	Matrix spike failure
274803-001	0735 Dup, 2604	Sulfate	J	Field duplicate failure
274803-001	0735 Dup, 2604	Uranium	J	Serial dilution failure
274803-002	1115 Dup, 2729	Chloride	J	Matrix spike failure & field duplicate failures
274803-002	1115 Dup, 2729	Selenium	J	Matrix spike failure
274803-004	0608 Dup, 2899	Chloride	J	Field duplicate failure
274803-004	0608 Dup, 2899	Nitrate + Nitrite as N	J	Field duplicate failure

Sample Shipping/Receiving

GEL Laboratories in Charleston, South Carolina, received 84 water samples on March 29, 2011, accompanied by Chain of Custody (COC) forms. The air waybill numbers were listed on the Sample Receipt and Review Form. The COC 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 COC forms, had the following errors. The sample date, sample time, or ticket number on some bottle labels was written incorrectly. However, the information recorded on the COC form was correct as updated from the Field Data Collection System and was used for sample login.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers between 4 °C and 5 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses with the following exception. A bottle for location 0783R was received unpreserved and was acidified by the laboratory upon receipt. No data qualification is required for this error. All samples were analyzed within the applicable holding times, with the exception of two locations for ammonia as N analysis. These samples were initially analyzed within holding time but were reanalyzed out of holding time in response to Request for Information #11-3249, which was issued to correct a laboratory error (the samples were reversed by the laboratory during the initial analysis). Ammonia as N results for these samples are qualified with a “J” flag (estimated) for the expired holding time, but the reported results are consistent with historical values.

Laboratory Instrument Calibration

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

Method EPA 350.1

Calibration was performed for ammonia as N on April 5, 6, 12, 13, and 19, 2011, and June 7, 2011, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the method detection limit (MDL). Initial and continuing calibration verification checks were made at the required frequency, resulting in 39 verification checks. All calibration checks met the acceptance criteria.

Method EPA 353.2

Four calibrations were performed for nitrate + nitrite as N on April 5, 13, and 14, 2011, using four calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency, resulting in 21 verification checks. All calibration checks met the acceptance criteria.

Method SW-846 6010B

Calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed April 7, 8, 11, 12, 15, and 18, 2011, using three calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency, resulting in 95 verification checks. All calibration checks associated with reported results met the acceptance criteria. A calibration check recovery for magnesium was slightly above the limit at 110.2 percent, which is acceptable. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit (PQL), and all results were within the acceptance range, with the following exception. Some potassium and sodium check results were outside the acceptance range. Samples with dilution-factor-corrected results near the detection limit are qualified with a "J" flag (estimated).

Method SW-846 6020A

Calibrations for selenium and uranium were performed April 18–20, and 22–23, 2011, using two calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency, resulting in 53 verification checks. All calibration checks associated with reported results met the acceptance criteria.

Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

Method SW-846 9056

Calibrations were performed for chloride and sulfate on November 5, 2010, January 18, 2011, and February 9, 2011, using six calibration standards. The calibration curve correlation coefficient values were greater than 0.995, and the absolute values of the intercepts were less than 3 times the MDL for chloride and only slightly above 3 times the MDL for sulfate. Initial and continuing calibration verification checks were made at the required frequency, resulting in 30 verification checks. All calibration checks met the acceptance criteria.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a “U” flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration. All method blank and calibration blank results associated with the samples were below the PQLs for all analytes. Some potassium and sodium calibration blanks were negative, and the absolute values were greater than the MDL but less than the PQL; all associated sample results were greater than 5 times the MDL. Some method blank results for nitrate + nitrite as N were slightly greater than the MDL. The associated samples that were diluted had results greater than 5 times the blank, so no further qualification was required.

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

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

Matrix Spike Analysis

Matrix spike and matrix spike duplicate (MS/MSD) samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated with the following exceptions. Some ammonia as N, chloride, and selenium spike recoveries were above the acceptance range. Associated results above the detection limit are qualified with a “J” flag (estimated). An MSD recovery for ammonia as N was below the acceptance range. The affected result is qualified with a “J” flag (estimated).

Laboratory Replicate Analysis

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

Laboratory Control Samples

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

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 50 times the PQL for method 6010 or greater than 100 times the PQL for method 6020. All evaluated serial dilution data were acceptable with the following exceptions. Two serial dilutions for uranium did not meet the acceptance criteria. Associated results are qualified with a “J” flag as estimated values.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. For the ammonia as N analysis, results are calculated using a preparation dilution and an analytical dilution. The required detection limits (RDLs) were met for all analytes with one exception. The selenium detection limit was 1.5 micrograms per liter ($\mu\text{g/L}$), which is above the Line Item Code RDL of 0.1 $\mu\text{g/L}$, but is 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, including manual integrations, were satisfactory.

Electronic Data Deliverable (EDD) File

A revised EDD file was received on June 14, 2011. The Sample Management System EDD validation module was used to verify that the EDD files were complete and in compliance with requirements. The module compares the contents of the files to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Anion/Cation Balance

The anion/cation balance is used to determine if major ion concentrations have been quantified correctly. The total anions should balance with (be equal to) the total cations when expressed in milliequivalents per liter (meq/L). Table 7 shows the total anion and cation results in groundwater samples from this event and the charge balance, which is a relative percent difference calculation. Typically, a charge balance difference of 10 percent is considered acceptable.

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

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP01	0608	129	116	5
SHP01	0610	137	131	2
SHP01	0611	141	141	0
SHP01	0612	59	66	5
SHP01	0614	249	219	7
SHP01	0615	170	193	6
SHP01	0618	286	307	3
SHP01	0619	85	82	2
SHP01	0622	97	74	13
SHP01	0623	69	68	1
SHP01	0625	71	53	14
SHP01	0626	71	59	9
SHP01	0628	52	60	7
SHP01	0630	90	101	6
SHP01	0734	146	128	7
SHP01	0735	347	441	12
SHP01	0736	76	84	5
SHP01	0766	123	122	0
SHP01	0768	405	353	7
SHP01	0773	55	55	0
SHP01	0775	107	98	4
SHP01	0779	171	157	4
SHP01	0782R	13	14	7
SHP01	0783R	17	18	3
SHP01	0792	149	146	1
SHP01	0793	79	78	1
SHP01	0797	112	69	24
SHP01	0798	215	132	24
SHP01	0850	19	23	10
SHP01	0853	21	22	3
SHP01	0854	272	268	1
SHP01	0855	91	93	1
SHP01	0856	77	75	1
SHP01	0857	106	111	2

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

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP01	1008	209	191	5
SHP01	1009	44	44	0
SHP01	1089	123	113	5
SHP01	1104	163	185	6
SHP01	1105	179	191	3
SHP01	1109	20	20	0
SHP01	1110	134	120	6
SHP01	1111	254	258	1
SHP01	1112	295	272	4
SHP01	1113	123	123	0
SHP01	1114	89	91	1
SHP01	1115	190	195	1
SHP01	1117	6	5	8
SHP01	1128	302	271	5
SHP01	1132	6	6	1
SHP01	1134	10	11	5
SHP01	1135	91	95	2
SHP01	1136	11	15	15
SHP01	1137	47	49	1
SHP01	1138	57	59	2
SHP01	1139	188	161	8
SHP01	1140	302	299	0
SHP01	1141	117	119	0
SHP01	1142	6	6	0
SHP01	1143	70	71	0

The charge balance value was greater than ten percent for six locations. Further review of the data for these locations did not indicate any errors in the data.

SAMPLE MANAGEMENT SYSTEM
General Data Validation Report

RIN: 11033665 Lab Code: GEN Validator: Gretchen Baer Validation Date: 6/14/2011

Project: Shiprock Monitoring Analysis Type: Metals General Chem Rad Organics

of Samples: 84 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

There are 2 holding time failures.

There are 87 detection limit failures.

There was 1 trip/equipment blank evaluated.

There were 4 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Non-Compliance Report: Holding Times

RIN: 11033665 Lab Code: GEN

Project: Shiprock Monitoring

Validation Date: 6/14/2011

Ticket	Location	Lab Sample ID	Method Code	Holding Times			Criteria			Reported Dates		
				Collection to Preparation	Preparation to Analysis	Collection to Analysis	Collection to Preparation	Preparation to Analysis	Collection to Analysis	Collection Date	Preparation Date	Analysis Date
JET 775	0735	274790019	WCH-A-005			76			28	03/22/2011	06/06/2011	06/07/2011
JET 840	0736	274790020	WCH-A-005			74			28	03/24/2011	06/06/2011	06/07/2011

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11033665Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Calcium	ICP/ES	04/07/2011							OK	106.0			2.0	100.0	0.1	108.0
Calcium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	105.0			1.0		0.2	
Calcium	ICP/ES	04/16/2011	0.0000	1.0000	OK	OK	OK	OK	OK	102.0			3.0	96.0	1.4	107.0
Calcium	ICP/ES	04/08/2011	0.0000	1.0000	OK	OK	OK	OK	OK	103.0				101.0	1.9	100.0
Calcium	ICP/ES	04/16/2011							OK	98.5			4.0	97.0		
Calcium	ICP/ES	04/12/2011	0.0000	1.0000	OK	OK	OK	OK					0.0	99.0	4.4	110.0
Magnesium	ICP/ES	04/08/2011	0.0000	1.0000	OK	OK	OK	OK	OK	105.0				99.0	0.9	112.0
Magnesium	ICP/ES	04/12/2011	0.0000	1.0000	OK	OK	OK	OK					0.0	96.0		111.0
Magnesium	ICP/ES	04/16/2011							OK	98.9			5.0		1.5	105.0
Magnesium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	106.0	118.0		1.0	97.0	2.0	113.0
Magnesium	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK					2.0	97.0	1.8	104.0
Magnesium	ICP/ES	04/07/2011							OK	107.0	118.0		3.0	95.0	2.4	
Magnesium	ICP/ES	04/16/2011	0.0000	1.0000	OK	OK	OK	OK	OK	103.0						
Manganese	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	102.0	99.3			95.0	3.0	105.0
Manganese	ICP/ES	04/07/2011							OK	101.0	101.0		2.0	95.0	1.8	
Manganese	ICP/ES	04/12/2011	0.0000	1.0000	OK	OK	OK	OK					0.0			105.0
Manganese	ICP/ES	04/16/2011	0.0000	1.0000	OK	OK	OK	OK	OK	94.0	97.1		2.0			

SAMPLE MANAGEMENT SYSTEM Metals Data Validation Worksheet

RIN: 11033665 **Lab Code:** GEN **Date Due:** 4/26/2011
Matrix: Water **Site Code:** SHP **Date Completed:** 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Manganese	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK		80.2		2.0	97.0		104.0	
Manganese	ICP/ES	04/16/2011						OK	97.7				98.0		104.0	
Manganese	ICP/ES	04/08/2011	0.0000	1.0000	OK	OK	OK	OK	100.0			1.0	95.0	0.6	102.0	
Potassium	ICP/ES	04/11/2011	0.0000	1.0000	OK	OK	OK	OK	101.0	102.0		2.0	114.0		75.0	
Potassium	ICP/ES	04/18/2011	0.0000	1.0000	OK	OK	OK	OK				2.0	114.0		87.0	
Potassium	ICP/ES	04/16/2011	0.0000	1.0000	OK	OK	OK	OK	102.0							
Potassium	ICP/ES	04/16/2011						OK	96.5				111.0		75.0	
Potassium	ICP/ES	04/12/2011	0.0000	1.0000	OK	OK	OK	OK	102.0			1.0	107.0	0.9	140.0	
Potassium	ICP/ES	04/11/2011						OK	101.0	94.5		6.0	117.0	8.8		
Potassium	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK				1.0				
Potassium	ICP/ES	04/12/2011													268.0	
Sodium	ICP/ES	04/18/2011	0.0000	1.0000	OK	OK	OK	OK	96.7			0.0	113.0	4.9	104.0	
Sodium	ICP/ES	04/12/2011	0.0000	1.0000	OK	OK	OK	OK	99.7			2.0	111.0	1.4	99.0	
Sodium	ICP/ES	04/11/2011	0.0000	1.0000	OK	OK	OK	OK	106.0			5.0	107.0	5.5	105.0	
Sodium	ICP/ES	04/11/2011	0.0000	1.0000	OK	OK	OK	OK	102.0			2.0		1.1	288.0	
Sodium	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK	99.3			2.0		0.1		
Strontium	ICP/ES	04/16/2011	0.0000	1.0000	OK	OK	OK	OK	99.1			5.0				

SAMPLE MANAGEMENT SYSTEM Metals Data Validation Worksheet

RIN: 11033665 **Lab Code:** GEN **Date Due:** 4/26/2011
Matrix: Water **Site Code:** SHP **Date Completed:** 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Strontium	ICP/ES	04/16/2011							OK	96.0			5.0	104.0		104.0
Strontium	ICP/ES	04/12/2011	0.0000	1.0000	OK	OK	OK	OK					1.0			101.0
Strontium	ICP/ES	04/12/2011												106.0		
Strontium	ICP/ES	04/08/2011	0.0000	1.0000	OK	OK	OK	OK	OK	103.0				106.0	2.7	105.0
Strontium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	102.0	114.0		3.0	105.0	2.0	109.0
Strontium	ICP/ES	04/07/2011							OK	103.0	110.0		0.0		0.9	
Strontium	ICP/ES	04/18/2011												101.0	1.2	100.0
Strontium	ICP/ES	04/26/2011												99.0	0.6	95.0
Selenium	ICP/MS	04/23/2011												97.0		103.0
Selenium	ICP/MS	04/20/2011	0.0000	1.0000	OK	OK	OK	OK	OK	103.0	154.0			89.0		103.0
Selenium	ICP/MS	04/20/2011							OK	96.0	119.0		0.0	94.0		107.0
Selenium	ICP/MS	04/19/2011	0.0000	1.0000	OK	OK	OK	OK	OK	101.0	101.0			98.0		105.0
Selenium	ICP/MS	04/19/2011							OK	100.0	99.4			91.0		100.0
Selenium	ICP/MS	04/21/2011	0.0000	1.0000	OK	OK	OK	OK	OK	91.8	172.0		9.0	96.1		113.0
Uranium	ICP/MS	04/21/2011	0.0000	1.0000	OK	OK	OK	OK	OK	88.7			6.0	114.0	11.7	89.0
Uranium	ICP/MS	04/20/2011	0.0000	1.0000	OK	OK	OK	OK	OK	114.0			0.0	102.0	7.5	83.0
Uranium	ICP/MS	04/20/2011							OK	99.4	89.4		2.0	109.0	0.0	110.0

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11033665Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Uranium	ICP/MS	04/19/2011	0.0000	1.0000	OK	OK	OK	OK	OK	109.0	107.0		4.0	106.0	11.4	103.0
Uranium	ICP/MS	04/19/2011							OK	106.0	106.0		2.0	108.0	2.5	115.0

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 11033665 **Lab Code:** GEN **Date Due:** 4/26/2011
Matrix: Water **Site Code:** SHP **Date Completed:** 4/26/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Chloride	11/05/2010	0.111	0.9986	OK		OK							
Chloride	01/18/2011	0.165	0.9974	OK		OK							
Chloride	02/09/2011	0.220	0.9976	OK		OK							
Chloride	03/30/2011					OK	OK	93.4	114		0		
Chloride	03/31/2011					OK	OK	93.3					
Chloride	03/31/2011					OK	OK	93.6					
Chloride	04/01/2011								96.8		1		
Chloride	04/01/2011								95.3		3		
Chloride	04/02/2011								112		0		
Chloride	04/04/2011					OK	OK	95.7	97.8		1		
Chloride	04/05/2011								102		1		
Chloride	04/07/2011					OK	OK	95.5	101		0		
Chloride	04/08/2011					OK	OK	97.9					
Chloride	04/11/2011								116		0		
Chloride	04/12/2011								99.3		1		

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 11033665 **Lab Code:** GEN **Date Due:** 4/26/2011
Matrix: Water **Site Code:** SHP **Date Completed:** 4/26/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Chloride	04/13/2011								98.4	94.6			
NH3 as N	04/05/2011							OK	94.7			3	
NH3 as N	04/12/2011	-0.012	0.9999	OK	OK	OK	OK	OK	95.7	92.8	93.9	1	
NH3 as N	04/12/2011									94.5	96.5	2	
NH3 as N	04/13/2011	-0.023	0.9999	OK	OK	OK	OK	OK	97.2	96.5	94.5	2	
NH3 as N	04/13/2011							OK	94.3	96	76	4	
NH3 as N	04/13/2011											3	
NH3 as N	04/13/2011									92	94	2	
NH3 as N	04/19/2011	-0.022	0.9998	OK	OK	OK	OK	OK	99.8	99.2	97.2	2	
NH3 as N	04/19/2011									99	96	1	
NH3 as N	06/07/2011	-0.016	1.0000	OK	OK	OK	OK	OK	94.70	112.0	116.0	8.00	
NO2+NO3 as N	04/05/2011	-0.009	0.9999	OK	OK	OK	OK	OK	109	106		0	
NO2+NO3 as N	04/13/2011	-0.006	0.9999	OK	OK	OK	OK	OK	109	103		4	
NO2+NO3 as N	04/13/2011							OK	105	102		1	
NO2+NO3 as N	04/13/2011							OK	109	92.5		4	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 11033665 **Lab Code:** GEN **Date Due:** 4/26/2011
Matrix: Water **Site Code:** SHP **Date Completed:** 4/26/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
NO2+NO3 as N	04/13/2011							OK	109	105		2	
NO2+NO3 as N	04/14/2011	-0.004	1.0000	OK	OK	OK	OK			99.9		14	
NO2+NO3 as N	04/14/2011									104		2	
NO2+NO3 as N	04/14/2011									104			
NO2+NO3 as N	04/14/2011									109			
Sulfate	11/05/2010	0.286	0.9996	OK		OK							
Sulfate	01/18/2011	0.347	0.9986	OK		OK							
Sulfate	02/09/2011	0.320	0.9986	OK		OK							
Sulfate	03/30/2011				OK		OK	98					
Sulfate	03/31/2011				OK		OK	98.6	110			1	
Sulfate	03/31/2011				OK		OK	96.7					
Sulfate	04/01/2011								101			2	
Sulfate	04/01/2011								105			0	
Sulfate	04/02/2011								108			0	
Sulfate	04/04/2011				OK		OK	96.7	106			0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 11033665

Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Sulfate	04/06/2011								114			1	
Sulfate	04/07/2011				OK		OK	OK	101	103		0	
Sulfate	04/08/2011				OK		OK	OK	99.9				
Sulfate	04/09/2011									110		0	
Sulfate	04/11/2011									107		0	
Sulfate	04/13/2011				OK		OK	OK	100	96.8			

General Information

Report Number (RIN): 11033666
Sample Event: March 21–25, 2011
Site(s): Shiprock Disposal Site (Terrace), New Mexico
Laboratory: GEL Laboratories, Charleston, South Carolina
Work Order No.: 274766
Analysis: Metals and Wet Chemistry
Validator: Gretchen Baer
Review Date: May 27, 2011

This validation was performed according to the *Environmental Procedures Catalog* (LMS/PRO/S04325, continually updated), “Standard Practice for Validation of Laboratory Data.” The procedure was applied at Level 3, Data Validation. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 8.

Table 8. Analytes and Methods

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

Data Qualifier Summary

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

Table 9. Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
274766-001	0814	Nitrate + Nitrite as N	J	Replicate failure
274766-001	0814	Selenium	J	Serial dilution failure
274766-005	0725	Ammonia as N	J	Matrix spike failure
274766-005	0725	Manganese	J	Field duplicate failure
274766-005	0725	Potassium	J	Reporting limit verification failure
274766-011	0725 Dup, 2812	Ammonia as N	J	Matrix spike failure
274766-011	0725 Dup, 2812	Manganese	J	Field duplicate failure
274766-011	0725 Dup, 2812	Potassium	J	Reporting limit verification failure
274766-018	1058	Nitrate + Nitrite as N	U	Less than 5 times the method blank
274766-018	1058	Potassium	J	Reporting limit verification failure

Table 9 (continued). Data Qualifier Summary

Sample Number	Location	Analyte	Flag	Reason
274766-021	1078	Uranium	J	Matrix spike failure
274766-022	1079	Ammonia as N	U	Less than 5 times the method blank
274766-022	1079	Chloride	J	Matrix spike failure
274766-022	1079	Potassium	J	Reporting limit verification failure
274766-022	1079	Sulfate	J	Matrix spike failure
274766-027	0813	Ammonia as N	J	Field duplicate failure
274766-027	0813	Selenium	J	Field duplicate failure
274766-028	0835	Ammonia as N	U	Less than 5 times the method blank
274766-028	0835	Potassium	J	Reporting limit verification failure. Field duplicate failure.
274766-028	0835	Sulfate	J	Field duplicate failure
274766-029	0836	Ammonia as N	U	Less than 5 times the method blank
274766-030	0837	Ammonia as N	U	Less than 5 times the method blank
274766-030	0837	Potassium	J	Reporting limit verification failure
274766-031	0838	Ammonia as N	U	Less than 5 times the method blank
274766-036	0728	Selenium	J	Negative calibration blank
274766-038	0816	Ammonia as N	U	Less than 5 times the method blank
274766-038	0816	Potassium	J	Reporting limit verification failure
274766-039	0648	Potassium	J	Reporting limit verification failure
274766-039	0648	Selenium	J	Negative calibration blank
274766-040	0820	Selenium	J	Negative calibration blank
274766-041	0730	Uranium	J	Serial dilution failure
274766-045	0843	Ammonia as N	U	Less than 5 times the method blank
274766-047	0949	Potassium	J	Reporting limit verification failure
274766-048	0812	Ammonia as N	U	Less than 5 times the method blank
274766-051	0726	Chloride	J	Matrix spike failure
274766-053	MW1	Potassium	J	Reporting limit verification failure
274766-054	0662	Potassium	J	Reporting limit verification failure
274766-056	0828	Ammonia as N	U	Less than 5 times the method blank
274766-057	0830	Potassium	J	Reporting limit verification failure
274766-059	0835 Dup, 2810	Ammonia as N	U	Less than 5 times the method blank
274766-059	0835 Dup, 2810	Potassium	J	Field duplicate failure
274766-059	0835 Dup, 2810	Sulfate	J	Field duplicate failure
274766-060	0813 Dup, 2811	Ammonia as N	J	Field duplicate failure
274766-060	0813 Dup, 2811	Selenium	J	Field duplicate failure
274766-061	1057	Nitrate + Nitrite as N	J	Matrix spike failure
274766-061	1057	Selenium	J	Serial dilution failure
274766-061	1057	Uranium	J	Replicate, serial dilution, & MS failure
274766-064	1220	Ammonia as N	U	Less than 5 times the method blank
274766-065	1221	Ammonia as N	U	Less than 5 times the method blank
274766-066	0600	Potassium	J	Reporting limit verification failure
274766-067	1219	Ammonia as N	U	Less than 5 times the method blank

Sample Shipping/Receiving

GEL Laboratories in Charleston, South Carolina, received 67 water samples on March 29, 2011, accompanied by COC forms. The air waybill numbers were listed on the Sample Receipt and Review Form. The COC 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 COC forms had no errors or omissions the following exception. A sample time on a bottle label was written incorrectly. The information recorded on the COC form was correct as updated from the Field Data Collection System and was used for sample login.

Preservation and Holding Times

The sample shipments were received intact with the temperatures inside the iced coolers between 4°C and 5 °C, which complies with requirements. All samples were received in the correct container types and had been preserved correctly for the requested analyses. All samples were analyzed within the applicable holding times.

Laboratory Instrument Calibration

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

Method MCAWW 350.1

Calibration was performed for ammonia as N on April 1, 7, and 8, 2011, using five calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency, resulting in 27 verification checks. All calibration checks met the acceptance criteria.

Method MCAWW 353.2

Four calibrations were performed for nitrate + nitrite as N on April 11, and 12, 2011, using four calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Initial and continuing calibration verification checks were made at the required frequency, resulting in 21 verification checks. All calibration checks met the acceptance criteria.

Method SW-846 6010B

Two calibrations for calcium, magnesium, manganese, potassium, sodium, and strontium were performed April 6, 7, 11, 18, and 25, 2011, using three calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were

prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency, resulting in 66 verification checks. All calibration checks associated with reported results met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL, and all results were within the acceptance range with the following exception. Some potassium check results were outside the acceptance range. Samples with dilution-factor-corrected results near the detection limit are qualified with a “J” flag (estimated).

Method SW-846 6020A

Initial calibrations for selenium and uranium were performed on April 9, 11, 13, 15, 20, 22, 23, and 25, 2011, using two calibration standards. The calibration curve correlation coefficient values were greater than 0.995 and the absolute values of the intercepts were less than 3 times the MDL. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency, resulting in 76 verification checks. All calibration checks associated with reported results met the acceptance criteria. Reporting limit verification checks were made at the required frequency to verify the linearity of the calibration curve near the PQL, and all results were within the acceptance range. Mass calibration and resolution verifications were performed at the beginning of each analytical run in accordance with the analytical procedure. Internal standard recoveries associated with requested analytes were stable and within acceptable ranges.

Method SW-846 9056

Calibrations were performed for chloride and sulfate on November 5, 2010, and January 18, 2011, using six calibration standards. The calibration curve correlation coefficient values were greater than 0.995, and the absolute values of the intercepts were less than 3 times the MDL for chloride and only slightly above 3 times the MDL for sulfate. Initial and continuing calibration verification checks were made at the required frequency, resulting in 39 verification checks. All calibration checks met the acceptance criteria.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. In cases where a blank concentration exceeds the MDL, the associated sample results are qualified with a “U” flag (not detected) when the sample result is greater than the MDL but less than 5 times the blank concentration. All method blank and calibration blank results associated with the samples were below the PQLs for all analytes. Some potassium calibration blanks were negative and the absolute values were greater than the MDL but less than the PQL. All associated sample results were greater than 5 times the MDL. Some method blank results for nitrate + nitrite as N were slightly greater than the MDL. The associated samples that were diluted and that had results greater than 5 times the blank were not further qualified.

For selenium, a method blank result was negative and the absolute value was greater than the MDL but less than the PQL. Associated selenium results less than 5 times the MDL are qualified with a “J” flag (estimated).

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. An interference check sample recovery for selenium was slightly above the limit at 120.5 percent, which is acceptable.

Matrix Spike Analysis

MS/MSD samples are used to measure method performance in the sample matrix. The MS/MSD data are not evaluated when the concentration of the unspiked sample is greater than 4 times the spike concentration. The spikes met the recovery and precision criteria for all analytes evaluated with the following exceptions. Spike recoveries were outside the acceptance range for one ammonia as N, two chloride, one nitrate + nitrite as N, one sulfate, and two uranium samples. Associated results are qualified with a “J” flag (estimated).

Laboratory Replicate Analysis

Laboratory replicate analyses are used to determine laboratory precision for each sample matrix. The relative percent difference for replicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than the PQL, the range should be no greater than the PQL. The replicate results met these criteria, with the exception of one sample replicate for nitrate + nitrite as N and one sample replicate for uranium. Associated results are qualified with a “J” flag (estimated).

Laboratory Control Samples

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

Metals Serial Dilution

Serial dilutions were prepared and analyzed for the metals analyses to monitor chemical or physical interferences in the sample matrix. Serial dilution data are evaluated when the concentration of the undiluted sample is greater than 50 times the PQL for method 6010 or greater than 100 times the PQL for method 6020. All evaluated serial dilution data were acceptable with the following exceptions. Some selenium and uranium serial dilutions did not meet the acceptance criteria. Associated sample are qualified with a “J” flag as estimated values.

Detection Limits/Dilutions

Samples were diluted in a consistent and acceptable manner when required. For the ammonia as N analysis, results are calculated using a preparation dilution and an analytical dilution. The RDLs were met for all analytes with one exception. The selenium detection limit was 1.5 µg/L, which is above the Line Item Code RDL of 0.1 µg/L, but is 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. There were no manual integrations performed, and all peak integrations were satisfactory.

EDD File

The revised EDD file arrived on April 29, 2011. The Sample Management System EDD validation module was used to verify that the EDD files were complete and in compliance with requirements. The module compares the contents of the files to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

Anion/Cation Balance

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

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

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP02	0600	285	490	26
SHP02	0602	408	390	2
SHP02	0603	203	216	3
SHP02	0604	393	413	3
SHP02	0648	44	40	4
SHP02	0725	79	76	1
SHP02	0726	130	124	2
SHP02	0727	260	263	1
SHP02	0728	112	108	2
SHP02	0730	54	57	3
SHP02	0731	104	102	1
SHP02	0812	486	493	1
SHP02	0813	402	410	1
SHP02	0814	372	366	1
SHP02	0815	384	380	0
SHP02	0816	42	39	4
SHP02	0817	321	338	3
SHP02	0818	348	441	12

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

Site Code	Location	Cations (meq/L)	Anions (meq/L)	Charge Balance (%)
SHP02	0819	275	307	5
SHP02	0820	328	335	1
SHP02	0824	237	231	1
SHP02	0825	307	298	2
SHP02	0826	330	330	0
SHP02	0827	169	177	2
SHP02	0828	80	88	5
SHP02	0830	39	39	1
SHP02	0833	174	237	15
SHP02	0835	99	94	3
SHP02	0836	62	66	3
SHP02	0837	68	65	2
SHP02	0838	229	215	3
SHP02	0841	403	382	3
SHP02	0843	34	32	4
SHP02	0844	289	273	3
SHP02	0848	375	373	0
SHP02	1007	361	353	1
SHP02	1049	427	448	2
SHP02	1057	443	309	18
SHP02	1058	162	150	4
SHP02	1059	243	250	1
SHP02	1068	143	156	4
SHP02	1069	381	199	31
SHP02	1070	375	393	2
SHP02	1071	409	394	2
SHP02	1073	314	322	1
SHP02	1074	325	309	3
SHP02	1078	377	381	1
SHP02	1079	68	64	3
SHP02	1087	184	186	0
SHP02	1088	477	443	4
SHP02	1091	364	389	3
SHP02	1092	353	354	0
SHP02	1093R	249	256	2
SHP02	1095	235	249	3
SHP02	1096	374	373	0
SHP02	MW1	195	206	3

The charge balance value was greater than ten percent for five locations. Further review of the data for these locations did not indicate any errors in the data.

SAMPLE MANAGEMENT SYSTEM
General Data Validation Report

RIN: 11033666 Lab Code: GEN Validator: Gretchen Baer Validation Date: 5/24/2011

Project: Shiprock Monitoring Analysis Type: Metals General Chem Rad Organics

of Samples: 67 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.

There are 74 detection limit failures.

There were 3 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11033666Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Calcium	ICP/ES	04/06/2011							OK	103.0						107.7
Calcium	ICP/ES	04/06/2011	0.0000	1.0000	OK	OK	OK	OK	OK	103.0		1.0		0.8		
Calcium	ICP/ES	04/06/2011							OK	103.0		1.0	98.8	0.1		105.1
Calcium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	109.0		1.0	100.0	0.7		107.7
Calcium	ICP/ES	04/11/2011												1.6		
Calcium	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK				0.0	97.2			109.2
Magnesium	ICP/ES	04/06/2011	0.0000	1.0000	OK	OK	OK	OK	OK	104.0				3.7		111.0
Magnesium	ICP/ES	04/06/2011							OK	103.0			96.9	2.2		101.4
Magnesium	ICP/ES	04/06/2011							OK	104.0						104.2
Magnesium	ICP/ES	04/07/2011										1.0	96.8			
Magnesium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK				0.0		2.9		113.0
Magnesium	ICP/ES	04/07/2011										3.0		2.9		
Magnesium	ICP/ES	04/11/2011												1.8		
Magnesium	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK	OK	106.0		1.0	97.3			103.5
Manganese	ICP/ES	04/06/2011							OK	98.8				2.6		
Manganese	ICP/ES	04/06/2011							OK	98.7						
Manganese	ICP/ES	04/06/2011	0.0000	1.0000	OK	OK	OK	OK	OK	99.3			95.6			104.6

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11033666Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Manganese	ICP/ES	04/07/2011								96.9			94.9		105.4	
Manganese	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK				2.0				
Manganese	ICP/ES	04/07/2011						OK	105.0	98.7		0.0				
Manganese	ICP/ES	04/11/2011												0.2		
Manganese	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK				0.0	96.8		104.1	
Potassium	ICP/ES	04/06/2011												1.5		
Potassium	ICP/ES	04/06/2011												3.4		
Potassium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	107.0		0.0			59.3	
Potassium	ICP/ES	04/07/2011						OK	107.0			3.0	113.0			
Potassium	ICP/ES	04/07/2011						OK	104.0			0.0		0.4		
Potassium	ICP/ES	04/11/2011	0.0000	1.0000	OK	OK	OK	OK	OK	98.5	100.0	3.0	117.0	4.8	74.9	
Potassium	ICP/ES	04/25/2011	0.0000	1.0000	OK	OK	OK	OK					101.0		73.9	
Selenium	ICP/MS	04/09/2011	0.0000	1.0000	OK	OK	OK	OK	OK	98.1	111.0	1.0	119.0	24.8	108.7	
Selenium	ICP/MS	04/11/2011	0.0000	1.0000	OK	OK	OK	OK					120.0		101.7	
Selenium	ICP/MS	04/15/2011											117.0		104.4	
Selenium	ICP/MS	04/20/2011	0.0000	1.0000	OK	OK	OK	OK	OK	106.0	104.0	2.0	96.1	14.9	106.8	
Selenium	ICP/MS	04/22/2011	0.0000	1.0000	OK	OK	OK	OK	OK	90.0		7.0	108.0		108.5	

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11033666Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Selenium	ICP/MS	04/22/2011	0.0000	1.0000	OK	OK	OK	OK	OK	101.0	124.0		2.0	110.0		99.8
Selenium	ICP/MS	04/22/2011	0.0000	1.0000	OK	OK	OK	OK						100.0		99.8
Selenium	ICP/MS	04/25/2011	0.0000	1.0000	OK	OK	OK	OK						98.2	5.1	93.1
Sodium	ICP/ES	04/06/2011													1.1	
Sodium	ICP/ES	04/06/2011													3.3	
Sodium	ICP/ES	04/07/2011							OK	101.0			1.0			90.8
Sodium	ICP/ES	04/07/2011							OK	104.0			1.0	113.0		
Sodium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	104.0			0.0		0.2	
Sodium	ICP/ES	04/11/2011	0.0000	1.0000	OK	OK	OK	OK	OK	104.0			1.0	107.0	0.7	104.6
Sodium	ICP/ES	04/25/2011	0.0000	1.0000	OK	OK	OK	OK						104.0		102.2
Strontium	ICP/ES	04/06/2011	0.0000	1.0000	OK	OK	OK	OK	OK	98.5					1.6	100.5
Strontium	ICP/ES	04/06/2011							OK	97.8				103.0		101.2
Strontium	ICP/ES	04/06/2011													1.6	
Strontium	ICP/ES	04/06/2011							OK	98.9						
Strontium	ICP/ES	04/07/2011											1.0	105.0		108.7
Strontium	ICP/ES	04/07/2011	0.0000	1.0000	OK	OK	OK	OK	OK	107.0			1.0		0.7	
Strontium	ICP/ES	04/07/2011											0.0			

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 11033666Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Method Type	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
			Int.	R^2	ICV	CCV	ICB	CCB								
Strontium	ICP/ES	04/11/2011												2.1		
Strontium	ICP/ES	04/19/2011	0.0000	1.0000	OK	OK	OK	OK		104.0		0.0	104.0		100.4	
Uranium	ICP/MS	04/09/2011												17.7		
Uranium	ICP/MS	04/13/2011	0.0000	1.0000	OK	OK	OK	OK	OK	107.0	69.3		23.0	116.0	113.5	
Uranium	ICP/MS	04/15/2011	0.0000	1.0000	OK	OK	OK	OK	OK							
Uranium	ICP/MS	04/20/2011	0.0000	1.0000	OK	OK	OK	OK	OK	111.0	99.8		2.0	114.0	1.5	
Uranium	ICP/MS	04/22/2011	0.0000	1.0000	OK	OK	OK	OK					100.0	11.2	106.0	
Uranium	ICP/MS	04/22/2011	0.0000	1.0000	OK	OK	OK	OK					98.9		107.0	
Uranium	ICP/MS	04/25/2011	0.0000	1.0000	OK	OK	OK	OK	OK	106.0	94.5		3.0	99.6	5.3	
Uranium	ICP/MS	04/25/2011	0.0000	1.0000	OK	OK	OK	OK	OK	102.0	130.0		1.0	94.1	111.5	
Uranium	ICP/MS	04/25/2011	0.0000	1.0000	OK	OK	OK	OK					112.0		106.5	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 11033666 **Lab Code:** GEN **Date Due:** 4/26/2011
Matrix: Water **Site Code:** SHP **Date Completed:** 4/26/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Chloride	11/05/2010	0.111	0.9986	OK		OK							
Chloride	01/18/2011	0.165	0.9974	OK		OK							
Chloride	04/05/2011					OK	OK	OK	92.9				
Chloride	04/06/2011									108		0	
Chloride	04/07/2011					OK	OK	OK	92.2	96		0	
Chloride	04/08/2011									110		0	
Chloride	04/08/2011									105		1	
Chloride	04/09/2011					OK	OK	OK	96.1	115		0	
Chloride	04/11/2011					OK	OK	OK	98.6				
Chloride	04/15/2011									113		2	
Chloride	04/15/2011									108		0	
NH3 as N	04/01/2011	-0.018	1.0000	OK	OK	OK	OK	OK	95.3			5	
NH3 as N	04/01/2011									91.6	87.6	4	
NH3 as N	04/07/2011	-0.022	0.9998	OK	OK	OK	OK	OK	101	94.8	96.8	2	
NH3 as N	04/07/2011									97	104	2	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 11033666 **Lab Code:** GEN **Date Due:** 4/26/2011
Matrix: Water **Site Code:** SHP **Date Completed:** 4/26/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
NH3 as N	04/08/2011	0.009	0.9985	OK	OK	OK	OK	OK	101	95	97	1	
NH3 as N	04/08/2011			OK	OK	OK	OK	OK	98			2	
NH3 as N	04/08/2011											7	
NO2+NO3 as N	04/11/2011	-0.005	1.0000	OK	OK	OK	OK	OK	110	94.5		29	
NO2+NO3 as N	04/11/2011							OK	108	107		1	
NO2+NO3 as N	04/11/2011									108		0	
NO2+NO3 as N	04/11/2011									106		1	
NO2+NO3 as N	04/12/2011	0.005	0.9994	OK	OK	OK	OK	OK	101	102		3	
NO2+NO3 as N	04/12/2011							OK	99.7	102		1	
NO2+NO3 as N	04/12/2011									114		3	
Sulfate	11/05/2010	0.286	0.9996	OK		OK							
Sulfate	01/18/2011	0.347	0.9986	OK		OK							
Sulfate	04/05/2011				OK		OK	OK	96.3				
Sulfate	04/06/2011									103		0	
Sulfate	04/07/2011				OK		OK	OK	96	105		0	

SAMPLE MANAGEMENT SYSTEM

Wet Chemistry Data Validation Worksheet

RIN: 11033666

Lab Code: GENDate Due: 4/26/2011Matrix: WaterSite Code: SHPDate Completed: 4/26/2011

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	DUP RPD	Serial Dil. %R
		Int.	R^2	ICV	CCV	ICB	CCB						
Sulfate	04/08/2011								100		0		
Sulfate	04/08/2011										1		
Sulfate	04/09/2011				OK	OK	OK	97.6	104				
Sulfate	04/11/2011				OK	OK	OK	101					
Sulfate	04/12/2011								127		0		
Sulfate	04/14/2011										0		
Sulfate	04/15/2011								103		1		
Sulfate	04/15/2011								105				

Sampling Quality Control Assessment

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

Sampling Protocol

Sample results for monitoring wells that met the Category I, II, or III low-flow sampling criteria were qualified with an “F” flag in the database, indicating the wells were purged and sampled using the low-flow sampling method. All wells met the Category I criteria and were sampled with dedicated tubing using the low-flow purge procedure with the following exceptions:

- Floodplain wells 0734 and 0797 and terrace wells 0600, 0602, 0604, 0817, 0819, 0820, 0824, 0825, 0826, 0827, 1058, 1059, 1068, 1069, and 1074 were classified as Category II.
- Terrace wells 0812, 0814, 0816, 1007, 1073, and MW1 were classified as Category III.

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

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

Floodplain groundwater locations 1113 and 1135 had turbidity values greater than 10 nephelometric turbidity units (NTU). Samples from these locations were filtered. At floodplain location 0850 and terrace locations 0662, 0889, 1057, 1078, 1093R, 1095, 1215, 1218, 1219, 1220, and 1221, the turbidity was >10 NTU, but the samples inadvertently were not filtered. As identified in

Table 4, manganese results vary significantly between filtered and unfiltered samples; manganese results at these 12 locations are qualified with a “J” flag as estimated values.

Equipment Blank Assessment

Equipment blanks are prepared and analyzed to document contamination attributable the sample collection process. An equipment blank (field ID 2126, submitted under RIN 11033665) was collected after decontamination of the tubing reel used to collect some surface water samples. Calcium, chloride, and sulfate were detected in this blank. The associated sample concentrations for these analytes were greater than 5 times the blank concentration. Ammonia as N, potassium, and sodium were detected in the blank by the laboratory, but these analytes have been qualified during data validation with a “U” flag as not detected. The equipment blank results indicate adequate decontamination of the sampling equipment.

Field Duplicate Assessment

Field duplicate samples are collected and analyzed as an indication of overall precision of the measurement process. The precision observed includes both field and laboratory precision and has more variability than laboratory duplicates, which measure only laboratory performance. The relative percent difference for duplicate results that are greater than 5 times the PQL should be less than 20 percent. For results that are less than 5 times the PQL, the range should be no greater than the PQL. Duplicate samples were collected from SHP01 locations 0608, 0735, 1114, and 1115 and from SHP02 locations 0725, 0813, and 0835

Review of the data indicated that a laboratory error likely occurred, affecting the ammonia as N results for SHP01 locations 0735 and 0736. On June 2, 2011, the laboratory was requested to re-analyze the samples of these analytes. Revised deliverables were received June 14, 2011.

The following duplicate results did not meet the acceptance criteria for SHP01: sulfate at location 0735, chloride at locations 0608 and 1115, and nitrate + nitrite as N at location 0608. Associated results are qualified with a “J” flag as estimated values. The raw data were examined for carryover from a previous sample or for a dilution factor error. There were no analytical errors identified during the review of the data.

The following duplicate results did not meet the acceptance criteria for SHP02: manganese at location 0725, ammonia as N and selenium at location 0813, and potassium and sulfate at location 0835. The raw data were examined for carryover from a previous sample or for a dilution factor error. There were no analytical errors identified during the review of the data. For the metals results, the results for other elements in the sample were within 20 percent relative difference, which indicates that no dilution error was made. Associated results are qualified with a “J” flag as estimated values.

Certification

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

Laboratory Coordinator: Steve Donivan 8-2-2011
Steve Donivan Date

Data Validation Lead: Gretchen Baer 8/2/11
Gretchen Baer Date

Attachment 1
Assessment of Anomalous Data

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Potential Outliers Report

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Potential Outliers Report

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

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

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

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

Data identified as potentially anomalous generally are from locations where analyte concentrations are trending upward or downward.

Five laboratory results are listed on the Anomalous Data Review Checksheet for further review. There were no data errors indicated from the review of four of these potential outliers. Review of the data for the uranium outlier at location SHP02-0817, however, suggests that a laboratory error may have occurred, but the error cannot be conclusively proven. This point may be qualified after it is compared to additional sample data collected in future sampling events.

Potential anomalies in the field parameters were also examined for patterns of repeated high or low bias, which suggest a systematic error due to instrument malfunction. No such patterns were found and all data from this event are acceptable as qualified.

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Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data		Result	Qualifiers Lab Data		Result	Qualifiers Lab Data		N	N Below Detect	
SHP01	0501	N001	03/22/2011	Alkalinity, Total (as CaCO ₃)	69			141			86			11	0	No
SHP01	0610	N001	03/23/2011	Alkalinity, Total (as CaCO ₃)	281		F	762		L	289		FQ	27	0	No
SHP01	0610	N001	03/23/2011	Oxidation Reduction Potential	45.2		F	517.4			71.5		FQ	15	0	No
SHP01	0611	N001	03/23/2011	Temperature	9.9		F	23.64		F	10.59		F	5	0	No
SHP01	0622	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	344		F	1666			396		F	8	0	No
SHP01	0623	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	382		F	995			422			9	0	No
SHP01	0628	N001	03/24/2011	Oxidation Reduction Potential	-238.3		F	357.8			-80.3		F	16	0	No
SHP01	0630	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	720		F	518			124			25	0	No
SHP01	0630	N001	03/24/2011	Oxidation Reduction Potential	-133.6		F	467.7			-80.1		F	17	0	No
SHP01	0766	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	398		F	1424			559			8	0	No
SHP01	0766	N001	03/24/2011	Oxidation Reduction Potential	-110		F	206			-57.2		F	5	0	No
SHP01	0766	N001	03/24/2011	Turbidity	6.05		F	4.7		FQ	0.7			6	0	No
SHP01	0775	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	450		F	888			486			9	0	No
SHP01	0775	N001	03/24/2011	pH	7.11		F	7.67			7.13			8	0	No
SHP01	0783R	N001	03/24/2011	Specific Conductance	1630		F	1475		F	964		F	5	0	No
SHP01	0792	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	601		F	1530		F	632			8	0	No
SHP01	0792	N001	03/24/2011	Specific Conductance	11392		F	31078		F	11664			10	0	No
SHP01	0792	N001	03/24/2011	Turbidity	2.3		F	9.5		F	3.13			10	0	No
SHP01	0793	N001	03/24/2011	Oxidation Reduction Potential	222.1		F	154.2		F	57.4		F	6	0	No
SHP01	0798	N001	03/24/2011	Specific Conductance	9917		F	24290		F	11594		F	7	0	No
SHP01	0850	N001	03/23/2011	Alkalinity, Total (as CaCO ₃)	439		F	367		F	134		F	31	0	No
SHP01	0855	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	405		F	391			134		F	18	0	No
SHP01	0856	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	465		F	361		F	22		F	14	0	No
SHP01	0857	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	451		F	378			286		FQ	15	0	No

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data		Result	Qualifiers Lab Data		Result	Qualifiers Lab Data		N	N Below Detect	
SHP01	0857	N001	03/24/2011	Oxidation Reduction Potential	167.1	F		125.8	F		-55			11	0	No
SHP01	0857	N001	03/24/2011	pH	6.89	F		7.88			7.03	F		12	0	No
SHP01	0857	N001	03/24/2011	Specific Conductance	7718	F		6750	FQ		1347	F		12	0	No
SHP01	0857	N001	03/24/2011	Temperature	12.53	F		19.77	FQ		13.3			12	0	No
SHP01	0940	N001	03/25/2011	Alkalinity, Total (as CaCO ₃)	153			145			68			30	0	No
SHP01	0956	N001	03/22/2011	Alkalinity, Total (as CaCO ₃)	188			150			102			25	0	No
SHP01	0965	N001	03/22/2011	Alkalinity, Total (as CaCO ₃)	174			141			107			13	0	Yes
SHP01	1008	N001	03/24/2011	Specific Conductance	14197	F		25023	F		14850	F		13	0	No
SHP01	1009	N001	03/23/2011	Specific Conductance	3398	F		7490			3565			9	0	No
SHP01	1089	N001	03/24/2011	Specific Conductance	9231			19700	F		9358			15	0	No
SHP01	1105	N001	03/23/2011	Alkalinity, Total (as (as CaCO ₃))	599	F		840	F		680			5	0	No
SHP01	1105	N001	03/23/2011	Specific Conductance	11603	F		28902	F		14562	F		8	0	No
SHP01	1110	N001	03/23/2011	Specific Conductance	9988			26800			11307			32	0	No
SHP01	1113	0001	03/22/2011	Alkalinity, Total (as CaCO ₃)	268	F		630			355	F		5	0	No
SHP01	1113	N001	03/22/2011	Turbidity	13.2	F		9.01	F		1.82	F		6	0	No
SHP01	1114	N001	03/22/2011	Turbidity	1.3	F		9.93	F		1.75	F		8	0	No
SHP01	1117	N001	03/22/2011	Alkalinity, Total (as CaCO ₃)	82	F		164	F		118	F		10	0	Yes
SHP01	1117	N001	03/22/2011	Oxidation Reduction Potential	-33.8	F		252	F		-20.4	F		12	0	No
SHP01	1118	N001	03/23/2011	Alkalinity, Total (as CaCO ₃)	942			827			103			7	0	No

STATISTICAL TESTS:

The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test

Outliers are identified using Dixon's Test when there are 25 or fewer data points.

Outliers are identified using Rosner's Test when there are 26 or more data points.

See Data Quality Assessment: Statistical Methods for Practitioners, EPA QC/G-9S, February 2006.

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	0602	N001	03/25/2011	Specific Conductance	26087	FQ	25701		FQ	13000			26	0	No
SHP02	0602	N001	03/25/2011	Temperature	14	FQ	27.66		FQ	15.5			25	0	No
SHP02	0602	N001	03/25/2011	Turbidity	3.64	FQ	17.2			3.86	F		16	0	No
SHP02	0603	N001	03/23/2011	Oxidation Reduction Potential	441.4	F	305		F	151.4	F		18	0	Yes
SHP02	0662	N001	03/22/2011	Alkalinity, Total (as CaCO ₃)	187		119			5.3			32	0	Yes
SHP02	0725	N001	03/24/2011	Temperature	9.39	F	21.27		F	9.4			20	0	No
SHP02	0726	N001	03/24/2011	Temperature	15.2	F	18.43			15.3			20	0	No
SHP02	0727	N001	03/21/2011	Turbidity	1.08	F	778			3.13	F		17	0	No
SHP02	0728	N001	03/22/2011	Turbidity	1.18	F	95			1.2			18	0	No
SHP02	0730	N001	03/23/2011	pH	3.84	F	5.75		L	3.85	FQ		21	0	No
SHP02	0731	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	168	F	557			210			18	0	No
SHP02	0731	N001	03/24/2011	Turbidity	0.76	F	110		L	1.9	F		13	0	No
SHP02	0812	N001	03/24/2011	Oxidation Reduction Potential	97	FQ	260			151			16	0	No
SHP02	0812	N001	03/24/2011	Specific Conductance	34150	FQ	34113		FQ	19210	L		16	0	No
SHP02	0812	N001	03/24/2011	Temperature	10.87	FQ	17.7		FQ	13.6	L		15	0	No
SHP02	0814	N001	03/22/2011	Oxidation Reduction Potential	261.5	FQ	244		L	116	FQ		13	0	No
SHP02	0815	N001	03/22/2011	Oxidation Reduction Potential	274.3	F	247		F	121			14	0	Yes
SHP02	0815	N001	03/22/2011	Specific Conductance	23420	F	23050		F	1705			15	0	No
SHP02	0815	N001	03/22/2011	Temperature	15.46	F	20		F	16.2			13	0	No

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
SHP02	0815	N001	03/22/2011	Turbidity	1.91	F		32.5			2.51	F		13	0	No
SHP02	0816	N001	03/23/2011	Oxidation Reduction Potential	41	FQ		229	F		48	F		16	0	No
SHP02	0819	N001	03/25/2011	Temperature	15.27	FQ		24.81	F		15.4	FQ		13	0	No
SHP02	0820	N001	03/25/2011	Alkalinity, Total (as CaCO ₃)	650	FQ		640			428	FQ		6	0	No
SHP02	0820	N001	03/25/2011	Temperature	12.46	FQ		19.22	FQ		13.6			10	0	No
SHP02	0824	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	74	FQ		264	L		85	L		16	0	No
SHP02	0824	N001	03/24/2011	Turbidity	3.3	FQ		1000	> L		4.51	FQ		10	0	No
SHP02	0826	N001	03/25/2011	Temperature	14.23	FQ		25.6			14.36	FQ		15	0	No
SHP02	0828	N001	03/25/2011	Alkalinity, Total (as CaCO ₃)	694	F		690			180			13	0	No
SHP02	0828	N001	03/25/2011	Specific Conductance	6124	F		5856	F		1332			13	0	No
SHP02	0836	N001	03/22/2011	Alkalinity, Total (as CaCO ₃)	282	F		655			291	F		29	0	No
SHP02	0837	N001	03/23/2011	Turbidity	1.82	F		39.8			3.02	F		13	0	No
SHP02	0838	N001	03/22/2011	Specific Conductance	15682	F		11632	F		2070			27	0	Yes
SHP02	0841	N001	03/22/2011	Temperature	14.44	F		24.6	F		14.8	F		25	0	No
SHP02	0843	N001	03/23/2011	Alkalinity, Total (as CaCO ₃)	278	F		462			323	F		18	0	Yes
SHP02	0844	N001	03/22/2011	Specific Conductance	18723	F		18295	F		4130			14	0	No
SHP02	0844	N001	03/22/2011	Turbidity	2.24	F		357	FQ		4.1	F		13	0	No
SHP02	0848	N001	03/23/2011	Specific Conductance	27465	F		27112	F		6050			13	0	No
SHP02	0848	N001	03/23/2011	Temperature	14.59	F		18.1	F		15.5			12	0	No
SHP02	0949	N001	03/22/2011	pH	7.53			7.93			7.58			5	0	No

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data		Result	Qualifiers Lab Data		Result	Qualifiers Lab Data		N	N Below Detect	
SHP02	0949	N001	03/22/2011	Temperature	9.69			19.8			12			5	0	No
SHP02	0949	N001	03/22/2011	Turbidity	1.01			68.9			13.3			5	0	No
SHP02	1007	N001	03/24/2011	Oxidation Reduction Potential	387	FQ		256	FQ		19	FQ		9	0	No
SHP02	1007	N001	03/24/2011	Specific Conductance	21950	FQ		21240	FQ		12620	L		10	0	No
SHP02	1049	N001	03/24/2011	Alkalinity, Total (as CaCO ₃)	664	F		659	F		521			8	0	No
SHP02	1049	N001	03/24/2011	Temperature	11.94	F		24.7			12.2			7	0	No
SHP02	1057	N001	03/23/2011	Oxidation Reduction Potential	299.9			281.1	F		158	F		11	0	No
SHP02	1057	N001	03/23/2011	pH	6.5			7.07	F		6.53	F		11	0	No
SHP02	1057	N001	03/23/2011	Temperature	10.05			19.2	F		12.77	F		11	0	No
SHP02	1058	N001	03/24/2011	Temperature	13.58	FQ		19.4	FQ		14.3	FQ		8	0	No
SHP02	1059	N001	03/24/2011	Oxidation Reduction Potential	4.3	FQ		261	FQ		143.6	FQ		10	0	Yes
SHP02	1068	N001	03/22/2011	Temperature	9.53	FQ		26.97	FQ		13.1	FQ		6	0	No
SHP02	1070	N001	03/23/2011	Alkalinity, Total (as CaCO ₃)	823			810			648			10	0	No
SHP02	1071	N001	03/22/2011	Alkalinity, Total (as CaCO ₃)	1124			680			153			13	0	Yes
SHP02	1073	N001	03/23/2011	Temperature	14.72	FQ		18.5			15.7	FQ		7	0	No
SHP02	1074	N001	03/24/2011	Oxidation Reduction Potential	411	FQ		284	FQ		50	FQ		5	0	No
SHP02	1074	N001	03/24/2011	Temperature	14.74	FQ		23.2	FQ		14.8	FQ		6	0	No
SHP02	1078	N001	03/22/2011	Specific Conductance	13341			26041			16650			15	0	No
SHP02	1078	N001	03/22/2011	Turbidity	14.4			9.44			0.43			15	0	No
SHP02	1079	N001	03/23/2011	Temperature	12.78	F		19.7	F		13.59	F		17	0	No

Data Validation Outliers Report - Field Parameters Only

Comparison: All Historical Data

Laboratory: Field Measurements

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers		Result	Qualifiers		Result	Qualifiers		N	N Below Detect	
						Lab	Data		Lab	Data		Lab	Data			
SHP02	1087	N001	03/22/2011	Temperature	9.9			27.2			10.37			16	0	No
SHP02	1087	N001	03/22/2011	Turbidity	7.4			7.14			1.02			12	0	No
SHP02	1088	N001	03/22/2011	Turbidity	606			99.89			2.32			12	0	No
SHP02	1092	N001	03/23/2011	Alkalinity, Total (as CaCO ₃)	459			960			530			12	0	No
SHP02	1093R	N001	03/23/2011	pH	6.89			6.73			5.83			6	0	No
SHP02	1093R	N001	03/23/2011	Specific Conductance	19328			26934			24046			6	0	Yes
SHP02	1093R	N001	03/23/2011	Turbidity	12			9.34			2.9			5	0	No
SHP02	1095	N001	03/23/2011	Temperature	12.97			20.4			13.09			9	0	No
SHP02	1095	N001	03/23/2011	Turbidity	31			5.3			1.79			8	0	Yes
SHP02	1096	N001	03/23/2011	Alkalinity, Total (as CaCO ₃)	830			694			558			6	0	No
SHP02	1215	N001	03/23/2011	Oxidation Reduction Potential	313.3			246			17			5	0	No
SHP02	1215	N001	03/23/2011	Turbidity	18			14.8			1.7			5	0	No
SHP02	MW1	N001	03/24/2011	Oxidation Reduction Potential	133		FQ	127		FQ	16		FQ	7	0	No
SHP02	MW1	N001	03/24/2011	pH	6.89		FQ	7.68		FQ	6.94		FQ	8	0	No

STATISTICAL TESTS:

The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test

Outliers are identified using Dixon's Test when there are 25 or fewer data points.

Outliers are identified using Rosner's Test when there are 26 or more data points.

See *Data Quality Assessment: Statistical Methods for Practitioners*, EPA QC/G-9S, February 2006.

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP01	0608	N002	03/22/2011	Ammonia Total as N	70.3		F	420		JF	99		F	19	0	No
SHP01	0608	N001	03/22/2011	Ammonia Total as N	68		F	420		JF	99		F	19	0	No
SHP01	0608	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	35.7		JF	650		F	95		F	14	0	No
SHP01	0608	N002	03/22/2011	Nitrate + Nitrite as Nitrogen	83		JF	650		F	95		F	14	0	No
SHP01	0608	N002	03/22/2011	Potassium	51.3		F	200	E		66		F	46	0	No
SHP01	0608	N001	03/22/2011	Potassium	51.8		F	200	E		66		F	46	0	No
SHP01	0608	N001	03/22/2011	Selenium	0.00225	B	F	0.25			0.0038		F	46	6	No
SHP01	0608	N002	03/22/2011	Selenium	0.0015	UN	F	0.25			0.0038		F	46	6	No
SHP01	0608	N002	03/22/2011	Uranium	0.676	E	F	3.73			0.69		F	51	0	No
SHP01	0610	N001	03/23/2011	Ammonia Total as N	0.367		F	15		FQ	0.76		F	6	0	No
SHP01	0610	N001	03/23/2011	Potassium	73.3		F	180		FQ	83		F	23	0	No
SHP01	0610	N001	03/23/2011	Selenium	0.239		F	0.16		F	0.005	U		23	3	No
SHP01	0611	N001	03/23/2011	Potassium	15.1		F	56.4		J	18		FJ	5	0	No
SHP01	0619	N001	03/24/2011	Potassium	20.2		F	148			20.7			50	0	No
SHP01	0623	N001	03/24/2011	Potassium	12		JF	105			12.5			10	0	No
SHP01	0625	N001	03/24/2011	Potassium	9.69		JF	100			13		F	6	0	No
SHP01	0625	N001	03/24/2011	Selenium	0.0015	U	F	0.764			0.0018		F	6	0	No
SHP01	0625	N001	03/24/2011	Sulfate	2040		F	12300			2600		F	7	0	No
SHP01	0626	N001	03/24/2011	Potassium	6.72		JF	43			10		F	32	0	No
SHP01	0626	N001	03/24/2011	Sulfate	2360		F	9100			2540			34	0	No
SHP01	0628	N001	03/24/2011	Potassium	5.73		JF	27			7.62			24	0	No
SHP01	0630	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	12.4		F	11.3			0.019		F	8	0	No
SHP01	0630	N001	03/24/2011	Strontium	24.5		F	20.5			5			23	0	No
SHP01	0735	N001	03/22/2011	Calcium	554		F	550		F	46		F	37	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP01	0735	N001	03/22/2011	Sulfate	17200		JF	15000		F	707		F	37	0	Yes
SHP01	0736	N001	03/24/2011	Ammonia Total as N	0.0569	HJh	JF	1	U		0.1	U	F	12	12	No
SHP01	0736	N001	03/24/2011	Chloride	84.2		F	663			87		F	26	0	No
SHP01	0736	N001	03/24/2011	Magnesium	76.1		F	1670			110		F	25	0	No
SHP01	0736	N001	03/24/2011	Potassium	19.5		F	72		F	33.5		F	24	0	No
SHP01	0736	N001	03/24/2011	Strontium	5		F	11.1			5.7		F	26	0	No
SHP01	0736	N001	03/24/2011	Uranium	0.0479		F	1.6			0.071		F	29	0	No
SHP01	0766	N001	03/24/2011	Calcium	321		F	461			340		F	5	0	No
SHP01	0766	N001	03/24/2011	Magnesium	276		F	3110			390		F	5	0	No
SHP01	0766	N001	03/24/2011	Manganese	0.117		F	4.52			0.15		FQ	5	0	No
SHP01	0766	N001	03/24/2011	Potassium	36	E	F	171			54		F	5	0	No
SHP01	0766	N001	03/24/2011	Sulfate	5290		F	24600			5900		F	6	0	No
SHP01	0768	N001	03/24/2011	Strontium	14.8		F	11.4			6.9		F	5	0	No
SHP01	0773	N001	03/23/2011	Strontium	2.74		F	6.03			3.4		F	5	0	No
SHP01	0775	N001	03/24/2011	Chloride	80.6		F	642		L	82.6			7	0	No
SHP01	0775	N001	03/24/2011	Uranium	0.205	E	F	2.5		L	0.219	E		8	0	No
SHP01	0779	N001	03/24/2011	Strontium	8.44		F	7.96			6		F	5	0	No
SHP01	0783R	N001	03/24/2011	Selenium	0.0015	U	F	0.0012	E	F	0.00036		F	5	0	No
SHP01	0783R	N001	03/24/2011	Sodium	176		F	140			100		F	5	0	No
SHP01	0783R	N001	03/24/2011	Sulfate	615		F	610			340		F	5	0	No
SHP01	0783R	N001	03/24/2011	Uranium	0.0104	E	F	0.01		F	0.007		F	5	0	No
SHP01	0792	N001	03/24/2011	Magnesium	367		F	2500			391			10	0	No
SHP01	0792	N001	03/24/2011	Potassium	43.8	E	F	250			44.4			10	0	No
SHP01	0792	N001	03/24/2011	Strontium	8.29		F	21			9.4		F	7	0	No
SHP01	0792	N001	03/24/2011	Sulfate	6170		F	27000			6420			10	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP01	0793	N001	03/24/2011	Potassium	31.3	E	F	96		F	33		F	7	0	No
SHP01	0793	N001	03/24/2011	Uranium	0.648	E	F	1.7		F	0.83		F	7	0	No
SHP01	0797	N001	03/23/2011	Sodium	2160		FQ	1500		FQ	240		QF	20	0	No
SHP01	0798	N001	03/24/2011	Calcium	387		F	470		F	410		F	7	0	No
SHP01	0798	N001	03/24/2011	Chloride	160		F	908			240		F	7	0	No
SHP01	0798	N001	03/24/2011	Magnesium	311		F	2130			610		F	7	0	No
SHP01	0798	N001	03/24/2011	Manganese	1.54		F	5.81			2.5		F	6	0	No
SHP01	0798	N001	03/24/2011	Strontium	5.66		F	15		F	7.2		F	6	0	No
SHP01	0798	N001	03/24/2011	Sulfate	5620		F	18000		F	7300		F	7	0	No
SHP01	0798	N001	03/24/2011	Uranium	0.315	E	F	2.78			0.78		F	7	0	No
SHP01	0850	N001	03/23/2011	Manganese	0.0287		JF	5.18		F	0.0689		F	26	0	No
SHP01	0854	N001	03/25/2011	Calcium	346		F	490		F	350			12	0	No
SHP01	0855	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	1.11		F	0.51		F	0.01	U	F	9	3	Yes
SHP01	0855	N001	03/24/2011	Strontium	11.7		F	11		F	6.6		F	13	0	No
SHP01	0856	N001	03/24/2011	Strontium	7.58		F	6.8		F	3.84			12	0	No
SHP01	0857	N001	03/24/2011	Ammonia Total as N	14.5		F	11		FQ	3.8		F	6	0	No
SHP01	0857	N001	03/24/2011	Calcium	736		F	499			75		F	11	0	No
SHP01	0857	N001	03/24/2011	Chloride	221		F	110		F	17		F	11	0	Yes
SHP01	0857	N001	03/24/2011	Magnesium	410		F	309			51		F	11	0	No
SHP01	0857	N001	03/24/2011	Manganese	6.27		F	5.06			0.67		F	11	0	No
SHP01	0857	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	33.6		F	1.9		F	0.01	U	F	5	2	Yes
SHP01	0857	N001	03/24/2011	Sodium	780		F	586			140		F	11	0	No
SHP01	0857	N001	03/24/2011	Strontium	8.39		F	5.75			0.92		F	10	0	No
SHP01	0857	N001	03/24/2011	Sulfate	4500		F	3260			470		F	12	0	No
SHP01	0857	N001	03/24/2011	Uranium	0.769	E	F	0.311			0.076		FQ	12	0	Yes

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP01	0897	0001	03/22/2011	Chloride	39.7			27.3			3.97			30	0	Yes
SHP01	0897	0001	03/22/2011	Sulfate	713			279			45.2			30	0	No
SHP01	0899	0001	03/24/2011	Potassium	2.11	B		2.9			2.3			6	0	No
SHP01	0965	0001	03/22/2011	Potassium	2.12	B		3.9		J	2.4			21	0	No
SHP01	1008	N001	03/24/2011	Ammonia Total as N	8.5		F	21		F	12		F	10	0	No
SHP01	1008	N001	03/24/2011	Chloride	250		F	972		F	500		F	13	0	No
SHP01	1008	N001	03/24/2011	Magnesium	915		F	2760			1200		F	13	0	No
SHP01	1008	N001	03/24/2011	Manganese	4.04		F	12.3			5.5		F	13	0	No
SHP01	1008	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	18.4		F	170		F	43		F	9	0	No
SHP01	1008	N001	03/24/2011	Potassium	59		F	160		F	76		JF	13	0	No
SHP01	1008	N001	03/24/2011	Strontium	8.39		F	13.7			8.4		F	12	0	No
SHP01	1008	N001	03/24/2011	Sulfate	8070		F	19100			11000		F	14	0	No
SHP01	1008	N001	03/24/2011	Uranium	1.28		F	3.32			1.3		F	14	0	No
SHP01	1009	N001	03/23/2011	Calcium	336		F	499			337			11	0	No
SHP01	1009	N001	03/23/2011	Chloride	26.8		F	158			30.6			11	0	No
SHP01	1009	N001	03/23/2011	Potassium	19.7		F	51		F	21.6			11	0	No
SHP01	1009	N001	03/23/2011	Sodium	261		F	754			264			11	0	No
SHP01	1009	N001	03/23/2011	Strontium	3.58		F	6.88			4.3		F	8	0	No
SHP01	1009	N001	03/23/2011	Sulfate	1830		F	4690			1910			12	0	No
SHP01	1089	N001	03/24/2011	Ammonia Total as N	0.176			6			0.44			16	2	No
SHP01	1089	N001	03/24/2011	Chloride	132			690		F	150			19	0	No
SHP01	1089	N001	03/24/2011	Magnesium	305			1700			410			12	0	No
SHP01	1089	N001	03/24/2011	Manganese	0.0537			2.6			0.77			11	0	No
SHP01	1089	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	3.75			83			5.4			15	0	No
SHP01	1089	N001	03/24/2011	Potassium	38.3			150			51			12	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP01	1089	N001	03/24/2011	Sulfate	4760			15000		F	5700			23	0	No
SHP01	1089	N001	03/24/2011	Uranium	0.232			2.1			0.48			22	0	No
SHP01	1104	N001	03/24/2011	Ammonia Total as N	0.124			3.4			0.74			9	0	No
SHP01	1104	N001	03/24/2011	Chloride	204			920			250		F	9	0	No
SHP01	1104	N001	03/24/2011	Magnesium	583			1600			660			9	0	No
SHP01	1104	N001	03/24/2011	Manganese	0.04		U	3.2			1.2			8	0	No
SHP01	1104	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	16.3			180		F	28			10	0	No
SHP01	1104	N001	03/24/2011	Potassium	46.9			140			62			9	0	No
SHP01	1104	N001	03/24/2011	Uranium	0.595			2.6		F	0.93			11	0	No
SHP01	1105	N001	03/23/2011	Chloride	237		F	1100		F	340		F	9	0	No
SHP01	1105	N001	03/23/2011	Magnesium	1080		F	3600		F	1400		F	9	0	No
SHP01	1105	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	60		F	1100		F	220		F	8	0	No
SHP01	1105	N001	03/23/2011	Potassium	59.4		F	200		F	100		F	9	0	No
SHP01	1105	N001	03/23/2011	Selenium	0.31		F	0.28		F	0.047		F	8	0	No
SHP01	1105	N001	03/23/2011	Sodium	1410		F	4400		F	1700		FJ	9	0	No
SHP01	1105	N001	03/23/2011	Strontium	8.08		F	16		F	9.7		F	8	0	No
SHP01	1105	N001	03/23/2011	Sulfate	8060		F	21000		F	9600		F	9	0	No
SHP01	1105	N001	03/23/2011	Uranium	1.57		F	4.3		F	1.6		F	9	0	No
SHP01	1109	N001	03/23/2011	Magnesium	85.6			1200			92			70	0	No
SHP01	1109	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	27.3			130			33			9	0	No
SHP01	1109	N001	03/23/2011	Potassium	5.9			80.5			9			70	0	No
SHP01	1109	N001	03/23/2011	Uranium	0.0832			0.9086			0.1			70	0	No
SHP01	1110	N001	03/23/2011	Ammonia Total as N	0.0774		J U	51			2.5			47	0	No
SHP01	1110	N001	03/23/2011	Chloride	228			590			240			10	0	No
SHP01	1110	N001	03/23/2011	Magnesium	532			3700			830			47	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033665

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP01	1110	N001	03/23/2011	Manganese	0.04	U		3			1			9	0	No
SHP01	1110	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	24.9			390			63			10	0	No
SHP01	1110	N001	03/23/2011	Potassium	33.1			1110			67			47	0	No
SHP01	1110	N001	03/23/2011	Sulfate	4790			19440			7000			48	0	No
SHP01	1110	N001	03/23/2011	Uranium	0.51			2.8324			0.6895			48	0	No
SHP01	1111	N001	03/23/2011	Potassium	49.2		F	97		F	50			10	0	No
SHP01	1111	N001	03/23/2011	Strontium	14.2		F	12		F	8.1		F	7	0	No
SHP01	1112	N001	03/23/2011	Ammonia Total as N	22.9		F	91		F	26		F	11	0	No
SHP01	1112	N001	03/23/2011	Selenium	3.07		F	2.39	N		0.33		F	9	0	No
SHP01	1113	0001	03/22/2011	Ammonia Total as N	0.121		F	98		F	0.15		F	8	0	No
SHP01	1113	0001	03/22/2011	Sulfate	4080		F	13595			4100		F	8	0	No
SHP01	1113	0001	03/22/2011	Uranium	0.762		F	1.7962			0.78		F	8	0	No
SHP01	1114	N002	03/22/2011	Manganese	3.24		F	2.4		F	1		F	7	0	No
SHP01	1114	N001	03/22/2011	Manganese	3.09		F	2.4		F	1		F	7	0	No
SHP01	1114	N001	03/22/2011	Selenium	0.0149		F	0.012		F	0.0042		F	7	0	No
SHP01	1114	N002	03/22/2011	Selenium	0.0164	N	F	0.012		F	0.0042		F	7	0	No
SHP01	1114	N002	03/22/2011	Strontium	4.67		F	4.1		F	1.7		F	7	0	No
SHP01	1114	N001	03/22/2011	Strontium	4.71		F	4.1		F	1.7		F	7	0	No
SHP01	1115	N002	03/22/2011	Chloride	393		JF	304			56		F	16	0	No
SHP01	1115	N002	03/22/2011	Strontium	7.8		F	5.1		F	2		F	8	0	No
SHP01	1115	N001	03/22/2011	Strontium	7.36		F	5.1		F	2		F	8	0	No
SHP01	1118	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	92.5			71			26			10	0	Yes
SHP01	1118	N001	03/23/2011	Selenium	0.313	N		0.16			0.061			9	0	Yes
SHP01	1118	N001	03/23/2011	Sodium	1730			1500			710			10	0	No
SHP01	1118	N001	03/23/2011	Strontium	9.86			9.5			8.2			9	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

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Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP01	1118	N001	03/23/2011	Uranium	0.717			0.67			0.28			11	0	No
SHP01	1132	N001	03/22/2011	Manganese	0.268		F	0.45		F	0.29		F	5	0	No
SHP01	1132	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	0.67		F	0.16		F	0.01	U	F	5	3	No
SHP01	1132	N001	03/22/2011	Selenium	0.0015	UN	F	0.00092	E	F	0.00035		F	5	0	No
SHP01	1132	N001	03/22/2011	Uranium	0.0221		F	0.022			0.011		F	6	0	No
SHP01	1135	0001	03/24/2011	Ammonia Total as N	0.0642	J	UF	0.1	U	F	0.0689	J		5	3	No
SHP01	1135	0001	03/24/2011	Calcium	338		F	430		F	364			5	0	No
SHP01	1135	0001	03/24/2011	Chloride	90.9		F	130		F	91.4		F	5	0	No
SHP01	1135	0001	03/24/2011	Magnesium	206		F	400		F	231			5	0	No
SHP01	1135	0001	03/24/2011	Manganese	2.05		F	3.2		F	2.29			5	0	No
SHP01	1203	0001	03/22/2011	Potassium	2.27	B		12		J	2.3			20	0	No
SHP01	1205	0001	03/23/2011	Potassium	2.16	B		23		J	2.18			28	0	No

STATISTICAL TESTS:

The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test

Outliers are identified using Dixon's Test when there are 25 or fewer data points.

Outliers are identified using Rosner's Test when there are 26 or more data points.

See *Data Quality Assessment: Statistical Methods for Practitioners*, EPA QC/G-9S, February 2006.

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	0600	N001	03/24/2011	Ammonia Total as N	10.8		FQ	130		FQ	26		FQ	5	0	No
SHP02	0600	N001	03/24/2011	Chloride	2410		FQ	1500		F	79			24	0	No
SHP02	0600	N001	03/24/2011	Magnesium	270		FQ	858			280		FQ	24	0	No
SHP02	0600	N001	03/24/2011	Potassium	34		JFQ	103			45			24	0	No
SHP02	0600	N001	03/24/2011	Sodium	5690		FQ	4500		FQ	2450		L	24	0	No
SHP02	0600	N001	03/24/2011	Sulfate	18700		FQ	11100			8300		L	25	0	No
SHP02	0602	N001	03/25/2011	Nitrate + Nitrite as Nitrogen	5.17		FQ	28		F	12			6	0	No
SHP02	0602	N001	03/25/2011	Potassium	138		FQ	266			161			23	0	Yes
SHP02	0602	N001	03/25/2011	Selenium	0.0015	UE	FQ	0.796			0.0021	B		26	6	No
SHP02	0602	N001	03/25/2011	Sodium	4060		FQ	3400		F	2120			23	0	Yes
SHP02	0602	N001	03/25/2011	Uranium	0.451	*EN	FQ	1.37			0.53		FQ	28	0	No
SHP02	0603	N001	03/23/2011	Calcium	1040		F	990		F	367			18	0	No
SHP02	0603	N001	03/23/2011	Strontium	4.99		F	4.7		F	2.33		F	18	0	No
SHP02	0604	0001	03/25/2011	Chloride	1920		FQ	3400		L	2300		FQ	10	0	No
SHP02	0604	0001	03/25/2011	Magnesium	1890		FQ	1700		FQ	972		L	9	0	No
SHP02	0604	0001	03/25/2011	Selenium	0.937	E	FQ	0.65		FQ	0.0001	U	L	10	1	Yes
SHP02	0604	0001	03/25/2011	Uranium	0.0977	*EN	FQ	0.096		FQ	0.00016	B	UL	14	1	No
SHP02	0648	N001	03/23/2011	Potassium	6.75		J	13	N	J	7.34			10	0	No
SHP02	0648	N001	03/23/2011	Sulfate	1810			2340			1870			12	0	No
SHP02	0662	N001	03/22/2011	Ammonia Total as N	0.549			0.1	U	J	0.1	U	J	16	16	No
SHP02	0662	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	5.85			0.64			0.099			16	0	Yes
SHP02	0725	N001	03/24/2011	Ammonia Total as N	0.059	J	JF	0.1	U	F	0.1	U	F	7	7	No
SHP02	0725	N002	03/24/2011	Ammonia Total as N	0.078	J	JF	0.1	U	F	0.1	U	F	7	7	No
SHP02	0725	N002	03/24/2011	Nitrate + Nitrite as Nitrogen	61.5		F	8.5		F	0.37		F	7	0	Yes

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033666

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Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	0725	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	70.3		F	8.5		F	0.37		F	7	0	Yes
SHP02	0725	N002	03/24/2011	Potassium	8.72		JF	19		FJ	9.7		FQ	18	0	No
SHP02	0725	N001	03/24/2011	Potassium	8.24		JF	19		FJ	9.7		FQ	18	0	No
SHP02	0725	N001	03/24/2011	Strontium	15		F	14			6.91			21	0	Yes
SHP02	0725	N002	03/24/2011	Strontium	15.2		F	14			6.91			21	0	Yes
SHP02	0727	N001	03/21/2011	Sulfate	10500		F	18100			10900			21	0	No
SHP02	0728	N001	03/22/2011	Selenium	0.0015	UE	JF	0.084	+		0.0016		F	24	0	No
SHP02	0730	N001	03/23/2011	Ammonia Total as N	50.5		F	120			68		FQ	10	0	No
SHP02	0730	N001	03/23/2011	Calcium	659		F	650		FQ	477		L	15	0	No
SHP02	0730	N001	03/23/2011	Chloride	11.9		F	20.9		L	12		F	16	0	No
SHP02	0730	N001	03/23/2011	Manganese	24.9		F	22.6		L	18		F	16	0	No
SHP02	0730	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	270		F	190		FQ	98		JF	9	0	Yes
SHP02	0730	N001	03/23/2011	Potassium	16.8		F	28.9	E	JL	17		FQ	15	0	No
SHP02	0730	N001	03/23/2011	Strontium	3.47		F	3.1		FQ	2.5		F	15	0	No
SHP02	0730	N001	03/23/2011	Uranium	0.00766	*EN	JF	0.0072		FQ	0.00056		F	19	0	No
SHP02	0731	N001	03/24/2011	Ammonia Total as N	10.9		F	46		F	18		F	7	0	No
SHP02	0731	N001	03/24/2011	Calcium	413		F	687			424			16	0	No
SHP02	0731	N001	03/24/2011	Chloride	45.7		F	627			140		F	15	0	No
SHP02	0731	N001	03/24/2011	Magnesium	363		F	856			400		F	14	0	No
SHP02	0731	N001	03/24/2011	Manganese	0.0206		F	0.47			0.0367		L	16	0	No
SHP02	0731	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	44.7		F	170		F	120	N	FJ	7	0	Yes
SHP02	0731	N001	03/24/2011	Potassium	36.9		F	78.9			40		F	14	0	No
SHP02	0731	N001	03/24/2011	Strontium	6.32		F	12.2			6.7		F	16	0	No
SHP02	0731	N001	03/24/2011	Uranium	0.0175	*EN	F	0.0568			0.018		F	19	0	No
SHP02	0812	0001	03/24/2011	Calcium	496		FQ	495		L	440		FQ	13	0	No

Data Validation Outliers Report - No Field Parameters

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Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	0812	0001	03/24/2011	Chloride	2150		FQ	2700		FQ	2160		L	14	0	No
SHP02	0812	0001	03/24/2011	Potassium	58.3		FQ	100		FQ	58.5		L	13	0	No
SHP02	0812	0001	03/24/2011	Strontium	15.8		FQ	15.2			13		FQ	13	0	No
SHP02	0813	N001	03/23/2011	Ammonia Total as N	42.5		JF	89		F	56		F	8	0	No
SHP02	0813	N002	03/23/2011	Ammonia Total as N	18.8		JF	89		F	56		F	8	0	Yes
SHP02	0813	N002	03/23/2011	Calcium	669		F	660		F	506			16	0	No
SHP02	0813	N002	03/23/2011	Nitrate + Nitrite as Nitrogen	2800		F	2600		F	2300		F	8	0	No
SHP02	0813	N001	03/23/2011	Selenium	0.0146	E	JF	0.1		F	0.0334			16	0	No
SHP02	0814	0001	03/22/2011	Chloride	946		FQ	1100		FQ	950		L	10	0	No
SHP02	0814	0001	03/22/2011	Magnesium	2070		FQ	2530		L	2100		FQ	10	0	No
SHP02	0814	0001	03/22/2011	Nitrate + Nitrite as Nitrogen	885		JFQ	980		FQ	910		FQ	5	0	No
SHP02	0814	0001	03/22/2011	Sodium	3880		FQ	3450			2900		FQ	10	0	Yes
SHP02	0815	N001	03/22/2011	Ammonia Total as N	0.575		F	0.12		F	0.1	U	F	8	7	No
SHP02	0815	N001	03/22/2011	Chloride	498		F	866			580		F	13	0	No
SHP02	0815	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	888		F	800		F	560		FQ	8	0	No
SHP02	0815	N001	03/22/2011	Selenium	0.018	E	F	0.633		L	0.032		F	14	0	No
SHP02	0815	N001	03/22/2011	Strontium	13.4		F	13.2			6.65			13	0	No
SHP02	0816	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	16.1		FQ	61		F	24		FQ	6	0	No
SHP02	0816	N001	03/23/2011	Potassium	10.8		JFQ	18		F	11		FQ	13	0	No
SHP02	0817	N001	03/25/2011	Manganese	2.31		FQ	2.3		F	1.8		F	20	0	No
SHP02	0817	N001	03/25/2011	Uranium	30.4	*EN	FQ	10.3		F	1.27		L	20	0	Yes
SHP02	0818	N001	03/23/2011	Ammonia Total as N	55.5			240			59			16	0	No
SHP02	0818	N001	03/23/2011	Potassium	67.7			150			90			15	0	No
SHP02	0818	N001	03/23/2011	Sulfate	16200			14000		F	7375			29	0	No
SHP02	0819	N001	03/25/2011	Magnesium	1250		FQ	1770		L	1300		FQ	12	0	No

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					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	0820	N001	03/25/2011	Ammonia Total as N	4.73		FQ	3.5		FQ	1		U	5	1	No
SHP02	0820	N001	03/25/2011	Manganese	1.6		FQ	1.3		FQ	0.161		L	8	0	No
SHP02	0820	N001	03/25/2011	Potassium	18.6		FQ	63.2	E	JL	22			9	0	No
SHP02	0820	N001	03/25/2011	Selenium	0.0375	UE	JFQ	0.0212		L	0.00048		B FQ	8	0	No
SHP02	0826	N001	03/25/2011	Ammonia Total as N	57		FQ	130		F	65		FQJ	8	0	No
SHP02	0826	N001	03/25/2011	Calcium	466		FQ	457		F	400		F	15	0	No
SHP02	0826	N001	03/25/2011	Chloride	539		FQ	792			540		F	16	0	No
SHP02	0826	N001	03/25/2011	Manganese	1.88		FQ	2.9		F	2.3		FQ	15	0	Yes
SHP02	0826	N001	03/25/2011	Nitrate + Nitrite as Nitrogen	125		FQ	63		F	40		F	7	0	Yes
SHP02	0826	N001	03/25/2011	Strontium	13.3		FQ	13		F	11		F	15	0	No
SHP02	0827	N001	03/25/2011	Manganese	0.14		FQ	1.63			0.27		FQ	15	0	No
SHP02	0827	N001	03/25/2011	Nitrate + Nitrite as Nitrogen	266		FQ	29		FQ	13		FQ	6	0	Yes
SHP02	0828	N001	03/25/2011	Calcium	487		F	480		F	196		F	11	0	No
SHP02	0828	N001	03/25/2011	Sodium	731		F	693			280		F	11	0	No
SHP02	0828	N001	03/25/2011	Uranium	0.79	*EN	F	0.65		F	0.21		F	13	0	No
SHP02	0833	N001	03/22/2011	Ammonia Total as N	0.099	J	F	0.1	U	F	0.1	U	F	6	6	No
SHP02	0833	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	1260		F	510		FQ	360		F	6	0	Yes
SHP02	0835	N002	03/22/2011	Sulfate	4690		JF	4200		F	882			28	0	No
SHP02	0836	N001	03/22/2011	Manganese	0.322		F	7.2		F	0.78		FJ	27	0	No
SHP02	0836	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	29		F	20		F	3.6		F	14	0	No
SHP02	0837	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	9.12		F	8.1		F	3.7		F	7	0	No
SHP02	0837	N001	03/23/2011	Selenium	0.363	E	F	0.32	E	FJ	0.0099			15	0	No
SHP02	0837	N001	03/23/2011	Sodium	421		F	350		F	143			14	0	No
SHP02	0837	N001	03/23/2011	Strontium	6.92		F	6.3		F	3.69			14	0	No
SHP02	0837	N001	03/23/2011	Uranium	0.0597	*EN	F	0.056		F	0.03			16	0	No

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Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	0838	N001	03/22/2011	Chloride	610		F	540		F	12.8			25	0	No
SHP02	0838	N001	03/22/2011	Magnesium	1230		F	670		F	87.6			25	0	No
SHP02	0838	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	587		F	440		F	32		F	15	0	No
SHP02	0838	N001	03/22/2011	Selenium	4.71	E	F	0.93		F	0.0272			27	0	No
SHP02	0838	N001	03/22/2011	Sodium	2220		F	1300		F	91.9			25	0	No
SHP02	0838	N001	03/22/2011	Strontium	13.4		F	11		F	3.51			25	0	No
SHP02	0838	N001	03/22/2011	Sulfate	7080		F	5300		F	1180			28	0	Yes
SHP02	0838	N001	03/22/2011	Uranium	0.138	*EN	F	0.084		F	0.023			28	0	Yes
SHP02	0841	N001	03/22/2011	Ammonia Total as N	0.108		F	0.1	U	F	0.1	U	F	18	18	No
SHP02	0841	N001	03/22/2011	Sodium	7010		F	6800		F	4600		F	31	0	No
SHP02	0843	N001	03/23/2011	Calcium	286		F	570			370		F	12	0	No
SHP02	0843	N001	03/23/2011	Magnesium	103		F	215			130		F	12	0	No
SHP02	0843	N001	03/23/2011	Manganese	1.04		F	6		F	1.35			13	0	No
SHP02	0843	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	7.95		F	27		F	19		F	6	0	Yes
SHP02	0843	N001	03/23/2011	Potassium	7.24		F	14		FQ	7.7		F	12	0	No
SHP02	0843	N001	03/23/2011	Strontium	3.42		F	7.32			3.8		F	12	0	No
SHP02	0843	N001	03/23/2011	Sulfate	1180		F	2460			1588			14	0	No
SHP02	0844	N001	03/22/2011	Ammonia Total as N	0.046	J	F	0.31		F	0.1	U	F	6	4	No
SHP02	0844	N001	03/22/2011	Calcium	552		F	530		F	448			13	0	No
SHP02	0844	N001	03/22/2011	Sodium	2640		F	2400		F	397			13	0	No
SHP02	0844	N001	03/22/2011	Strontium	14		F	13		F	6.23			13	0	No
SHP02	0848	N001	03/23/2011	Sodium	7100		F	6500		F	1380			12	0	No
SHP02	0889	N001	03/22/2011	Ammonia Total as N	0.061	J		1.8			0.1	U	J	14	13	No
SHP02	0889	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	1340			900			370			14	0	Yes
SHP02	0889	N001	03/22/2011	Potassium	34.2			117			42			27	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	0949	N001	03/22/2011	Ammonia Total as N	0.553			0.1	U		0.1	U		6	6	No
SHP02	0949	N001	03/22/2011	Manganese	0.287			0.089			0.0056	B		6	0	Yes
SHP02	0949	N001	03/22/2011	Potassium	14.4		J	12		J	8.4			6	0	No
SHP02	0949	N001	03/22/2011	Sodium	576			510			450			6	0	Yes
SHP02	0949	N001	03/22/2011	Sulfate	2430			2900			2600			6	0	No
SHP02	0949	N001	03/22/2011	Uranium	0.0508		*EN	0.039			0.025			6	0	No
SHP02	1007	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	913		FQ	740		FQ	490		FQ	5	0	No
SHP02	1007	N001	03/24/2011	Selenium	0.366		E FQ	0.118		FQ	0.0208		N JL	10	0	Yes
SHP02	1007	N001	03/24/2011	Sodium	2910		FQ	2710		L	1920		L	9	0	No
SHP02	1007	N001	03/24/2011	Uranium	3.01		*EN FQ	2.5		FQ	0.0438		L	10	0	No
SHP02	1049	N001	03/24/2011	Calcium	416		F	410		F	379			6	0	No
SHP02	1049	N001	03/24/2011	Chloride	1630		F	1600		F	1120			6	0	No
SHP02	1049	N001	03/24/2011	Manganese	0.04		U F	0.0064		B FQ	0.00053		B	6	3	Yes
SHP02	1049	N001	03/24/2011	Potassium	26.6		F	53		FJ	40.2			6	0	Yes
SHP02	1049	N001	03/24/2011	Strontium	10.2		F	10		F	8.9		FQ	6	0	No
SHP02	1049	N001	03/24/2011	Sulfate	16000		F	18000		F	17000		FQ	7	0	No
SHP02	1057	N001	03/23/2011	Calcium	1670			710		F	430		F	13	0	Yes
SHP02	1057	N001	03/23/2011	Chloride	273			595		L	390		F	13	0	No
SHP02	1057	N001	03/23/2011	Magnesium	2590			2570		L	1400		F	13	0	No
SHP02	1057	N001	03/23/2011	Manganese	64.6		J	14		F	6.4		F	14	0	Yes
SHP02	1057	N001	03/23/2011	Sodium	2340			1900		L	1100		F	13	0	No
SHP02	1057	N001	03/23/2011	Strontium	17.7			10		F	7.3		F	13	0	Yes
SHP02	1058	N001	03/24/2011	Ammonia Total as N	4.25		FQ	3		FQ	1.2		FQ	6	0	No
SHP02	1058	N001	03/24/2011	Potassium	11.9		JFQ	22		FQJ	12.6		E J	8	0	No
SHP02	1058	N001	03/24/2011	Selenium	0.0015		UE FQ	0.001		B JL	0.00028		FQ	9	1	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	1058	N001	03/24/2011	Sodium	3160		FQ	2600		FQ	872		L	8	0	No
SHP02	1058	N001	03/24/2011	Strontium	11.6		FQ	11		FQ	2.69		L	8	0	No
SHP02	1059	N001	03/24/2011	Nitrate + Nitrite as Nitrogen	397		FQ	380		FQ	290		FQ	6	0	No
SHP02	1059	N001	03/24/2011	Potassium	19.7		FQ	36		FQ	25.7		L	10	0	No
SHP02	1059	N001	03/24/2011	Selenium	0.0015	UE	FQ	0.225			0.006		FQ	11	0	No
SHP02	1059	N001	03/24/2011	Sodium	4370		FQ	4110			2510		L	10	0	No
SHP02	1068	0001	03/22/2011	Ammonia Total as N	12		FQ	120		FQ	22		FQ	6	0	No
SHP02	1068	0001	03/22/2011	Potassium	32.5		FQ	92		FQ	50		FQ	5	0	No
SHP02	1068	0001	03/22/2011	Selenium	0.108	E	FQ	0.041		FQ	0.014		FQ	5	0	Yes
SHP02	1068	0001	03/22/2011	Sodium	1150		FQ	1100		FQ	890		FQ	5	0	No
SHP02	1068	0001	03/22/2011	Uranium	0.822	*EN	FQ	0.81		FQ	0.55		FQ	5	0	No
SHP02	1070	N001	03/23/2011	Calcium	421			420			350			9	0	No
SHP02	1070	N001	03/23/2011	Chloride	964			2900			1278			18	0	No
SHP02	1070	N001	03/23/2011	Manganese	0.129			3.5			0.207			9	0	No
SHP02	1070	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	668			990		J	680			11	0	No
SHP02	1070	N001	03/23/2011	Potassium	48.3			130			79			9	0	No
SHP02	1073	0001	03/23/2011	Calcium	606		FQ	560		FQ	500		FQ	6	0	No
SHP02	1073	0001	03/23/2011	Chloride	922		FQ	1200		FQ	1000		FQ	7	0	No
SHP02	1073	0001	03/23/2011	Nitrate + Nitrite as Nitrogen	1690		FQ	1500		FQ	1200			6	0	No
SHP02	1073	0001	03/23/2011	Potassium	103		FQ	160		FQ	130		FQ	6	0	No
SHP02	1073	0001	03/23/2011	Sodium	2980		FQ	2600		FQ	2400		FQ	6	0	Yes
SHP02	1073	0001	03/23/2011	Strontium	11.6		FQ	11		FQ	9.2		FQ	6	0	No
SHP02	1073	0001	03/23/2011	Sulfate	8290		FQ	9747			8800		FQ	7	0	No
SHP02	1074	N001	03/24/2011	Ammonia Total as N	10.6		FQ	9.4		FQ	2.7		FQ	6	0	No
SHP02	1074	N001	03/24/2011	Calcium	607		FQ	600		FQ	500		FQ	6	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	1074	N001	03/24/2011	Chloride	971	FQ	1100		FQ	980		FQ	6	0	No
SHP02	1074	N001	03/24/2011	Potassium	44	FQ	67		FQ	54		FQJ	6	0	No
SHP02	1074	N001	03/24/2011	Sodium	2480	FQ	2400		FQ	2000		FQ	6	0	No
SHP02	1074	N001	03/24/2011	Strontium	12.1	FQ	12		FQ	9.7		FQ	6	0	No
SHP02	1078	N001	03/22/2011	Magnesium	1210		1200			990			14	0	No
SHP02	1078	N001	03/22/2011	Manganese	0.0597		J	0.134		0.065			14	0	No
SHP02	1078	N001	03/22/2011	Nitrate + Nitrite as Nitrogen	555			830		620			16	0	No
SHP02	1078	N001	03/22/2011	Potassium	46.6			110		50.3	E	J	14	0	Yes
SHP02	1078	N001	03/22/2011	Strontium	11.4			11		8.9			14	0	No
SHP02	1079	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	96		F	92		35		F	16	0	No
SHP02	1079	N001	03/23/2011	Uranium	0.0454	*EN	F	0.037		0.023		F	20	0	Yes
SHP02	1088	N001	03/22/2011	Calcium	487			450		360			13	0	Yes
SHP02	1088	N001	03/22/2011	Manganese	0.626			0.11		0.0011	U		13	2	No
SHP02	1088	N001	03/22/2011	Potassium	39.1			88		47.3	E	J	13	0	No
SHP02	1091	N001	03/23/2011	Chloride	927			1400		1100			17	0	Yes
SHP02	1091	N001	03/23/2011	Magnesium	1520			2500		2200			10	0	Yes
SHP02	1091	N001	03/23/2011	Manganese	0.419			15		1			10	0	No
SHP02	1091	N001	03/23/2011	Potassium	59			130		80		J	10	0	No
SHP02	1091	N001	03/23/2011	Selenium	2.47	E		1.1		0.31			10	0	Yes
SHP02	1091	N001	03/23/2011	Sodium	4850			4000		3100			10	0	Yes
SHP02	1091	N001	03/23/2011	Strontium	11.7			15		12			10	0	No
SHP02	1092	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	869			2900		890			14	0	No
SHP02	1092	N001	03/23/2011	Potassium	65.1			240		88			10	0	No
SHP02	1092	N001	03/23/2011	Selenium	2.38	E		2.1		0.25			10	0	No
SHP02	1092	N001	03/23/2011	Sodium	4730			3800		1600			10	0	No

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current		Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect	
SHP02	1093R	N001	03/23/2011	Ammonia Total as N	288		870			620			6	0	Yes
SHP02	1093R	N001	03/23/2011	Calcium	1150		1100			840			6	0	No
SHP02	1093R	N001	03/23/2011	Chloride	377		740			580			6	0	Yes
SHP02	1093R	N001	03/23/2011	Magnesium	1260		2300			1700			6	0	No
SHP02	1093R	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	2060		2900			2300			6	0	No
SHP02	1093R	N001	03/23/2011	Potassium	124		280			200			6	0	No
SHP02	1093R	N001	03/23/2011	Sodium	1460		2200			1600			6	0	No
SHP02	1093R	N001	03/23/2011	Strontium	9.94		12			11			6	0	No
SHP02	1093R	N001	03/23/2011	Sulfate	4340		7600			5000			6	0	No
SHP02	1093R	N001	03/23/2011	Uranium	0.0851	*EN	0.14			0.11			6	0	No
SHP02	1095	N001	03/23/2011	Ammonia Total as N	468		1100			670			8	0	No
SHP02	1095	N001	03/23/2011	Calcium	867		800			640			7	0	No
SHP02	1095	N001	03/23/2011	Chloride	285		440			320			7	0	No
SHP02	1095	N001	03/23/2011	Manganese	34.9	J	32			23			7	0	No
SHP02	1095	N001	03/23/2011	Potassium	135		220			150	E		7	0	No
SHP02	1095	N001	03/23/2011	Selenium	0.19	E	0.3			0.2			7	0	No
SHP02	1095	N001	03/23/2011	Strontium	8.79		8.4			7.3			7	0	No
SHP02	1095	N001	03/23/2011	Sulfate	4880		7500			5100			9	0	No
SHP02	1096	N001	03/23/2011	Chloride	971		1200			1000			9	0	No
SHP02	1096	N001	03/23/2011	Manganese	0.113		0.48			0.14			9	0	No
SHP02	1096	N001	03/23/2011	Potassium	48.7		110			73	J		9	0	No
SHP02	1096	N001	03/23/2011	Sodium	5990		5400			3900			9	0	No
SHP02	1215	N001	03/23/2011	Ammonia Total as N	10.6		53			25			7	0	No
SHP02	1215	N001	03/23/2011	Chloride	2580		2400			1100			7	0	No
SHP02	1215	N001	03/23/2011	Nitrate + Nitrite as Nitrogen	3460		1800			730			8	0	Yes

Data Validation Outliers Report - No Field Parameters

Comparison: All Historical Data

Laboratory: GEL Laboratories

RIN: 11033666

Report Date: 7/6/2011

Site Code	Location Code	Sample ID	Sample Date	Analyte	Current			Historical Maximum			Historical Minimum			Number of Data Points		Statistical Outlier
					Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	Result	Qualifiers Lab	Data	N	N Below Detect	
SHP02	1215	N001	03/23/2011	Selenium	2.5	E		2.2			0.86			7	0	No
SHP02	1215	N001	03/23/2011	Sodium	13000			11000			4600			7	0	No
SHP02	1215	N001	03/23/2011	Strontium	14.9			14			6.7			7	0	No
SHP02	MW1	N001	03/24/2011	Calcium	72.3		FQ	70			53.9		L	7	0	No
SHP02	MW1	N001	03/24/2011	Strontium	8.64		FQ	7.5		FQ	4.62		L	6	0	No
SHP02	MW1	N001	03/24/2011	Sulfate	2230		FQ	2100		FQ	1270			8	0	No

STATISTICAL TESTS:

The distribution of the data is tested for normality or lognormality using the Shapiro-Wilk Test

Outliers are identified using Dixon's Test when there are 25 or fewer data points.

Outliers are identified using Rosner's Test when there are 26 or more data points.

See *Data Quality Assessment: Statistical Methods for Practitioners*, EPA QC/G-9S, February 2006.

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Anomalous Data Review Checksheet

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Anomalous Data Review Checksheet

Site: Shiprock, NM, Disposal Site

Sampling Data: Water

Reviewer: Gretchen Baer
Name (print)


Signature 8/24/11
Date

Site Hydrologist: David Miller
Name (print)


Signature 8/25/11
Date

Date of Review: May 27, 2011

Loc. No.	Analyte	Type of Anomaly	Disposition
SHP01-0857	Nitrate + Nitrite as Nitrogen	High	The value of 33.6 mg/L was verified by laboratory reanalysis.
SHP02-0600	Selenium	High	Compare to future results.
SHP02-0817	Uranium	High	Compare to future results. If future results are consistent with historical results, consider qualifying this point for possible laboratory error.
SHP02-0820	Selenium	High	Compare to future results.
SHP02-0838	Selenium	High	Compare to future results.

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Attachment 2

Data Presentation

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**Groundwater Quality Data
Floodplain Locations**

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

REPORT DATE: 7/5/2011

Location: 0608 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	10 - 15	329		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	10 - 15	68		F	#	0.8	
Ammonia Total as N	mg/L	03/22/2011	N002	10 - 15	70.3		F	#	0.8	
Calcium	mg/L	03/22/2011	N001	10 - 15	330		F	#	0.05	
Calcium	mg/L	03/22/2011	N002	10 - 15	330		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	10 - 15	174		JF	#	6.6	
Chloride	mg/L	03/22/2011	N002	10 - 15	274		JF	#	1.32	
Magnesium	mg/L	03/22/2011	N001	10 - 15	534		F	#	2.2	
Magnesium	mg/L	03/22/2011	N002	10 - 15	519		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	10 - 15	2.55		F	#	0.04	
Manganese	mg/L	03/22/2011	N002	10 - 15	2.54		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	10 - 15	35.7		JF	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N002	10 - 15	83		JF	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	10 - 15	129		F	#		
pH	s.u.	03/22/2011	N001	10 - 15	7.12		F	#		
Potassium	mg/L	03/22/2011	N001	10 - 15	51.8		F	#	1	
Potassium	mg/L	03/22/2011	N002	10 - 15	51.3		F	#	1	
Selenium	mg/L	03/22/2011	N001	10 - 15	0.00225	B	F	#	0.0015	
Selenium	mg/L	03/22/2011	N002	10 - 15	0.0015	UN	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	10 - 15	1440		F	#	2	
Sodium	mg/L	03/22/2011	N002	10 - 15	1360		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	10 - 15	9295		F	#		
Strontium	mg/L	03/22/2011	N001	10 - 15	7.17		F	#	0.001	
Strontium	mg/L	03/22/2011	N002	10 - 15	7		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	10 - 15	4900		F	#	100	

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

REPORT DATE: 7/5/2011

Location: 0608 WELL SE part of floodplain, well nest

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Sulfate	mg/L	03/22/2011	N002	10	-	15	5130		F	#	100	
Temperature	C	03/22/2011	N001	10	-	15	9.7		F	#		
Turbidity	NTU	03/22/2011	N001	10	-	15	6.14		F	#		
Uranium	mg/L	03/22/2011	N001	10	-	15	0.756		F	#	0.00134	
Uranium	mg/L	03/22/2011	N002	10	-	15	0.676	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0610 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	4 - 9	281		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	4 - 9	0.367		F	#	0.016	
Calcium	mg/L	03/23/2011	N001	4 - 9	473		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	4 - 9	161		F	#	6.6	
Magnesium	mg/L	03/23/2011	N001	4 - 9	786		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	4 - 9	0.04	U	F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	4 - 9	270		F	#	5	
Oxidation Reduction Potential	mV	03/23/2011	N001	4 - 9	45.2		F	#		
pH	s.u.	03/23/2011	N001	4 - 9	7.22		F	#		
Potassium	mg/L	03/23/2011	N001	4 - 9	73.3		F	#	1	
Selenium	mg/L	03/23/2011	N001	4 - 9	0.239		F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	4 - 9	1080		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	4 - 9	9371		F	#		
Strontium	mg/L	03/23/2011	N001	4 - 9	6.53		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	4 - 9	4870		F	#	100	
Temperature	C	03/23/2011	N001	4 - 9	9.8		F	#		
Turbidity	NTU	03/23/2011	N001	4 - 9	1.61		F	#		
Uranium	mg/L	03/23/2011	N001	4 - 9	1.19		F	#	0.00134	

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

REPORT DATE: 7/5/2011

Location: 0611 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	9.5 - 14.5	581		F #		
Ammonia Total as N	mg/L	03/23/2011	N001	9.5 - 14.5	2.3		F #	0.16	
Calcium	mg/L	03/23/2011	N001	9.5 - 14.5	213		F #	0.05	
Chloride	mg/L	03/23/2011	N001	9.5 - 14.5	455		F #	6.6	
Magnesium	mg/L	03/23/2011	N001	9.5 - 14.5	149		F #	0.11	
Manganese	mg/L	03/23/2011	N001	9.5 - 14.5	0.151		F #	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	9.5 - 14.5	17.4		F #	1	
Oxidation Reduction Potential	mV	03/23/2011	N001	9.5 - 14.5	69.6		F #		
pH	s.u.	03/23/2011	N001	9.5 - 14.5	7.11		F #		
Potassium	mg/L	03/23/2011	N001	9.5 - 14.5	15.1		F #	1	
Selenium	mg/L	03/23/2011	N001	9.5 - 14.5	0.00249	B	F #	0.0015	
Sodium	mg/L	03/23/2011	N001	9.5 - 14.5	2700		F #	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	9.5 - 14.5	11515		F #		
Strontium	mg/L	03/23/2011	N001	9.5 - 14.5	8.2		F #	0.001	
Sulfate	mg/L	03/23/2011	N001	9.5 - 14.5	5560		F #	100	
Temperature	C	03/23/2011	N001	9.5 - 14.5	9.9		F #		
Turbidity	NTU	03/23/2011	N001	9.5 - 14.5	2.13		F #		
Uranium	mg/L	03/23/2011	N001	9.5 - 14.5	0.0602		F #	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0612 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	5 - 10	316		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	5 - 10	0.51		F	#	0.016	
Calcium	mg/L	03/23/2011	N001	5 - 10	297		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	5 - 10	140		F	#	6.6	
Magnesium	mg/L	03/23/2011	N001	5 - 10	221		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	5 - 10	1.47		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	5 - 10	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/23/2011	N001	5 - 10	-116.3		F	#		
pH	s.u.	03/23/2011	N001	5 - 10	7.16		F	#		
Potassium	mg/L	03/23/2011	N001	5 - 10	12.9		F	#	1	
Selenium	mg/L	03/23/2011	N001	5 - 10	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	5 - 10	585		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	5 - 10	4556		F	#		
Strontium	mg/L	03/23/2011	N001	5 - 10	3.93		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	5 - 10	2660		F	#	100	
Temperature	C	03/23/2011	N001	5 - 10	9.3		F	#		
Turbidity	NTU	03/23/2011	N001	5 - 10	1.13		F	#		
Uranium	mg/L	03/23/2011	N001	5 - 10	0.284		F	#	0.00067	

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

REPORT DATE: 7/5/2011

Location: 0614 WELL SE part of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	10 - 15	458		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	10 - 15	17.4		F	#	0.4	
Calcium	mg/L	03/23/2011	N001	10 - 15	434		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	10 - 15	335		F	#	6.6	
Magnesium	mg/L	03/23/2011	N001	10 - 15	1540		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	10 - 15	2.02		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	10 - 15	353		F	#	5	
Oxidation Reduction Potential	mV	03/23/2011	N001	10 - 15	157.9		F	#		
pH	s.u.	03/23/2011	N001	10 - 15	7.09		F	#		
Potassium	mg/L	03/23/2011	N001	10 - 15	119		F	#	1	
Selenium	mg/L	03/23/2011	N001	10 - 15	0.99		F	#	0.075	
Sodium	mg/L	03/23/2011	N001	10 - 15	2220		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	10 - 15	15807		F	#		
Strontium	mg/L	03/23/2011	N001	10 - 15	9.53		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	10 - 15	8400		F	#	100	
Temperature	C	03/23/2011	N001	10 - 15	10.45		F	#		
Turbidity	NTU	03/23/2011	N001	10 - 15	1.24		F	#		
Uranium	mg/L	03/23/2011	N001	10 - 15	1.99		F	#	0.00335	

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

REPORT DATE: 7/5/2011

Location: 0615 WELL S of floodplain fence, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	4.5 - 9.5	596		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	4.5 - 9.5	8.03		F	#	0.4	
Calcium	mg/L	03/23/2011	N001	4.5 - 9.5	489		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	4.5 - 9.5	209		F	#	6.6	
Magnesium	mg/L	03/23/2011	N001	4.5 - 9.5	946		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	4.5 - 9.5	1.56		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	4.5 - 9.5	22.9		F	#	1	
Oxidation Reduction Potential	mV	03/23/2011	N001	4.5 - 9.5	100		F	#		
pH	s.u.	03/23/2011	N001	4.5 - 9.5	7		F	#		
Potassium	mg/L	03/23/2011	N001	4.5 - 9.5	67.2		F	#	1	
Selenium	mg/L	03/23/2011	N001	4.5 - 9.5	0.277		F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	4.5 - 9.5	1510		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	4.5 - 9.5	10971		F	#		
Strontium	mg/L	03/23/2011	N001	4.5 - 9.5	7.76		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	4.5 - 9.5	8340		F	#	100	
Temperature	C	03/23/2011	N001	4.5 - 9.5	10.91		F	#		
Turbidity	NTU	03/23/2011	N001	4.5 - 9.5	3.04		F	#		
Uranium	mg/L	03/23/2011	N001	4.5 - 9.5	1.79		F	#	0.00335	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	11	-	16	894		F	#	
Ammonia Total as N	mg/L	03/24/2011	N001	11	-	16	34.4		F	#	0.8
Calcium	mg/L	03/24/2011	N001	11	-	16	415		F	#	0.05
Chloride	mg/L	03/24/2011	N001	11	-	16	524		F	#	6.6
Magnesium	mg/L	03/24/2011	N001	11	-	16	1520		F	#	2.2
Manganese	mg/L	03/24/2011	N001	11	-	16	8.57		F	#	0.04
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	11	-	16	75.4		F	#	1
Oxidation Reduction Potential	mV	03/24/2011	N001	11	-	16	191.8		F	#	
pH	s.u.	03/24/2011	N001	11	-	16	6.79		F	#	
Potassium	mg/L	03/24/2011	N001	11	-	16	74.7		F	#	1
Selenium	mg/L	03/24/2011	N001	11	-	16	0.476		F	#	0.015
Sodium	mg/L	03/24/2011	N001	11	-	16	3120		F	#	2
Specific Conductance	µmhos/cm	03/24/2011	N001	11	-	16	18796		F	#	
Strontium	mg/L	03/24/2011	N001	11	-	16	9.99		F	#	0.001
Sulfate	mg/L	03/24/2011	N001	11	-	16	12900		F	#	100
Temperature	C	03/24/2011	N001	11	-	16	11.62		F	#	
Turbidity	NTU	03/24/2011	N001	11	-	16	1.38		F	#	
Uranium	mg/L	03/24/2011	N001	11	-	16	2.22		F	#	0.00335

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

REPORT DATE: 7/5/2011

Location: 0619 WELL Center of floodplain

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	8	-	13		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	8	-	13	0.552	F	#	0.016	
Calcium	mg/L	03/24/2011	N001	8	-	13	291	F	#	0.05	
Chloride	mg/L	03/24/2011	N001	8	-	13	105	F	#	6.6	
Magnesium	mg/L	03/24/2011	N001	8	-	13	134	F	#	0.11	
Manganese	mg/L	03/24/2011	N001	8	-	13	1.5	F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	8	-	13	0.05	U	F	#	0.05
Oxidation Reduction Potential	mV	03/24/2011	N001	8	-	13	-18.7	F	#		
pH	s.u.	03/24/2011	N001	8	-	13	7.04	F	#		
Potassium	mg/L	03/24/2011	N001	8	-	13	20.2	F	#	1	
Selenium	mg/L	03/24/2011	N001	8	-	13	0.0015	U	F	#	0.0015
Sodium	mg/L	03/24/2011	N001	8	-	13	1350	F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	8	-	13	6794	F	#		
Strontium	mg/L	03/24/2011	N001	8	-	13	8.33	F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	8	-	13	3320	F	#	100	
Temperature	C	03/24/2011	N001	8	-	13	12.36	F	#		
Turbidity	NTU	03/24/2011	N001	8	-	13	3.28	F	#		
Uranium	mg/L	03/24/2011	N001	8	-	13	0.152	F	#	0.000335	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	5 - 10	344		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	5 - 10	0.0646	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	5 - 10	265		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	5 - 10	131		F	#	6.6	
Magnesium	mg/L	03/24/2011	N001	5 - 10	201		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	5 - 10	1.61		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	5 - 10	0.356		F	#	0.05	
Oxidation Reduction Potential	mV	03/24/2011	N001	5 - 10	96		F	#		
pH	s.u.	03/24/2011	N001	5 - 10	7.25		F	#		
Potassium	mg/L	03/24/2011	N001	5 - 10	19.1		F	#	1	
Selenium	mg/L	03/24/2011	N001	5 - 10	0.207		F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	5 - 10	1520		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	5 - 10	7711		F	#		
Strontium	mg/L	03/24/2011	N001	5 - 10	7.95		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	5 - 10	3030		F	#	100	
Temperature	C	03/24/2011	N001	5 - 10	9.72		F	#		
Turbidity	NTU	03/24/2011	N001	5 - 10	2.56		F	#		
Uranium	mg/L	03/24/2011	N001	5 - 10	0.223		F	#	0.000335	

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

REPORT DATE: 7/5/2011

Location: 0623 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	10 - 15	382		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	10 - 15	0.102		UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	10 - 15	265		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	10 - 15	74.8		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	10 - 15	63.7		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	10 - 15	2.01		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	10 - 15	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	10 - 15	76.3		F	#		
pH	s.u.	03/24/2011	N001	10 - 15	7.02		F	#		
Potassium	mg/L	03/24/2011	N001	10 - 15	12		JF	#	1	
Selenium	mg/L	03/24/2011	N001	10 - 15	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	10 - 15	1160		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	10 - 15	5939		F	#		
Strontium	mg/L	03/24/2011	N001	10 - 15	9.9		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	10 - 15	2810		F	#	100	
Temperature	C	03/24/2011	N001	10 - 15	12.84		F	#		
Turbidity	NTU	03/24/2011	N001	10 - 15	1.53		F	#		
Uranium	mg/L	03/24/2011	N001	10 - 15	0.0666		F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0625 WELL Center of floodplain, well nest

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.5 - 9.5	408		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.5 - 9.5	0.0568	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	4.5 - 9.5	272		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	4.5 - 9.5	77.8		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	4.5 - 9.5	57.8		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	4.5 - 9.5	3.25		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.5 - 9.5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	4.5 - 9.5	49.4		F	#		
pH	s.u.	03/24/2011	N001	4.5 - 9.5	7		F	#		
Potassium	mg/L	03/24/2011	N001	4.5 - 9.5	9.69		JF	#	1	
Selenium	mg/L	03/24/2011	N001	4.5 - 9.5	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	4.5 - 9.5	1190		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	4.5 - 9.5	5851		F	#		
Strontium	mg/L	03/24/2011	N001	4.5 - 9.5	11		F	#	0.02	
Sulfate	mg/L	03/24/2011	N001	4.5 - 9.5	2040		F	#	100	
Temperature	C	03/24/2011	N001	4.5 - 9.5	12.11		F	#		
Turbidity	NTU	03/24/2011	N001	4.5 - 9.5	5.32		F	#		
Uranium	mg/L	03/24/2011	N001	4.5 - 9.5	0.0479		F	#	0.000067	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	9.5 - 14.5	366		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	9.5 - 14.5	0.214		F	#	0.016	
Calcium	mg/L	03/24/2011	N001	9.5 - 14.5	232		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	9.5 - 14.5	100		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	9.5 - 14.5	48		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	9.5 - 14.5	3.54		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	9.5 - 14.5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	9.5 - 14.5	6.1		F	#		
pH	s.u.	03/24/2011	N001	9.5 - 14.5	7.17		F	#		
Potassium	mg/L	03/24/2011	N001	9.5 - 14.5	6.72		JF	#	1	
Selenium	mg/L	03/24/2011	N001	9.5 - 14.5	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	9.5 - 14.5	1260		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	9.5 - 14.5	6895		F	#		
Strontium	mg/L	03/24/2011	N001	9.5 - 14.5	10.7		F	#	0.02	
Sulfate	mg/L	03/24/2011	N001	9.5 - 14.5	2360		F	#	100	
Temperature	C	03/24/2011	N001	9.5 - 14.5	10.11		F	#		
Turbidity	NTU	03/24/2011	N001	9.5 - 14.5	4		F	#		
Uranium	mg/L	03/24/2011	N001	9.5 - 14.5	0.0533		F	#	0.000067	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	6 - 10	154		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	6 - 10	0.0525	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	6 - 10	156		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	6 - 10	67.5		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	6 - 10	29.6		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	6 - 10	4.61		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	6 - 10	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	6 - 10	-238.3		F	#		
pH	s.u.	03/24/2011	N001	6 - 10	7.26		F	#		
Potassium	mg/L	03/24/2011	N001	6 - 10	5.73		JF	#	1	
Selenium	mg/L	03/24/2011	N001	6 - 10	0.0043	B	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	6 - 10	958		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	6 - 10	4739		F	#		
Strontium	mg/L	03/24/2011	N001	6 - 10	9.91		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	6 - 10	2630		F	#	100	
Temperature	C	03/24/2011	N001	6 - 10	9.13		F	#		
Turbidity	NTU	03/24/2011	N001	6 - 10	6.2		F	#		
Uranium	mg/L	03/24/2011	N001	6 - 10	0.0162		F	#	0.000067	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	5 - 10	720		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	5 - 10	0.0283	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	5 - 10	434		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	5 - 10	154		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	5 - 10	106		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	5 - 10	1.65		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	5 - 10	12.4		F	#	0.1	
Oxidation Reduction Potential	mV	03/24/2011	N001	5 - 10	-133.6		F	#		
pH	s.u.	03/24/2011	N001	5 - 10	7.06		F	#		
Potassium	mg/L	03/24/2011	N001	5 - 10	8.95		JF	#	1	
Selenium	mg/L	03/24/2011	N001	5 - 10	0.105		F	#	0.0075	
Sodium	mg/L	03/24/2011	N001	5 - 10	1350		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	5 - 10	6986		F	#		
Strontium	mg/L	03/24/2011	N001	5 - 10	24.5		F	#	0.02	
Sulfate	mg/L	03/24/2011	N001	5 - 10	3900		F	#	100	
Temperature	C	03/24/2011	N001	5 - 10	9.9		F	#		
Turbidity	NTU	03/24/2011	N001	5 - 10	2.7		F	#		
Uranium	mg/L	03/24/2011	N001	5 - 10	0.137		F	#	0.000335	

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

REPORT DATE: 7/5/2011

Location: 0734 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	2 - 4	775		FQ #		
Ammonia Total as N	mg/L	03/23/2011	N001	2 - 4	0.091	J	UFQ #	0.016	
Calcium	mg/L	03/23/2011	N001	2 - 4	390		FQ #	0.05	
Chloride	mg/L	03/23/2011	N001	2 - 4	170		FQ #	6.6	
Magnesium	mg/L	03/23/2011	N001	2 - 4	271		FQ #	0.11	
Manganese	mg/L	03/23/2011	N001	2 - 4	1.2		FQ #	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	2 - 4	0.357		FQ #	0.05	
Oxidation Reduction Potential	mV	03/23/2011	N001	2 - 4	24		FQ #		
pH	s.u.	03/23/2011	N001	2 - 4	7.38		FQ #		
Potassium	mg/L	03/23/2011	N001	2 - 4	14.3		JFQ #	1	
Selenium	mg/L	03/23/2011	N001	2 - 4	0.0162		FQ #	0.0015	
Sodium	mg/L	03/23/2011	N001	2 - 4	2380		FQ #	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	2 - 4	12930		FQ #		
Strontium	mg/L	03/23/2011	N001	2 - 4	11		FQ #	0.02	
Sulfate	mg/L	03/23/2011	N001	2 - 4	5150		FQ #	100	
Temperature	C	03/23/2011	N001	2 - 4	10.67		FQ #		
Turbidity	NTU	03/23/2011	N001	2 - 4	4.06		FQ #		
Uranium	mg/L	03/23/2011	N001	2 - 4	0.095		FQ #	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0735 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	3 - 8	967		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	3 - 8	12.1	Hh	JF	#	0.4	
Ammonia Total as N	mg/L	03/22/2011	N002	3 - 8	14.8		F	#	0.4	
Calcium	mg/L	03/22/2011	N001	3 - 8	554		F	#	1	
Calcium	mg/L	03/22/2011	N002	3 - 8	531		F	#	1	
Chloride	mg/L	03/22/2011	N001	3 - 8	608		F	#	6.6	
Chloride	mg/L	03/22/2011	N002	3 - 8	717		F	#	3.3	
Magnesium	mg/L	03/22/2011	N001	3 - 8	1560		F	#	2.2	
Magnesium	mg/L	03/22/2011	N002	3 - 8	1490		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	3 - 8	4.19		F	#	0.04	
Manganese	mg/L	03/22/2011	N002	3 - 8	4.1		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	3 - 8	645		F	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N002	3 - 8	738		F	#	25	
Oxidation Reduction Potential	mV	03/22/2011	N001	3 - 8	124.2		F	#		
pH	s.u.	03/22/2011	N001	3 - 8	6.87		F	#		
Potassium	mg/L	03/22/2011	N001	3 - 8	51.7		F	#	1	
Potassium	mg/L	03/22/2011	N002	3 - 8	48		F	#	1	
Selenium	mg/L	03/22/2011	N001	3 - 8	0.0712		JF	#	0.0015	
Selenium	mg/L	03/22/2011	N002	3 - 8	0.0759	N	JF	#	0.0015	
Sodium	mg/L	03/22/2011	N001	3 - 8	4330		F	#	2	
Sodium	mg/L	03/22/2011	N002	3 - 8	4030		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	3 - 8	22197		F	#		
Strontium	mg/L	03/22/2011	N001	3 - 8	14.1		F	#	0.02	
Strontium	mg/L	03/22/2011	N002	3 - 8	13.9		F	#	0.02	
Sulfate	mg/L	03/22/2011	N001	3 - 8	17200		JF	#	100	

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

REPORT DATE: 7/5/2011

Location: 0735 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Sulfate	mg/L	03/22/2011	N002	3 - 8	11400		JF	#	100	
Temperature	C	03/22/2011	N001	3 - 8	8.82		F	#		
Turbidity	NTU	03/22/2011	N001	3 - 8	1.79		F	#		
Uranium	mg/L	03/22/2011	N001	3 - 8	0.393		JF	#	0.000335	
Uranium	mg/L	03/22/2011	N002	3 - 8	0.364	E	JF	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0736 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	3 - 5	356		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	3 - 5	0.0569	HJh	JF	#	0.016	
Calcium	mg/L	03/24/2011	N001	3 - 5	372		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	3 - 5	84.2		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	3 - 5	76.1		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	3 - 5	0.354		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	3 - 5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	3 - 5	-37.2		F	#		
pH	s.u.	03/24/2011	N001	3 - 5	7.21		F	#		
Potassium	mg/L	03/24/2011	N001	3 - 5	19.5		F	#	1	
Selenium	mg/L	03/24/2011	N001	3 - 5	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	3 - 5	1160		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	3 - 5	6002		F	#		
Strontium	mg/L	03/24/2011	N001	3 - 5	5		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	3 - 5	3590		F	#	100	
Temperature	C	03/24/2011	N001	3 - 5	12.2		F	#		
Turbidity	NTU	03/24/2011	N001	3 - 5	7.9		F	#		
Uranium	mg/L	03/24/2011	N001	3 - 5	0.0479		F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0766 WELL Well Point

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	6.25 - 8.75	398		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	6.25 - 8.75	0.0881	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	6.25 - 8.75	321		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	6.25 - 8.75	128		JF	#	0.66	
Magnesium	mg/L	03/24/2011	N001	6.25 - 8.75	276		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	6.25 - 8.75	0.117		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	6.25 - 8.75	3.32		F	#	0.1	
Oxidation Reduction Potential	mV	03/24/2011	N001	6.25 - 8.75	-110		F	#		
pH	s.u.	03/24/2011	N001	6.25 - 8.75	7.48		F	#		
Potassium	mg/L	03/24/2011	N001	6.25 - 8.75	36	E	F	#	0.5	
Selenium	mg/L	03/24/2011	N001	6.25 - 8.75	0.00463	B	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	6.25 - 8.75	1910		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	6.25 - 8.75	9618		F	#		
Strontium	mg/L	03/24/2011	N001	6.25 - 8.75	4.79		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	6.25 - 8.75	5290		F	#	25	
Temperature	C	03/24/2011	N001	6.25 - 8.75	12.12		F	#		
Turbidity	NTU	03/24/2011	N001	6.25 - 8.75	6.05		F	#		
Uranium	mg/L	03/24/2011	N001	6.25 - 8.75	0.277	E	JF	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0768 WELL Well Point

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.58 - 7.08	960		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.58 - 7.08	0.277		F	#	0.016	
Calcium	mg/L	03/24/2011	N001	4.58 - 7.08	381		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	4.58 - 7.08	597		F	#	6.6	
Magnesium	mg/L	03/24/2011	N001	4.58 - 7.08	1190		F	#	2.2	
Manganese	mg/L	03/24/2011	N001	4.58 - 7.08	1.59		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.58 - 7.08	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	4.58 - 7.08	-88.2		F	#		
pH	s.u.	03/24/2011	N001	4.58 - 7.08	7.21		F	#		
Potassium	mg/L	03/24/2011	N001	4.58 - 7.08	97	E	F	#	1	
Selenium	mg/L	03/24/2011	N001	4.58 - 7.08	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	4.58 - 7.08	6560		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	4.58 - 7.08	24164		F	#		
Strontium	mg/L	03/24/2011	N001	4.58 - 7.08	14.8		F	#	0.02	
Sulfate	mg/L	03/24/2011	N001	4.58 - 7.08	15200		F	#	100	
Temperature	C	03/24/2011	N001	4.58 - 7.08	11.32		F	#		
Turbidity	NTU	03/24/2011	N001	4.58 - 7.08	4.26		F	#		
Uranium	mg/L	03/24/2011	N001	4.58 - 7.08	0.757	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0773 WELL Well Point

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	4 - 6.5	308		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	4 - 6.5	0.511		F	#	0.016	
Calcium	mg/L	03/23/2011	N001	4 - 6.5	280		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	4 - 6.5	80.3		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	4 - 6.5	268		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	4 - 6.5	0.002	U	F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	4 - 6.5	27.1		F	#	1	
Oxidation Reduction Potential	mV	03/23/2011	N001	4 - 6.5	68.3		F	#		
pH	s.u.	03/23/2011	N001	4 - 6.5	7.37		F	#		
Potassium	mg/L	03/23/2011	N001	4 - 6.5	30.9	E	F	#	0.05	
Selenium	mg/L	03/23/2011	N001	4 - 6.5	0.0589		F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	4 - 6.5	425		F	#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	4 - 6.5	4366		F	#		
Strontium	mg/L	03/23/2011	N001	4 - 6.5	2.74		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	4 - 6.5	2150		F	#	10	
Temperature	C	03/23/2011	N001	4 - 6.5	11.09		F	#		
Turbidity	NTU	03/23/2011	N001	4 - 6.5	1.71		F	#		
Uranium	mg/L	03/23/2011	N001	4 - 6.5	0.389	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0775 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.25 - 6.75	450		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.25 - 6.75	0.0551	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	4.25 - 6.75	430		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	4.25 - 6.75	80.6		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	4.25 - 6.75	231		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	4.25 - 6.75	0.575		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.25 - 6.75	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	4.25 - 6.75	19.8		F	#		
pH	s.u.	03/24/2011	N001	4.25 - 6.75	7.11		F	#		
Potassium	mg/L	03/24/2011	N001	4.25 - 6.75	34.7	E	F	#	0.5	
Selenium	mg/L	03/24/2011	N001	4.25 - 6.75	0.00199	B	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	4.25 - 6.75	1500		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	4.25 - 6.75	7780		F	#		
Strontium	mg/L	03/24/2011	N001	4.25 - 6.75	5.8		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	4.25 - 6.75	4180		F	#	20	
Temperature	C	03/24/2011	N001	4.25 - 6.75	11.79		F	#		
Turbidity	NTU	03/24/2011	N001	4.25 - 6.75	2.8		F	#		
Uranium	mg/L	03/24/2011	N001	4.25 - 6.75	0.205	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0779 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	7 - 9.5	673		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	7 - 9.5	2		F	#	0.16	
Calcium	mg/L	03/24/2011	N001	7 - 9.5	443		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	7 - 9.5	176		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	7 - 9.5	837		F	#	1.1	
Manganese	mg/L	03/24/2011	N001	7 - 9.5	5.89		F	#	0.02	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	7 - 9.5	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	7 - 9.5	-55.2		F	#		
pH	s.u.	03/24/2011	N001	7 - 9.5	7.08		F	#		
Potassium	mg/L	03/24/2011	N001	7 - 9.5	58.6	E	F	#	0.5	
Selenium	mg/L	03/24/2011	N001	7 - 9.5	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	7 - 9.5	1790		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	7 - 9.5	11209		F	#		
Strontium	mg/L	03/24/2011	N001	7 - 9.5	8.44		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	7 - 9.5	6660		F	#	50	
Temperature	C	03/24/2011	N001	7 - 9.5	10.39		F	#		
Turbidity	NTU	03/24/2011	N001	7 - 9.5	3.61		F	#		
Uranium	mg/L	03/24/2011	N001	7 - 9.5	1	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.71	- 9.46	215		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.71	- 9.46	0.0721	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	4.71	- 9.46	81.1		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	4.71	- 9.46	19.2		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	4.71	- 9.46	27.3		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	4.71	- 9.46	1.72		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.71	- 9.46	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	4.71	- 9.46	31.9		F	#		
pH	s.u.	03/24/2011	N001	4.71	- 9.46	7.5		F	#		
Potassium	mg/L	03/24/2011	N001	4.71	- 9.46	3.28	BE	F	#	0.05	
Selenium	mg/L	03/24/2011	N001	4.71	- 9.46	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	4.71	- 9.46	141		F	#	0.1	
Specific Conductance	µmhos/cm	03/24/2011	N001	4.71	- 9.46	1462		F	#		
Strontium	mg/L	03/24/2011	N001	4.71	- 9.46	1.02		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	4.71	- 9.46	459		F	#	2	
Temperature	C	03/24/2011	N001	4.71	- 9.46	10.1		F	#		
Turbidity	NTU	03/24/2011	N001	4.71	- 9.46	7.34		F	#		
Uranium	mg/L	03/24/2011	N001	4.71	- 9.46	0.00713	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.375 - 9.375	234		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.375 - 9.375	0.0399	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	4.375 - 9.375	115		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	4.375 - 9.375	22.2		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	4.375 - 9.375	44.5		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	4.375 - 9.375	1.84		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.375 - 9.375	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	4.375 - 9.375	64.1		F	#		
pH	s.u.	03/24/2011	N001	4.375 - 9.375	7.48		F	#		
Potassium	mg/L	03/24/2011	N001	4.375 - 9.375	3.5	BE	F	#	0.05	
Selenium	mg/L	03/24/2011	N001	4.375 - 9.375	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	4.375 - 9.375	176		F	#	0.1	
Specific Conductance	µmhos/cm	03/24/2011	N001	4.375 - 9.375	1630		F	#		
Strontium	mg/L	03/24/2011	N001	4.375 - 9.375	1.4		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	4.375 - 9.375	615		F	#	5	
Temperature	C	03/24/2011	N001	4.375 - 9.375	11.33		F	#		
Turbidity	NTU	03/24/2011	N001	4.375 - 9.375	9.78		F	#		
Uranium	mg/L	03/24/2011	N001	4.375 - 9.375	0.0104	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0792 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	6 - 8	601		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	6 - 8	0.0799	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	6 - 8	377		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	6 - 8	183		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	6 - 8	367		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	6 - 8	1.71		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	6 - 8	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	6 - 8	163.6		F	#		
pH	s.u.	03/24/2011	N001	6 - 8	7.53		F	#		
Potassium	mg/L	03/24/2011	N001	6 - 8	43.8	E	F	#	0.5	
Selenium	mg/L	03/24/2011	N001	6 - 8	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	6 - 8	2280		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	6 - 8	11392		F	#		
Strontium	mg/L	03/24/2011	N001	6 - 8	8.29		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	6 - 8	6170		F	#	50	
Temperature	C	03/24/2011	N001	6 - 8	9.92		F	#		
Turbidity	NTU	03/24/2011	N001	6 - 8	2.3		F	#		
Uranium	mg/L	03/24/2011	N001	6 - 8	0.239	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0793 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	5.2 - 7.2	424		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	5.2 - 7.2	4.84		F	#	0.16	
Calcium	mg/L	03/24/2011	N001	5.2 - 7.2	312		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	5.2 - 7.2	109		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	5.2 - 7.2	407		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	5.2 - 7.2	0.355		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	5.2 - 7.2	7.76		F	#	0.1	
Oxidation Reduction Potential	mV	03/24/2011	N001	5.2 - 7.2	222.1		F	#		
pH	s.u.	03/24/2011	N001	5.2 - 7.2	7.02		F	#		
Potassium	mg/L	03/24/2011	N001	5.2 - 7.2	31.3	E	F	#	0.25	
Selenium	mg/L	03/24/2011	N001	5.2 - 7.2	0.246		F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	5.2 - 7.2	655		F	#	0.5	
Specific Conductance	µmhos/cm	03/24/2011	N001	5.2 - 7.2	5780		F	#		
Strontium	mg/L	03/24/2011	N001	5.2 - 7.2	4.26		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	5.2 - 7.2	3150		F	#	20	
Temperature	C	03/24/2011	N001	5.2 - 7.2	9.1		F	#		
Turbidity	NTU	03/24/2011	N001	5.2 - 7.2	2.32		F	#		
Uranium	mg/L	03/24/2011	N001	5.2 - 7.2	0.648	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0797 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	7.3	- 9.3	404		FQ	#		
Ammonia Total as N	mg/L	03/23/2011	N001	7.3	- 9.3	0.102		UFQ	#	0.016	
Calcium	mg/L	03/23/2011	N001	7.3	- 9.3	249		FQ	#	0.05	
Chloride	mg/L	03/23/2011	N001	7.3	- 9.3	178		FQ	#	0.66	
Magnesium	mg/L	03/23/2011	N001	7.3	- 9.3	64.4		FQ	#	0.11	
Manganese	mg/L	03/23/2011	N001	7.3	- 9.3	0.4		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	7.3	- 9.3	0.01	U	FQ	#	0.01	
Oxidation Reduction Potential	mV	03/23/2011	N001	7.3	- 9.3	151.6		FQ	#		
pH	s.u.	03/23/2011	N001	7.3	- 9.3	7.57		FQ	#		
Potassium	mg/L	03/23/2011	N001	7.3	- 9.3	10.5	E	FQ	#	0.5	
Selenium	mg/L	03/23/2011	N001	7.3	- 9.3	0.0015	U	FQ	#	0.0015	
Sodium	mg/L	03/23/2011	N001	7.3	- 9.3	2160		FQ	#	1	
Specific Conductance	µmhos/cm	03/23/2011	N001	7.3	- 9.3	5941		FQ	#		
Strontium	mg/L	03/23/2011	N001	7.3	- 9.3	4.7		FQ	#	0.001	
Sulfate	mg/L	03/23/2011	N001	7.3	- 9.3	2690		FQ	#	10	
Temperature	C	03/23/2011	N001	7.3	- 9.3	15.83		FQ	#		
Turbidity	NTU	03/23/2011	N001	7.3	- 9.3	7.56		FQ	#		
Uranium	mg/L	03/23/2011	N001	7.3	- 9.3	0.0235	E	FQ	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0798 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	7.1 - 9.1	544		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	7.1 - 9.1	1.25		F	#	0.016	
Calcium	mg/L	03/24/2011	N001	7.1 - 9.1	387		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	7.1 - 9.1	160		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	7.1 - 9.1	311		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	7.1 - 9.1	1.54		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	7.1 - 9.1	0.69		F	#	0.05	
Oxidation Reduction Potential	mV	03/24/2011	N001	7.1 - 9.1	58.4		F	#		
pH	s.u.	03/24/2011	N001	7.1 - 9.1	7.13		F	#		
Potassium	mg/L	03/24/2011	N001	7.1 - 9.1	77.4	E	F	#	0.5	
Selenium	mg/L	03/24/2011	N001	7.1 - 9.1	0.0362		F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	7.1 - 9.1	3850		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	7.1 - 9.1	9917		F	#		
Strontium	mg/L	03/24/2011	N001	7.1 - 9.1	5.66		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	7.1 - 9.1	5620		F	#	20	
Temperature	C	03/24/2011	N001	7.1 - 9.1	11.83		F	#		
Turbidity	NTU	03/24/2011	N001	7.1 - 9.1	2.12		F	#		
Uranium	mg/L	03/24/2011	N001	7.1 - 9.1	0.315	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	5.6	- 15.4	439		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	5.6	- 15.4	0.0739	J	UF	#	0.016	
Calcium	mg/L	03/23/2011	N001	5.6	- 15.4	25.5		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	5.6	- 15.4	24.3		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	5.6	- 15.4	6.84		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	5.6	- 15.4	0.0287		JF	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	5.6	- 15.4	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/23/2011	N001	5.6	- 15.4	-183.4		F	#		
pH	s.u.	03/23/2011	N001	5.6	- 15.4	7.71		F	#		
Potassium	mg/L	03/23/2011	N001	5.6	- 15.4	1.7	BE	F	#	0.05	
Selenium	mg/L	03/23/2011	N001	5.6	- 15.4	0.00351	B	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	5.6	- 15.4	389		F	#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	5.6	- 15.4	2014		F	#		
Strontium	mg/L	03/23/2011	N001	5.6	- 15.4	0.44		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	5.6	- 15.4	642		F	#	2	
Temperature	C	03/23/2011	N001	5.6	- 15.4	16.15		F	#		
Turbidity	NTU	03/23/2011	N001	5.6	- 15.4	35.3		F	#		
Uranium	mg/L	03/23/2011	N001	5.6	- 15.4	0.0348	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0853 WELL S of floodplain fence

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	10 - 15	238		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	10 - 15	11.8		F	#	0.4	
Calcium	mg/L	03/23/2011	N001	10 - 15	190		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	10 - 15	23.6		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	10 - 15	59.7		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	10 - 15	0.928		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	10 - 15	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/23/2011	N001	10 - 15	-4.9		F	#		
pH	s.u.	03/23/2011	N001	10 - 15	7.21		F	#		
Potassium	mg/L	03/23/2011	N001	10 - 15	9.93	E	F	#	0.05	
Selenium	mg/L	03/23/2011	N001	10 - 15	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	10 - 15	127		F	#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	10 - 15	2012		F	#		
Strontium	mg/L	03/23/2011	N001	10 - 15	2.09		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	10 - 15	818		F	#	10	
Temperature	C	03/23/2011	N001	10 - 15	11.83		F	#		
Turbidity	NTU	03/23/2011	N001	10 - 15	8.3		F	#		
Uranium	mg/L	03/23/2011	N001	10 - 15	0.108	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0854 WELL NE part of floodplain

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	9.05 - 11.55	882		F	#		
Ammonia Total as N	mg/L	03/25/2011	N001	9.05 - 11.55	7.55		F	#	0.4	
Calcium	mg/L	03/25/2011	N001	9.05 - 11.55	346		F	#	0.05	
Chloride	mg/L	03/25/2011	N001	9.05 - 11.55	439		F	#	3.3	
Magnesium	mg/L	03/25/2011	N001	9.05 - 11.55	1310		F	#	1.1	
Manganese	mg/L	03/25/2011	N001	9.05 - 11.55	3.42		F	#	0.02	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	9.05 - 11.55	40.6		F	#	1	
Oxidation Reduction Potential	mV	03/25/2011	N001	9.05 - 11.55	191		F	#		
pH	s.u.	03/25/2011	N001	9.05 - 11.55	7.14		F	#		
Potassium	mg/L	03/25/2011	N001	9.05 - 11.55	72.8	E	F	#	0.5	
Selenium	mg/L	03/25/2011	N001	9.05 - 11.55	0.0157		F	#	0.0015	
Sodium	mg/L	03/25/2011	N001	9.05 - 11.55	3310		F	#	1	
Specific Conductance	µmhos/cm	03/25/2011	N001	9.05 - 11.55	17341		F	#		
Strontium	mg/L	03/25/2011	N001	9.05 - 11.55	8.34		F	#	0.001	
Sulfate	mg/L	03/25/2011	N001	9.05 - 11.55	11300		F	#	50	
Temperature	C	03/25/2011	N001	9.05 - 11.55	10.64		F	#		
Turbidity	NTU	03/25/2011	N001	9.05 - 11.55	8.92		F	#		
Uranium	mg/L	03/25/2011	N001	9.05 - 11.55	1.38	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0855 WELL NW part of floodplain

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.9	-	14.9		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.9	-	14.9	0.0549	J	UF	#	0.016
Calcium	mg/L	03/24/2011	N001	4.9	-	14.9	305		F	#	0.05
Chloride	mg/L	03/24/2011	N001	4.9	-	14.9	117		F	#	0.66
Magnesium	mg/L	03/24/2011	N001	4.9	-	14.9	90.4		F	#	0.11
Manganese	mg/L	03/24/2011	N001	4.9	-	14.9	1.85		F	#	0.002
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.9	-	14.9	1.11		F	#	0.05
Oxidation Reduction Potential	mV	03/24/2011	N001	4.9	-	14.9	24.9		F	#	
pH	s.u.	03/24/2011	N001	4.9	-	14.9	7.23		F	#	
Potassium	mg/L	03/24/2011	N001	4.9	-	14.9	13.2	E	F	#	0.5
Selenium	mg/L	03/24/2011	N001	4.9	-	14.9	0.0188		F	#	0.0015
Sodium	mg/L	03/24/2011	N001	4.9	-	14.9	1550		F	#	1
Specific Conductance	µmhos/cm	03/24/2011	N001	4.9	-	14.9	7732		F	#	
Strontium	mg/L	03/24/2011	N001	4.9	-	14.9	11.7		F	#	0.01
Sulfate	mg/L	03/24/2011	N001	4.9	-	14.9	3930		F	#	20
Temperature	C	03/24/2011	N001	4.9	-	14.9	9.21		F	#	
Turbidity	NTU	03/24/2011	N001	4.9	-	14.9	8		F	#	
Uranium	mg/L	03/24/2011	N001	4.9	-	14.9	0.085	E	F	#	0.000067

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

REPORT DATE: 7/5/2011

Location: 0856 WELL NW part of floodplain

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	18.8	- 23.8	465		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	18.8	- 23.8	0.0734	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	18.8	- 23.8	261		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	18.8	- 23.8	86		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	18.8	- 23.8	71.6		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	18.8	- 23.8	1.55		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	18.8	- 23.8	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	18.8	- 23.8	127.9		F	#		
pH	s.u.	03/24/2011	N001	18.8	- 23.8	7.38		F	#		
Potassium	mg/L	03/24/2011	N001	18.8	- 23.8	16.1	E	F	#	0.5	
Selenium	mg/L	03/24/2011	N001	18.8	- 23.8	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	18.8	- 23.8	1320		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	18.8	- 23.8	6142		F	#		
Strontium	mg/L	03/24/2011	N001	18.8	- 23.8	7.58		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	18.8	- 23.8	3040		F	#	20	
Temperature	C	03/24/2011	N001	18.8	- 23.8	12.48		F	#		
Turbidity	NTU	03/24/2011	N001	18.8	- 23.8	4.7		F	#		
Uranium	mg/L	03/24/2011	N001	18.8	- 23.8	0.0665	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 0857 WELL Near E end of floodplain fence

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	13.2	- 18.2	451		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	13.2	- 18.2	14.5		F	#	0.4	
Calcium	mg/L	03/24/2011	N001	13.2	- 18.2	736		F	#	0.5	
Chloride	mg/L	03/24/2011	N001	13.2	- 18.2	221		F	#	1.32	
Magnesium	mg/L	03/24/2011	N001	13.2	- 18.2	410		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	13.2	- 18.2	6.27		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	13.2	- 18.2	33.6		F	#	1	
Oxidation Reduction Potential	mV	03/24/2011	N001	13.2	- 18.2	167.1		F	#		
pH	s.u.	03/24/2011	N001	13.2	- 18.2	6.89		F	#		
Potassium	mg/L	03/24/2011	N001	13.2	- 18.2	26	E	F	#	0.5	
Selenium	mg/L	03/24/2011	N001	13.2	- 18.2	0.0015	U	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	13.2	- 18.2	780		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	13.2	- 18.2	7718		F	#		
Strontium	mg/L	03/24/2011	N001	13.2	- 18.2	8.39		F	#	0.01	
Sulfate	mg/L	03/24/2011	N001	13.2	- 18.2	4500		F	#	20	
Temperature	C	03/24/2011	N001	13.2	- 18.2	12.53		F	#		
Turbidity	NTU	03/24/2011	N001	13.2	- 18.2	2.42		F	#		
Uranium	mg/L	03/24/2011	N001	13.2	- 18.2	0.769	E	F	#	0.00067	

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

REPORT DATE: 7/5/2011

Location: 1008 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	6.9 - 16.9	712		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	6.9 - 16.9	8.5		F	#	0.4	
Calcium	mg/L	03/24/2011	N001	6.9 - 16.9	399		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	6.9 - 16.9	250		F	#	3.3	
Magnesium	mg/L	03/24/2011	N001	6.9 - 16.9	915		F	#	2.2	
Manganese	mg/L	03/24/2011	N001	6.9 - 16.9	4.04		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	6.9 - 16.9	18.4		F	#	0.5	
Oxidation Reduction Potential	mV	03/24/2011	N001	6.9 - 16.9	79.6		F	#		
pH	s.u.	03/24/2011	N001	6.9 - 16.9	6.99		F	#		
Potassium	mg/L	03/24/2011	N001	6.9 - 16.9	59		F	#	1	
Selenium	mg/L	03/24/2011	N001	6.9 - 16.9	0.0231		F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	6.9 - 16.9	2570		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	6.9 - 16.9	14197		F	#		
Strontium	mg/L	03/24/2011	N001	6.9 - 16.9	8.39		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	6.9 - 16.9	8070		F	#	100	
Temperature	C	03/24/2011	N001	6.9 - 16.9	11.03		F	#		
Turbidity	NTU	03/24/2011	N001	6.9 - 16.9	2.22		F	#		
Uranium	mg/L	03/24/2011	N001	6.9 - 16.9	1.28		F	#	0.00134	

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

REPORT DATE: 7/5/2011

Location: 1009 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	7.4 - 17.4	276		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	7.4 - 17.4	10.8		JF	#	0.4	
Calcium	mg/L	03/23/2011	N001	7.4 - 17.4	336		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	7.4 - 17.4	26.8		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	7.4 - 17.4	179		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	7.4 - 17.4	0.933		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	7.4 - 17.4	0.05	U	F	#	0.05	
Oxidation Reduction Potential	mV	03/23/2011	N001	7.4 - 17.4	63.2		F	#		
pH	s.u.	03/23/2011	N001	7.4 - 17.4	7		F	#		
Potassium	mg/L	03/23/2011	N001	7.4 - 17.4	19.7		F	#	0.05	
Selenium	mg/L	03/23/2011	N001	7.4 - 17.4	0.049		F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	7.4 - 17.4	261		F	#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	7.4 - 17.4	3398		F	#		
Strontium	mg/L	03/23/2011	N001	7.4 - 17.4	3.58		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	7.4 - 17.4	1830		F	#	10	
Temperature	C	03/23/2011	N001	7.4 - 17.4	12.83		F	#		
Turbidity	NTU	03/23/2011	N001	7.4 - 17.4	3.93		F	#		
Uranium	mg/L	03/23/2011	N001	7.4 - 17.4	0.246		F	#	0.000335	

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

REPORT DATE: 7/5/2011

Location: 1089 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.8 - 14.8	470			#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.8 - 14.8	0.176			#	0.016	
Calcium	mg/L	03/24/2011	N001	4.8 - 14.8	388			#	0.05	
Chloride	mg/L	03/24/2011	N001	4.8 - 14.8	132			#	0.66	
Magnesium	mg/L	03/24/2011	N001	4.8 - 14.8	305			#	0.11	
Manganese	mg/L	03/24/2011	N001	4.8 - 14.8	0.0537			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.8 - 14.8	3.75			#	0.1	
Oxidation Reduction Potential	mV	03/24/2011	N001	4.8 - 14.8	102.7			#		
pH	s.u.	03/24/2011	N001	4.8 - 14.8	7.32			#		
Potassium	mg/L	03/24/2011	N001	4.8 - 14.8	38.3			#	1	
Selenium	mg/L	03/24/2011	N001	4.8 - 14.8	0.046			#	0.0015	
Sodium	mg/L	03/24/2011	N001	4.8 - 14.8	1790			#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	4.8 - 14.8	9231			#		
Strontium	mg/L	03/24/2011	N001	4.8 - 14.8	5.85			#	0.001	
Sulfate	mg/L	03/24/2011	N001	4.8 - 14.8	4760			#	100	
Temperature	C	03/24/2011	N001	4.8 - 14.8	10.69			#		
Turbidity	NTU	03/24/2011	N001	4.8 - 14.8	5.16			#		
Uranium	mg/L	03/24/2011	N001	4.8 - 14.8	0.232			#	0.000335	

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

REPORT DATE: 7/5/2011

Location: 1104 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	-	600			#		
Ammonia Total as N	mg/L	03/24/2011	N001	-	0.124			#	0.016	
Calcium	mg/L	03/24/2011	N001	-	354			#	0.05	
Chloride	mg/L	03/24/2011	N001	-	204			#	1.32	
Magnesium	mg/L	03/24/2011	N001	-	583			#	2.2	
Manganese	mg/L	03/24/2011	N001	-	0.04	U		#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	-	16.3			#	1	
Oxidation Reduction Potential	mV	03/24/2011	N001	-	99.3			#		
pH	s.u.	03/24/2011	N001	-	7.31			#		
Potassium	mg/L	03/24/2011	N001	-	46.9			#	1	
Selenium	mg/L	03/24/2011	N001	-	0.0311			#	0.0015	
Sodium	mg/L	03/24/2011	N001	-	2210			#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	-	11701			#		
Strontium	mg/L	03/24/2011	N001	-	6.46			#	0.001	
Sulfate	mg/L	03/24/2011	N001	-	7970			#	100	
Temperature	C	03/24/2011	N001	-	11.31			#		
Turbidity	NTU	03/24/2011	N001	-	4.27			#		
Uranium	mg/L	03/24/2011	N001	-	0.595			#	0.00067	

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

REPORT DATE: 7/5/2011

Location: 1105 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	4.5 - 14.5	599		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	4.5 - 14.5	12.7		F	#	0.4	
Calcium	mg/L	03/23/2011	N001	4.5 - 14.5	516		F	#	1	
Chloride	mg/L	03/23/2011	N001	4.5 - 14.5	237		F	#	1.32	
Magnesium	mg/L	03/23/2011	N001	4.5 - 14.5	1080		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	4.5 - 14.5	2.51		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	4.5 - 14.5	60		F	#	5	
Oxidation Reduction Potential	mV	03/23/2011	N001	4.5 - 14.5	132.5		F	#		
pH	s.u.	03/23/2011	N001	4.5 - 14.5	6.96		F	#		
Potassium	mg/L	03/23/2011	N001	4.5 - 14.5	59.4		F	#	1	
Selenium	mg/L	03/23/2011	N001	4.5 - 14.5	0.31		F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	4.5 - 14.5	1410		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	4.5 - 14.5	11603		F	#		
Strontium	mg/L	03/23/2011	N001	4.5 - 14.5	8.08		F	#	0.02	
Sulfate	mg/L	03/23/2011	N001	4.5 - 14.5	8060		F	#	100	
Temperature	C	03/23/2011	N001	4.5 - 14.5	12.8		F	#		
Turbidity	NTU	03/23/2011	N001	4.5 - 14.5	1.96		F	#		
Uranium	mg/L	03/23/2011	N001	4.5 - 14.5	1.57		F	#	0.00268	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	0 - 0	199			#		
Ammonia Total as N	mg/L	03/23/2011	N001	0 - 0	5.03			#	0.4	
Calcium	mg/L	03/23/2011	N001	0 - 0	125			#	0.05	
Chloride	mg/L	03/23/2011	N001	0 - 0	34			#	0.66	
Magnesium	mg/L	03/23/2011	N001	0 - 0	85.6			#	0.11	
Manganese	mg/L	03/23/2011	N001	0 - 0	0.232			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	0 - 0	27.3			#	1	
Oxidation Reduction Potential	mV	03/23/2011	N001	0 - 0	78.8			#		
pH	s.u.	03/23/2011	N001	0 - 0	7.2			#		
Potassium	mg/L	03/23/2011	N001	0 - 0	5.9			#	0.05	
Selenium	mg/L	03/23/2011	N001	0 - 0	0.0115			#	0.0015	
Sodium	mg/L	03/23/2011	N001	0 - 0	139			#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	0 - 0	1833			#		
Strontium	mg/L	03/23/2011	N001	0 - 0	1.43			#	0.001	
Sulfate	mg/L	03/23/2011	N001	0 - 0	617			#	10	
Temperature	C	03/23/2011	N001	0 - 0	10.08			#		
Turbidity	NTU	03/23/2011	N001	0 - 0	1.17			#		
Uranium	mg/L	03/23/2011	N001	0 - 0	0.0832			#	0.000134	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	0 - 0	593			#		
Ammonia Total as N	mg/L	03/23/2011	N001	0 - 0	0.0774	J	U	#	0.016	
Calcium	mg/L	03/23/2011	N001	0 - 0	374			#	0.05	
Chloride	mg/L	03/23/2011	N001	0 - 0	228			#	1.32	
Magnesium	mg/L	03/23/2011	N001	0 - 0	532			#	2.2	
Manganese	mg/L	03/23/2011	N001	0 - 0	0.04	U		#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	0 - 0	24.9			#	1	
Oxidation Reduction Potential	mV	03/23/2011	N001	0 - 0	121.1			#		
pH	s.u.	03/23/2011	N001	0 - 0	7.16			#		
Potassium	mg/L	03/23/2011	N001	0 - 0	33.1			#	1	
Selenium	mg/L	03/23/2011	N001	0 - 0	0.616			#	0.015	
Sodium	mg/L	03/23/2011	N001	0 - 0	1630			#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	0 - 0	9988			#		
Strontium	mg/L	03/23/2011	N001	0 - 0	9.72			#	0.001	
Sulfate	mg/L	03/23/2011	N001	0 - 0	4790			#	100	
Temperature	C	03/23/2011	N001	0 - 0	11.38			#		
Turbidity	NTU	03/23/2011	N001	0 - 0	3.88			#		
Uranium	mg/L	03/23/2011	N001	0 - 0	0.51			#	0.00067	

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

REPORT DATE: 7/5/2011

Location: 1111 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	7 - 12	1164		F #		
Ammonia Total as N	mg/L	03/23/2011	N001	7 - 12	0.122		F #	0.016	
Calcium	mg/L	03/23/2011	N001	7 - 12	418		F #	0.05	
Chloride	mg/L	03/23/2011	N001	7 - 12	461		F #	6.6	
Magnesium	mg/L	03/23/2011	N001	7 - 12	1290		F #	2.2	
Manganese	mg/L	03/23/2011	N001	7 - 12	0.487		F #	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	7 - 12	38.8		F #	1	
Oxidation Reduction Potential	mV	03/23/2011	N001	7 - 12	146.7		F #		
pH	s.u.	03/23/2011	N001	7 - 12	6.88		F #		
Potassium	mg/L	03/23/2011	N001	7 - 12	49.2		F #	1	
Selenium	mg/L	03/23/2011	N001	7 - 12	0.571		F #	0.03	
Sodium	mg/L	03/23/2011	N001	7 - 12	2880		F #	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	7 - 12	16910		F #		
Strontium	mg/L	03/23/2011	N001	7 - 12	14.2		F #	0.02	
Sulfate	mg/L	03/23/2011	N001	7 - 12	10500		F #	100	
Temperature	C	03/23/2011	N001	7 - 12	10.04		F #		
Turbidity	NTU	03/23/2011	N001	7 - 12	3.46		F #		
Uranium	mg/L	03/23/2011	N001	7 - 12	1.23		F #	0.00134	

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

REPORT DATE: 7/5/2011

Location: 1112 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	7 - 12	591		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	7 - 12	22.9		F	#	0.8	
Calcium	mg/L	03/23/2011	N001	7 - 12	481		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	7 - 12	395		F	#	6.6	
Magnesium	mg/L	03/23/2011	N001	7 - 12	1800		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	7 - 12	2.88		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	7 - 12	452		F	#	5	
Oxidation Reduction Potential	mV	03/23/2011	N001	7 - 12	157.7		F	#		
pH	s.u.	03/23/2011	N001	7 - 12	6.92		F	#		
Potassium	mg/L	03/23/2011	N001	7 - 12	102		F	#	1	
Selenium	mg/L	03/23/2011	N001	7 - 12	3.07		F	#	0.06	
Sodium	mg/L	03/23/2011	N001	7 - 12	2730		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	7 - 12	17905		F	#		
Strontium	mg/L	03/23/2011	N001	7 - 12	11.4		F	#	0.02	
Sulfate	mg/L	03/23/2011	N001	7 - 12	10400		F	#	100	
Temperature	C	03/23/2011	N001	7 - 12	8.92		F	#		
Turbidity	NTU	03/23/2011	N001	7 - 12	2.63		F	#		
Uranium	mg/L	03/23/2011	N001	7 - 12	1.87		F	#	0.00268	

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

REPORT DATE: 7/5/2011

Location: 1113 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	0001	7	-	12		F	#		
Ammonia Total as N	mg/L	03/22/2011	0001	7	-	12		F	#	0.016	
Calcium	mg/L	03/22/2011	0001	7	-	12		F	#	0.05	
Chloride	mg/L	03/22/2011	0001	7	-	12		F	#	0.66	
Magnesium	mg/L	03/22/2011	0001	7	-	12		F	#	2.2	
Manganese	mg/L	03/22/2011	0001	7	-	12	U	F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	7	-	12		F	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	7	-	12		F	#		
pH	s.u.	03/22/2011	N001	7	-	12		F	#		
Potassium	mg/L	03/22/2011	0001	7	-	12		F	#	1	
Selenium	mg/L	03/22/2011	0001	7	-	12		F	#	0.0015	
Sodium	mg/L	03/22/2011	0001	7	-	12		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	7	-	12		F	#		
Strontium	mg/L	03/22/2011	0001	7	-	12		F	#	0.02	
Sulfate	mg/L	03/22/2011	0001	7	-	12		F	#	100	
Temperature	C	03/22/2011	N001	7	-	12		F	#		
Turbidity	NTU	03/22/2011	N001	7	-	12		F	#		
Uranium	mg/L	03/22/2011	0001	7	-	12		F	#	0.00134	

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

REPORT DATE: 7/5/2011

Location: 1114 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	7 - 12	562		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	7 - 12	97.5		F	#	4	
Ammonia Total as N	mg/L	03/22/2011	N002	7 - 12	103		F	#	8	
Calcium	mg/L	03/22/2011	N001	7 - 12	273		F	#	0.05	
Calcium	mg/L	03/22/2011	N002	7 - 12	273		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	7 - 12	140		F	#	0.66	
Chloride	mg/L	03/22/2011	N002	7 - 12	163		F	#	0.66	
Magnesium	mg/L	03/22/2011	N001	7 - 12	487		F	#	0.11	
Magnesium	mg/L	03/22/2011	N002	7 - 12	512		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	7 - 12	3.09		F	#	0.002	
Manganese	mg/L	03/22/2011	N002	7 - 12	3.24		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	7 - 12	131		F	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N002	7 - 12	121		F	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	7 - 12	166.4		F	#		
pH	s.u.	03/22/2011	N001	7 - 12	6.97		F	#		
Potassium	mg/L	03/22/2011	N001	7 - 12	52.6		F	#	1	
Potassium	mg/L	03/22/2011	N002	7 - 12	54.8		F	#	1	
Selenium	mg/L	03/22/2011	N001	7 - 12	0.0149		F	#	0.0015	
Selenium	mg/L	03/22/2011	N002	7 - 12	0.0164	N	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	7 - 12	622		F	#	2	
Sodium	mg/L	03/22/2011	N002	7 - 12	655		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	7 - 12	6783		F	#		
Strontium	mg/L	03/22/2011	N001	7 - 12	4.71		F	#	0.001	
Strontium	mg/L	03/22/2011	N002	7 - 12	4.67		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	7 - 12	3190		F	#	100	

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

REPORT DATE: 7/5/2011

Location: 1114 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Sulfate	mg/L	03/22/2011	N002	7 - 12	3160		F	#	100	
Temperature	C	03/22/2011	N001	7 - 12	8.45		F	#		
Turbidity	NTU	03/22/2011	N001	7 - 12	1.3		F	#		
Uranium	mg/L	03/22/2011	N001	7 - 12	0.73		F	#	0.00134	
Uranium	mg/L	03/22/2011	N002	7 - 12	0.667	E	F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 1115 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	7	-	12		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	7	-	12		F	#	4	
Ammonia Total as N	mg/L	03/22/2011	N002	7	-	12		F	#	8	
Calcium	mg/L	03/22/2011	N001	7	-	12		F	#	0.05	
Calcium	mg/L	03/22/2011	N002	7	-	12		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	7	-	12		JF	#	1.32	
Chloride	mg/L	03/22/2011	N002	7	-	12		JF	#	6.6	
Magnesium	mg/L	03/22/2011	N001	7	-	12		F	#	1.1	
Magnesium	mg/L	03/22/2011	N002	7	-	12		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	7	-	12		F	#	0.02	
Manganese	mg/L	03/22/2011	N002	7	-	12		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	7	-	12		F	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N002	7	-	12		F	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	7	-	12	155.2	F	#		
pH	s.u.	03/22/2011	N001	7	-	12	6.68	F	#		
Potassium	mg/L	03/22/2011	N001	7	-	12	102	F	#	0.5	
Potassium	mg/L	03/22/2011	N002	7	-	12	101	F	#	1	
Selenium	mg/L	03/22/2011	N001	7	-	12	0.0679	N	JF	#	0.0015
Selenium	mg/L	03/22/2011	N002	7	-	12	0.0611	N	JF	#	0.0075
Sodium	mg/L	03/22/2011	N001	7	-	12	1290	F	#	1	
Sodium	mg/L	03/22/2011	N002	7	-	12	1290	F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	7	-	12	12827	F	#		
Strontium	mg/L	03/22/2011	N001	7	-	12	7.36	F	#	0.001	
Strontium	mg/L	03/22/2011	N002	7	-	12	7.8	F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	7	-	12	6910	F	#	50	

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

REPORT DATE: 7/5/2011

Location: 1115 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Sulfate	mg/L	03/22/2011	N002	7 - 12	6770		F	#	100	
Temperature	C	03/22/2011	N001	7 - 12	10.17		F	#		
Turbidity	NTU	03/22/2011	N001	7 - 12	2.22		F	#		
Uranium	mg/L	03/22/2011	N001	7 - 12	1.1		F	#	0.00134	
Uranium	mg/L	03/22/2011	N002	7 - 12	1.13	E	F	#	0.000335	

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

REPORT DATE: 7/5/2011

Location: 1117 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	7 - 12	82		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	7 - 12	0.242		F	#	0.016	
Calcium	mg/L	03/22/2011	N001	7 - 12	62.9		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	7 - 12	12.5		F	#	0.66	
Magnesium	mg/L	03/22/2011	N001	7 - 12	12.8		F	#	0.11	
Manganese	mg/L	03/22/2011	N001	7 - 12	0.652		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	7 - 12	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/22/2011	N001	7 - 12	-33.8		F	#		
pH	s.u.	03/22/2011	N001	7 - 12	7.47		F	#		
Potassium	mg/L	03/22/2011	N001	7 - 12	2.01	B	F	#	0.05	
Selenium	mg/L	03/22/2011	N001	7 - 12	0.0015	UN	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	7 - 12	41.5		F	#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	7 - 12	629		F	#		
Strontium	mg/L	03/22/2011	N001	7 - 12	0.693		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	7 - 12	154		F	#	1	
Temperature	C	03/22/2011	N001	7 - 12	9.43		F	#		
Turbidity	NTU	03/22/2011	N001	7 - 12	2.1		F	#		
Uranium	mg/L	03/22/2011	N001	7 - 12	0.0101		F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1118 TREATMENT SYSTEM Sump - seep vault

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	0 - 0	942			#		
Ammonia Total as N	mg/L	03/23/2011	N001	0 - 0	0.0755	J	U	#	0.016	
Calcium	mg/L	03/23/2011	N001	0 - 0	425			#	0.05	
Chloride	mg/L	03/23/2011	N001	0 - 0	348			#	3.3	
Magnesium	mg/L	03/23/2011	N001	0 - 0	958			#	1.1	
Manganese	mg/L	03/23/2011	N001	0 - 0	0.02	U		#	0.02	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	0 - 0	92.5			#	5	
Oxidation Reduction Potential	mV	03/23/2011	N001	0 - 0	133.9			#		
pH	s.u.	03/23/2011	N001	0 - 0	7.47			#		
Potassium	mg/L	03/23/2011	N001	0 - 0	41.8			#	0.5	
Selenium	mg/L	03/23/2011	N001	0 - 0	0.313	N		#	0.015	
Sodium	mg/L	03/23/2011	N001	0 - 0	1730			#	1	
Specific Conductance	µmhos/cm	03/23/2011	N001	0 - 0	12166			#		
Strontium	mg/L	03/23/2011	N001	0 - 0	9.86			#	0.001	
Sulfate	mg/L	03/23/2011	N001	0 - 0	6890			#	50	
Temperature	C	03/23/2011	N001	0 - 0	9.48			#		
Turbidity	NTU	03/23/2011	N001	0 - 0	3.02			#		
Uranium	mg/L	03/23/2011	N001	0 - 0	0.717			#	0.00067	

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

REPORT DATE: 7/5/2011

Location: 1128 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	6.81	- 11.81	743		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	6.81	- 11.81	470		F	#	4	
Calcium	mg/L	03/22/2011	N001	6.81	- 11.81	447		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	6.81	- 11.81	332		F	#	3.3	
Magnesium	mg/L	03/22/2011	N001	6.81	- 11.81	1850		F	#	1.1	
Manganese	mg/L	03/22/2011	N001	6.81	- 11.81	5.33		F	#	0.02	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	6.81	- 11.81	535		F	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	6.81	- 11.81	190.3		F	#		
pH	s.u.	03/22/2011	N001	6.81	- 11.81	6.58		F	#		
Potassium	mg/L	03/22/2011	N001	6.81	- 11.81	195		F	#	0.5	
Selenium	mg/L	03/22/2011	N001	6.81	- 11.81	0.0223	N	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	6.81	- 11.81	2040		F	#	1	
Specific Conductance	µmhos/cm	03/22/2011	N001	6.81	- 11.81	18797		F	#		
Strontium	mg/L	03/22/2011	N001	6.81	- 11.81	12.1		F	#	0.01	
Sulfate	mg/L	03/22/2011	N001	6.81	- 11.81	10000		F	#	100	
Temperature	C	03/22/2011	N001	6.81	- 11.81	10.61		F	#		
Turbidity	NTU	03/22/2011	N001	6.81	- 11.81	3.37		F	#		
Uranium	mg/L	03/22/2011	N001	6.81	- 11.81	1.49		F	#	0.00134	

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

REPORT DATE: 7/5/2011

Location: 1132 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	6.07	- 11.07	118		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	6.07	- 11.07	1.12		F	#	0.016	
Calcium	mg/L	03/22/2011	N001	6.07	- 11.07	50.7		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	6.07	- 11.07	13		F	#	0.66	
Magnesium	mg/L	03/22/2011	N001	6.07	- 11.07	18.1		F	#	0.11	
Manganese	mg/L	03/22/2011	N001	6.07	- 11.07	0.268		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	6.07	- 11.07	0.67		F	#	0.05	
Oxidation Reduction Potential	mV	03/22/2011	N001	6.07	- 11.07	99.6		F	#		
pH	s.u.	03/22/2011	N001	6.07	- 11.07	7.69		F	#		
Potassium	mg/L	03/22/2011	N001	6.07	- 11.07	2.22	B	F	#	0.05	
Selenium	mg/L	03/22/2011	N001	6.07	- 11.07	0.0015	UN	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	6.07	- 11.07	39.5		F	#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	6.07	- 11.07	629		F	#		
Strontium	mg/L	03/22/2011	N001	6.07	- 11.07	0.626		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	6.07	- 11.07	154		F	#	1	
Temperature	C	03/22/2011	N001	6.07	- 11.07	8.91		F	#		
Turbidity	NTU	03/22/2011	N001	6.07	- 11.07	5.14		F	#		
Uranium	mg/L	03/22/2011	N001	6.07	- 11.07	0.0221		F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 1134 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	8.16	- 13.16	141		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	8.16	- 13.16	1.07		F	#	0.016	
Calcium	mg/L	03/22/2011	N001	8.16	- 13.16	104		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	8.16	- 13.16	17.5		F	#	0.66	
Magnesium	mg/L	03/22/2011	N001	8.16	- 13.16	23.1		F	#	0.11	
Manganese	mg/L	03/22/2011	N001	8.16	- 13.16	0.494		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	8.16	- 13.16	5.14		F	#	0.1	
Oxidation Reduction Potential	mV	03/22/2011	N001	8.16	- 13.16	106.6		F	#		
pH	s.u.	03/22/2011	N001	8.16	- 13.16	7.4		F	#		
Potassium	mg/L	03/22/2011	N001	8.16	- 13.16	2.67	B	F	#	0.05	
Selenium	mg/L	03/22/2011	N001	8.16	- 13.16	0.0015	UN	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	8.16	- 13.16	59.5		F	#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	8.16	- 13.16	1001		F	#		
Strontium	mg/L	03/22/2011	N001	8.16	- 13.16	1.14		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	8.16	- 13.16	342		F	#	1	
Temperature	C	03/22/2011	N001	8.16	- 13.16	10.11		F	#		
Turbidity	NTU	03/22/2011	N001	8.16	- 13.16	4.42		F	#		
Uranium	mg/L	03/22/2011	N001	8.16	- 13.16	0.0187		F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 1135 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	6.39 - 11.39	300		F	#		
Ammonia Total as N	mg/L	03/24/2011	0001	6.39 - 11.39	0.0642	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	0001	6.39 - 11.39	338		F	#	0.05	
Chloride	mg/L	03/24/2011	0001	6.39 - 11.39	90.9		F	#	0.66	
Magnesium	mg/L	03/24/2011	0001	6.39 - 11.39	206		F	#	0.11	
Manganese	mg/L	03/24/2011	0001	6.39 - 11.39	2.05		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	0001	6.39 - 11.39	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	6.39 - 11.39	-35		F	#		
pH	s.u.	03/24/2011	N001	6.39 - 11.39	7.13		F	#		
Potassium	mg/L	03/24/2011	0001	6.39 - 11.39	22.2		F	#	0.5	
Selenium	mg/L	03/24/2011	0001	6.39 - 11.39	0.0015	UN	F	#	0.0015	
Sodium	mg/L	03/24/2011	0001	6.39 - 11.39	1310		F	#	1	
Specific Conductance	µmhos/cm	03/24/2011	N001	6.39 - 11.39	7243		F	#		
Strontium	mg/L	03/24/2011	0001	6.39 - 11.39	4.42		F	#	0.001	
Sulfate	mg/L	03/24/2011	0001	6.39 - 11.39	4140		F	#	20	
Temperature	C	03/24/2011	N001	6.39 - 11.39	10.88		F	#		
Turbidity	NTU	03/24/2011	N001	6.39 - 11.39	76		F	#		
Uranium	mg/L	03/24/2011	0001	6.39 - 11.39	0.141		F	#	0.000335	

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

REPORT DATE: 7/5/2011

Location: 1136 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	6.29 - 11.29	320		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	6.29 - 11.29	0.0411	J	UF	#	0.016	
Calcium	mg/L	03/24/2011	N001	6.29 - 11.29	85.4		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	6.29 - 11.29	19.3		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	6.29 - 11.29	29.1		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	6.29 - 11.29	1.03		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	6.29 - 11.29	0.252		F	#	0.05	
Oxidation Reduction Potential	mV	03/24/2011	N001	6.29 - 11.29	21.2		F	#		
pH	s.u.	03/24/2011	N001	6.29 - 11.29	7.24		F	#		
Potassium	mg/L	03/24/2011	N001	6.29 - 11.29	2.64	B	F	#	0.05	
Selenium	mg/L	03/24/2011	N001	6.29 - 11.29	0.0015	UN	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	6.29 - 11.29	94.1		F	#	0.1	
Specific Conductance	µmhos/cm	03/24/2011	N001	6.29 - 11.29	1085		F	#		
Strontium	mg/L	03/24/2011	N001	6.29 - 11.29	0.972		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	6.29 - 11.29	370		F	#	1	
Temperature	C	03/24/2011	N001	6.29 - 11.29	11.09		F	#		
Turbidity	NTU	03/24/2011	N001	6.29 - 11.29	1.6		F	#		
Uranium	mg/L	03/24/2011	N001	6.29 - 11.29	0.00693		F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 1137 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
						Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	9.4 - 14.4	255		F #		
Ammonia Total as N	mg/L	03/25/2011	N001	9.4 - 14.4	0.567		F #	0.016	
Calcium	mg/L	03/25/2011	N001	9.4 - 14.4	124		F #	0.05	
Chloride	mg/L	03/25/2011	N001	9.4 - 14.4	48.4		F #	0.66	
Magnesium	mg/L	03/25/2011	N001	9.4 - 14.4	184		F #	0.11	
Manganese	mg/L	03/25/2011	N001	9.4 - 14.4	0.924		F #	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	9.4 - 14.4	3.99		F #	0.1	
Oxidation Reduction Potential	mV	03/25/2011	N001	9.4 - 14.4	194.5		F #		
pH	s.u.	03/25/2011	N001	9.4 - 14.4	7.54		F #		
Potassium	mg/L	03/25/2011	N001	9.4 - 14.4	12		F #	0.25	
Selenium	mg/L	03/25/2011	N001	9.4 - 14.4	0.00278	BN	F #	0.0015	
Sodium	mg/L	03/25/2011	N001	9.4 - 14.4	592		F #	0.5	
Specific Conductance	µmhos/cm	03/25/2011	N001	9.4 - 14.4	3907		F #		
Strontium	mg/L	03/25/2011	N001	9.4 - 14.4	1.72		F #	0.001	
Sulfate	mg/L	03/25/2011	N001	9.4 - 14.4	2010		F #	10	
Temperature	C	03/25/2011	N001	9.4 - 14.4	8.84		F #		
Turbidity	NTU	03/25/2011	N001	9.4 - 14.4	9.88		F #		
Uranium	mg/L	03/25/2011	N001	9.4 - 14.4	0.172		F #	0.000335	

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

REPORT DATE: 7/5/2011

Location: 1138 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	8.09	- 13.09	288		F	#		
Ammonia Total as N	mg/L	03/25/2011	N001	8.09	- 13.09	0.271		F	#	0.016	
Calcium	mg/L	03/25/2011	N001	8.09	- 13.09	217		F	#	0.05	
Chloride	mg/L	03/25/2011	N001	8.09	- 13.09	63.7		F	#	0.66	
Magnesium	mg/L	03/25/2011	N001	8.09	- 13.09	230		F	#	0.11	
Manganese	mg/L	03/25/2011	N001	8.09	- 13.09	1.11		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	8.09	- 13.09	6.22		F	#	0.1	
Oxidation Reduction Potential	mV	03/25/2011	N001	8.09	- 13.09	221.3		F	#		
pH	s.u.	03/25/2011	N001	8.09	- 13.09	7.42		F	#		
Potassium	mg/L	03/25/2011	N001	8.09	- 13.09	17.8		F	#	0.25	
Selenium	mg/L	03/25/2011	N001	8.09	- 13.09	0.00516	N	F	#	0.0015	
Sodium	mg/L	03/25/2011	N001	8.09	- 13.09	606		F	#	0.5	
Specific Conductance	µmhos/cm	03/25/2011	N001	8.09	- 13.09	4449		F	#		
Strontium	mg/L	03/25/2011	N001	8.09	- 13.09	2.68		F	#	0.001	
Sulfate	mg/L	03/25/2011	N001	8.09	- 13.09	2450		F	#	10	
Temperature	C	03/25/2011	N001	8.09	- 13.09	9.1		F	#		
Turbidity	NTU	03/25/2011	N001	8.09	- 13.09	3.22		F	#		
Uranium	mg/L	03/25/2011	N001	8.09	- 13.09	0.237		F	#	0.000335	

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

REPORT DATE: 7/5/2011

Location: 1139 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	6.19	- 11.19	540		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	6.19	- 11.19	0.13		F	#	0.016	
Calcium	mg/L	03/24/2011	N001	6.19	- 11.19	463		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	6.19	- 11.19	279		F	#	1.32	
Magnesium	mg/L	03/24/2011	N001	6.19	- 11.19	922		F	#	0.55	
Manganese	mg/L	03/24/2011	N001	6.19	- 11.19	0.728		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	6.19	- 11.19	29.9		F	#	1	
Oxidation Reduction Potential	mV	03/24/2011	N001	6.19	- 11.19	97.4		F	#		
pH	s.u.	03/24/2011	N001	6.19	- 11.19	7.17		F	#		
Potassium	mg/L	03/24/2011	N001	6.19	- 11.19	39.1		F	#	0.25	
Selenium	mg/L	03/24/2011	N001	6.19	- 11.19	0.0252	N	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	6.19	- 11.19	2020		F	#	0.5	
Specific Conductance	µmhos/cm	03/24/2011	N001	6.19	- 11.19	11197		F	#		
Strontium	mg/L	03/24/2011	N001	6.19	- 11.19	7.75		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	6.19	- 11.19	6740		F	#	50	
Temperature	C	03/24/2011	N001	6.19	- 11.19	9.56		F	#		
Turbidity	NTU	03/24/2011	N001	6.19	- 11.19	6.42		F	#		
Uranium	mg/L	03/24/2011	N001	6.19	- 11.19	0.845		F	#	0.00134	

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

REPORT DATE: 7/5/2011

Location: 1140 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	7.6	-	12.6		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	0.4	
Calcium	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	3.3	
Magnesium	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	1.1	
Manganese	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	0.02	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	5	
Oxidation Reduction Potential	mV	03/23/2011	N001	7.6	-	12.6		F	#		
pH	s.u.	03/23/2011	N001	7.6	-	12.6		F	#		
Potassium	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	0.5	
Selenium	mg/L	03/23/2011	N001	7.6	-	12.6	N	F	#	0.06	
Sodium	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	1	
Specific Conductance	µmhos/cm	03/23/2011	N001	7.6	-	12.6		F	#		
Strontium	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	100	
Temperature	C	03/23/2011	N001	7.6	-	12.6		F	#		
Turbidity	NTU	03/23/2011	N001	7.6	-	12.6		F	#		
Uranium	mg/L	03/23/2011	N001	7.6	-	12.6		F	#	0.00268	

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

REPORT DATE: 7/5/2011

Location: 1141 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	5.6	- 10.6	420		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	5.6	- 10.6	10		F	#	0.4	
Calcium	mg/L	03/23/2011	N001	5.6	- 10.6	494		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	5.6	- 10.6	133		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	5.6	- 10.6	657		F	#	0.55	
Manganese	mg/L	03/23/2011	N001	5.6	- 10.6	1.89		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	5.6	- 10.6	58.5		F	#	5	
Oxidation Reduction Potential	mV	03/23/2011	N001	5.6	- 10.6	141.6		F	#		
pH	s.u.	03/23/2011	N001	5.6	- 10.6	6.93		F	#		
Potassium	mg/L	03/23/2011	N001	5.6	- 10.6	48.5		F	#	0.25	
Selenium	mg/L	03/23/2011	N001	5.6	- 10.6	0.706	N	F	#	0.03	
Sodium	mg/L	03/23/2011	N001	5.6	- 10.6	844		F	#	0.5	
Specific Conductance	µmhos/cm	03/23/2011	N001	5.6	- 10.6	8156		F	#		
Strontium	mg/L	03/23/2011	N001	5.6	- 10.6	6.36		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	5.6	- 10.6	4910		F	#	50	
Temperature	C	03/23/2011	N001	5.6	- 10.6	11.21		F	#		
Turbidity	NTU	03/23/2011	N001	5.6	- 10.6	2.23		F	#		
Uranium	mg/L	03/23/2011	N001	5.6	- 10.6	1.07		F	#	0.00134	

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

REPORT DATE: 7/5/2011

Location: 1142 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
						Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	9 - 14	119		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	9 - 14	0.124		F	#	0.016	
Calcium	mg/L	03/23/2011	N001	9 - 14	60.5		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	9 - 14	13		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	9 - 14	12.4		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	9 - 14	0.355		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	9 - 14	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/23/2011	N001	9 - 14	-50.4		F	#		
pH	s.u.	03/23/2011	N001	9 - 14	7.6		F	#		
Potassium	mg/L	03/23/2011	N001	9 - 14	2.13	B	F	#	0.05	
Selenium	mg/L	03/23/2011	N001	9 - 14	0.0015	UN	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	9 - 14	37.6		F	#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	9 - 14	579		F	#		
Strontium	mg/L	03/23/2011	N001	9 - 14	0.69		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	9 - 14	144		F	#	1	
Temperature	C	03/23/2011	N001	9 - 14	10.36		F	#		
Turbidity	NTU	03/23/2011	N001	9 - 14	1.27		F	#		
Uranium	mg/L	03/23/2011	N001	9 - 14	0.00574		F	#	0.000067	

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

REPORT DATE: 7/5/2011

Location: 1143 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Qualifiers			Detection Limit	Uncertainty
							Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	8.3	-	13.3		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	8.3	-	13.3	0.0502	J	UF	#	0.016
Calcium	mg/L	03/24/2011	N001	8.3	-	13.3	232		F	#	0.05
Chloride	mg/L	03/24/2011	N001	8.3	-	13.3	89.8		F	#	0.66
Magnesium	mg/L	03/24/2011	N001	8.3	-	13.3	79		F	#	0.11
Manganese	mg/L	03/24/2011	N001	8.3	-	13.3	1.33		F	#	0.002
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	8.3	-	13.3	0.01	U	F	#	0.01
Oxidation Reduction Potential	mV	03/24/2011	N001	8.3	-	13.3	73.3		F	#	
pH	s.u.	03/24/2011	N001	8.3	-	13.3	7.39		F	#	
Potassium	mg/L	03/24/2011	N001	8.3	-	13.3	13.9		F	#	0.5
Selenium	mg/L	03/24/2011	N001	8.3	-	13.3	0.0015	UN	F	#	0.0015
Sodium	mg/L	03/24/2011	N001	8.3	-	13.3	1190		F	#	1
Specific Conductance	µmhos/cm	03/24/2011	N001	8.3	-	13.3	5879		F	#	
Strontium	mg/L	03/24/2011	N001	8.3	-	13.3	2.86		F	#	0.001
Sulfate	mg/L	03/24/2011	N001	8.3	-	13.3	3000		F	#	20
Temperature	C	03/24/2011	N001	8.3	-	13.3	12.08		F	#	
Turbidity	NTU	03/24/2011	N001	8.3	-	13.3	7.64		F	#	
Uranium	mg/L	03/24/2011	N001	8.3	-	13.3	0.0722		F	#	0.000134

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

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.

I Increased detection limit due to required dilution.
J Estimated
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P > 25% difference in detected pesticide or Aroclor concentrations between 2 columns.
U Analytical result below detection limit.
W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X,Y,Z Laboratory defined qualifier, see case narrative.

DATA QUALIFIERS:

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

QA QUALIFIER:

Validated according to quality assurance guidelines.

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Groundwater Quality Data Terrace Locations

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

REPORT DATE: 7/6/2011

Location: 0600 WELL Just N of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	29 - 48.8	1306		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	29 - 48.8	10.8		FQ	#	0.4	
Calcium	mg/L	03/24/2011	N001	29 - 48.8	266		FQ	#	0.05	
Chloride	mg/L	03/24/2011	N001	29 - 48.8	2410		FQ	#	66	
Magnesium	mg/L	03/24/2011	N001	29 - 48.8	270		FQ	#	0.11	
Manganese	mg/L	03/24/2011	N001	29 - 48.8	0.24		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	29 - 48.8	84.8		FQ	#	1	
Oxidation Reduction Potential	mV	03/24/2011	N001	29 - 48.8	138		FQ	#		
pH	s.u.	03/24/2011	N001	29 - 48.8	6.8		FQ	#		
Potassium	mg/L	03/24/2011	N001	29 - 48.8	34		JFQ	#	2.5	
Selenium	mg/L	03/24/2011	N001	29 - 48.8	0.015	UE	FQ	#	0.015	
Sodium	mg/L	03/24/2011	N001	29 - 48.8	5690		FQ	#	5	
Specific Conductance	µmhos/cm	03/24/2011	N001	29 - 48.8	21783		FQ	#		
Strontium	mg/L	03/24/2011	N001	29 - 48.8	8.63		FQ	#	0.001	
Sulfate	mg/L	03/24/2011	N001	29 - 48.8	18700		FQ	#	100	
Temperature	C	03/24/2011	N001	29 - 48.8	15.14		FQ	#		
Turbidity	NTU	03/24/2011	N001	29 - 48.8	5.8		FQ	#		
Uranium	mg/L	03/24/2011	N001	29 - 48.8	0.76	*EN	FQ	#	0.00067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	27	-	47	2280		FQ	#		
Ammonia Total as N	mg/L	03/25/2011	N001	27	-	47	323		FQ	#	4	
Calcium	mg/L	03/25/2011	N001	27	-	47	455		FQ	#	0.05	
Chloride	mg/L	03/25/2011	N001	27	-	47	1060		FQ	#	6.6	
Magnesium	mg/L	03/25/2011	N001	27	-	47	2210		FQ	#	2.2	
Manganese	mg/L	03/25/2011	N001	27	-	47	1.79		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	27	-	47	5.17		FQ	#	0.1	
Oxidation Reduction Potential	mV	03/25/2011	N001	27	-	47	224.6		FQ	#		
pH	s.u.	03/25/2011	N001	27	-	47	6.47		FQ	#		
Potassium	mg/L	03/25/2011	N001	27	-	47	138		FQ	#	1	
Selenium	mg/L	03/25/2011	N001	27	-	47	0.0015	UE	FQ	#	0.0015	
Sodium	mg/L	03/25/2011	N001	27	-	47	4060		FQ	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	27	-	47	26087		FQ	#		
Strontium	mg/L	03/25/2011	N001	27	-	47	12.6		FQ	#	0.02	
Sulfate	mg/L	03/25/2011	N001	27	-	47	15100		FQ	#	100	
Temperature	C	03/25/2011	N001	27	-	47	14		FQ	#		
Turbidity	NTU	03/25/2011	N001	27	-	47	3.64		FQ	#		
Uranium	mg/L	03/25/2011	N001	27	-	47	0.451	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0603 WELL Just SE of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	25.9 - 35.9	150		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	25.9 - 35.9	834		F	#	20	
Calcium	mg/L	03/23/2011	N001	25.9 - 35.9	1040		F	#	1	
Chloride	mg/L	03/23/2011	N001	25.9 - 35.9	178		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	25.9 - 35.9	688		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	25.9 - 35.9	53.4		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	25.9 - 35.9	2100		F	#	20	
Oxidation Reduction Potential	mV	03/23/2011	N001	25.9 - 35.9	441.4		F	#		
pH	s.u.	03/23/2011	N001	25.9 - 35.9	6.22		F	#		
Potassium	mg/L	03/23/2011	N001	25.9 - 35.9	132		F	#	1	
Selenium	mg/L	03/23/2011	N001	25.9 - 35.9	0.0944	E	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	25.9 - 35.9	727		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	25.9 - 35.9	17724		F	#		
Strontium	mg/L	03/23/2011	N001	25.9 - 35.9	4.99		F	#	0.02	
Sulfate	mg/L	03/23/2011	N001	25.9 - 35.9	2810		F	#	10	
Temperature	C	03/23/2011	N001	25.9 - 35.9	16.01		F	#		
Turbidity	NTU	03/23/2011	N001	25.9 - 35.9	1.8		F	#		
Uranium	mg/L	03/23/2011	N001	25.9 - 35.9	0.00976	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0604 WELL Just W of radon cover borrow pit

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	62.7	- 72.7	1042		FQ	#		
Ammonia Total as N	mg/L	03/25/2011	0001	62.7	- 72.7	5.94		FQ	#	0.16	
Calcium	mg/L	03/25/2011	0001	62.7	- 72.7	539		FQ	#	1	
Chloride	mg/L	03/25/2011	0001	62.7	- 72.7	1920		FQ	#	66	
Magnesium	mg/L	03/25/2011	0001	62.7	- 72.7	1890		FQ	#	2.2	
Manganese	mg/L	03/25/2011	0001	62.7	- 72.7	0.773		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	0001	62.7	- 72.7	1590		FQ	#	20	
Oxidation Reduction Potential	mV	03/25/2011	N001	62.7	- 72.7	167.4		FQ	#		
pH	s.u.	03/25/2011	N001	62.7	- 72.7	6.73		FQ	#		
Potassium	mg/L	03/25/2011	0001	62.7	- 72.7	48.6		FQ	#	1	
Selenium	mg/L	03/25/2011	0001	62.7	- 72.7	0.937	E	FQ	#	0.015	
Sodium	mg/L	03/25/2011	0001	62.7	- 72.7	4790		FQ	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	62.7	- 72.7	27662		FQ	#		
Strontium	mg/L	03/25/2011	0001	62.7	- 72.7	19		FQ	#	0.02	
Sulfate	mg/L	03/25/2011	0001	62.7	- 72.7	10800		FQ	#	100	
Temperature	C	03/25/2011	N001	62.7	- 72.7	15.09		FQ	#		
Turbidity	NTU	03/25/2011	N001	62.7	- 72.7	35.3		FQ	#		
Uranium	mg/L	03/25/2011	0001	62.7	- 72.7	0.0977	*EN	FQ	#	0.00067	

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

REPORT DATE: 7/6/2011

Location: 0648 WELL Artesian well W of Bob Lee Wash

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	1482 - 1777	60			#		
Ammonia Total as N	mg/L	03/23/2011	N001	1482 - 1777	0.457			#	0.016	
Calcium	mg/L	03/23/2011	N001	1482 - 1777	109			#	0.05	
Chloride	mg/L	03/23/2011	N001	1482 - 1777	49.3			#	0.66	
Magnesium	mg/L	03/23/2011	N001	1482 - 1777	13.3			#	0.11	
Manganese	mg/L	03/23/2011	N001	1482 - 1777	0.085			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	1482 - 1777	0.01	U		#	0.01	
Oxidation Reduction Potential	mV	03/23/2011	N001	1482 - 1777	-31			#		
pH	s.u.	03/23/2011	N001	1482 - 1777	8.02			#		
Potassium	mg/L	03/23/2011	N001	1482 - 1777	6.75		J	#	1	
Selenium	mg/L	03/23/2011	N001	1482 - 1777	0.0015	UE	J	#	0.0015	
Sodium	mg/L	03/23/2011	N001	1482 - 1777	851			#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	1482 - 1777	4207			#		
Strontium	mg/L	03/23/2011	N001	1482 - 1777	12.1			#	0.02	
Sulfate	mg/L	03/23/2011	N001	1482 - 1777	1810			#	10	
Temperature	C	03/23/2011	N001	1482 - 1777	29.43			#		
Turbidity	NTU	03/23/2011	N001	1482 - 1777	0.82			#		
Uranium	mg/L	03/23/2011	N001	1482 - 1777	0.000067	U*EN		#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0725 WELL West side, lower Bob Lee Wash

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	7.5 - 17.5	271		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	7.5 - 17.5	0.059	J	JF	#	0.016	
Ammonia Total as N	mg/L	03/24/2011	N002	7.5 - 17.5	0.078	J	JF	#	0.016	
Calcium	mg/L	03/24/2011	N001	7.5 - 17.5	326		F	#	0.05	
Calcium	mg/L	03/24/2011	N002	7.5 - 17.5	332		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	7.5 - 17.5	109		F	#	0.66	
Chloride	mg/L	03/24/2011	N002	7.5 - 17.5	109		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	7.5 - 17.5	143		F	#	0.11	
Magnesium	mg/L	03/24/2011	N002	7.5 - 17.5	147		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	7.5 - 17.5	0.0536		JF	#	0.002	
Manganese	mg/L	03/24/2011	N002	7.5 - 17.5	0.0172		JF	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	7.5 - 17.5	70.3		F	#	10	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N002	7.5 - 17.5	61.5		F	#	5	
Oxidation Reduction Potential	mV	03/24/2011	N001	7.5 - 17.5	128.3		F	#		
pH	s.u.	03/24/2011	N001	7.5 - 17.5	7.13		F	#		
Potassium	mg/L	03/24/2011	N001	7.5 - 17.5	8.24		JF	#	1	
Potassium	mg/L	03/24/2011	N002	7.5 - 17.5	8.72		JF	#	1	
Selenium	mg/L	03/24/2011	N001	7.5 - 17.5	0.0322	E	F	#	0.0015	
Selenium	mg/L	03/24/2011	N002	7.5 - 17.5	0.0327	E	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	7.5 - 17.5	1150		F	#	2	

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

REPORT DATE: 7/6/2011

Location: 0725 WELL West side, lower Bob Lee Wash

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Sodium	mg/L	03/24/2011	N002	7.5 - 17.5	1170		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	7.5 - 17.5	6495		F	#		
Strontium	mg/L	03/24/2011	N001	7.5 - 17.5	15		F	#	0.02	
Strontium	mg/L	03/24/2011	N002	7.5 - 17.5	15.2		F	#	0.02	
Sulfate	mg/L	03/24/2011	N001	7.5 - 17.5	3020		F	#	20	
Sulfate	mg/L	03/24/2011	N002	7.5 - 17.5	3030		F	#	20	
Temperature	C	03/24/2011	N001	7.5 - 17.5	9.39		F	#		
Turbidity	NTU	03/24/2011	N001	7.5 - 17.5	1.34		F	#		
Uranium	mg/L	03/24/2011	N001	7.5 - 17.5	0.175	*EN	F	#	0.000067	
Uranium	mg/L	03/24/2011	N002	7.5 - 17.5	0.173	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0726 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	27.2 - 37.2	480		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	27.2 - 37.2	1.42		F	#	0.016	
Calcium	mg/L	03/24/2011	N001	27.2 - 37.2	262		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	27.2 - 37.2	232		JF	#	6.6	
Magnesium	mg/L	03/24/2011	N001	27.2 - 37.2	223		F	#	0.55	
Manganese	mg/L	03/24/2011	N001	27.2 - 37.2	0.475		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	27.2 - 37.2	4.84		F	#	0.5	
Oxidation Reduction Potential	mV	03/24/2011	N001	27.2 - 37.2	23.8		F	#		
pH	s.u.	03/24/2011	N001	27.2 - 37.2	7.14		F	#		
Potassium	mg/L	03/24/2011	N001	27.2 - 37.2	23.3		F	#	1	
Selenium	mg/L	03/24/2011	N001	27.2 - 37.2	0.00751	E	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	27.2 - 37.2	2250		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	27.2 - 37.2	11464		F	#		
Strontium	mg/L	03/24/2011	N001	27.2 - 37.2	7.08		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	27.2 - 37.2	5170		F	#	100	
Temperature	C	03/24/2011	N001	27.2 - 37.2	15.2		F	#		
Turbidity	NTU	03/24/2011	N001	27.2 - 37.2	7.73		F	#		
Uranium	mg/L	03/24/2011	N001	27.2 - 37.2	0.0252	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0727 WELL West side, upper Bob Lee Wash

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/21/2011	N001	6.7 - 16.7	1230		F	#		
Ammonia Total as N	mg/L	03/21/2011	N001	6.7 - 16.7	23.4		F	#	0.4	
Calcium	mg/L	03/21/2011	N001	6.7 - 16.7	417		F	#	0.05	
Chloride	mg/L	03/21/2011	N001	6.7 - 16.7	329		F	#	3.3	
Magnesium	mg/L	03/21/2011	N001	6.7 - 16.7	1680		F	#	2.2	
Manganese	mg/L	03/21/2011	N001	6.7 - 16.7	1.19		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/21/2011	N001	6.7 - 16.7	148		F	#	10	
Oxidation Reduction Potential	mV	03/21/2011	N001	6.7 - 16.7	263.6		F	#		
pH	s.u.	03/21/2011	N001	6.7 - 16.7	6.47		F	#		
Potassium	mg/L	03/21/2011	N001	6.7 - 16.7	62.9		F	#	1	
Selenium	mg/L	03/21/2011	N001	6.7 - 16.7	0.0015	UE	F	#	0.0015	
Sodium	mg/L	03/21/2011	N001	6.7 - 16.7	2250		F	#	2	
Specific Conductance	µmhos/cm	03/21/2011	N001	6.7 - 16.7	16927		F	#		
Strontium	mg/L	03/21/2011	N001	6.7 - 16.7	12		F	#	0.02	
Sulfate	mg/L	03/21/2011	N001	6.7 - 16.7	10500		F	#	50	
Temperature	C	03/21/2011	N001	6.7 - 16.7	12.72		F	#		
Turbidity	NTU	03/21/2011	N001	6.7 - 16.7	1.08		F	#		
Uranium	mg/L	03/21/2011	N001	6.7 - 16.7	0.269	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0728 WELL W of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	17 - 27	362		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	17 - 27	70		F	#	0.8	
Calcium	mg/L	03/22/2011	N001	17 - 27	482		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	17 - 27	51.2		F	#	0.66	
Magnesium	mg/L	03/22/2011	N001	17 - 27	651		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	17 - 27	1.14		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	17 - 27	154		F	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	17 - 27	260.7		F	#		
pH	s.u.	03/22/2011	N001	17 - 27	6.75		F	#		
Potassium	mg/L	03/22/2011	N001	17 - 27	67.2		F	#	1	
Selenium	mg/L	03/22/2011	N001	17 - 27	0.0015	UE	JF	#	0.0015	
Sodium	mg/L	03/22/2011	N001	17 - 27	644		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	17 - 27	7458		F	#		
Strontium	mg/L	03/22/2011	N001	17 - 27	6.25		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	17 - 27	4250		F	#	20	
Temperature	C	03/22/2011	N001	17 - 27	14.28		F	#		
Turbidity	NTU	03/22/2011	N001	17 - 27	1.18		F	#		
Uranium	mg/L	03/22/2011	N001	17 - 27	0.264	*EN	F	#	0.00067	

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

REPORT DATE: 7/6/2011

Location: 0730 WELL Just SW of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	26.93 - 36.93	0		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	26.93 - 36.93	50.5		F	#	0.8	
Calcium	mg/L	03/23/2011	N001	26.93 - 36.93	659		F	#	0.25	
Chloride	mg/L	03/23/2011	N001	26.93 - 36.93	11.9		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	26.93 - 36.93	157		F	#	0.55	
Manganese	mg/L	03/23/2011	N001	26.93 - 36.93	24.9		F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	26.93 - 36.93	270		F	#	10	
Oxidation Reduction Potential	mV	03/23/2011	N001	26.93 - 36.93	406.6		F	#		
pH	s.u.	03/23/2011	N001	26.93 - 36.93	3.84		F	#		
Potassium	mg/L	03/23/2011	N001	26.93 - 36.93	16.8		F	#	0.25	
Selenium	mg/L	03/23/2011	N001	26.93 - 36.93	0.0107	E	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	26.93 - 36.93	87.4		F	#	0.5	
Specific Conductance	µmhos/cm	03/23/2011	N001	26.93 - 36.93	4503		F	#		
Strontium	mg/L	03/23/2011	N001	26.93 - 36.93	3.47		F	#	0.005	
Sulfate	mg/L	03/23/2011	N001	26.93 - 36.93	1790		F	#	10	
Temperature	C	03/23/2011	N001	26.93 - 36.93	16.16		F	#		
Turbidity	NTU	03/23/2011	N001	26.93 - 36.93	9.45		F	#		
Uranium	mg/L	03/23/2011	N001	26.93 - 36.93	0.00766	*EN	JF	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0731 WELL SE of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	17 - 27	168		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	17 - 27	10.9		F	#	0.4	
Calcium	mg/L	03/24/2011	N001	17 - 27	413		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	17 - 27	45.7		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	17 - 27	363		F	#	0.11	
Manganese	mg/L	03/24/2011	N001	17 - 27	0.0206		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	17 - 27	44.7		F	#	5	
Oxidation Reduction Potential	mV	03/24/2011	N001	17 - 27	222.3		F	#		
pH	s.u.	03/24/2011	N001	17 - 27	7.14		F	#		
Potassium	mg/L	03/24/2011	N001	17 - 27	36.9		F	#	1	
Selenium	mg/L	03/24/2011	N001	17 - 27	0.03	E	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	17 - 27	1180		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	17 - 27	7954		F	#		
Strontium	mg/L	03/24/2011	N001	17 - 27	6.32		F	#	0.001	
Sulfate	mg/L	03/24/2011	N001	17 - 27	4510		F	#	20	
Temperature	C	03/24/2011	N001	17 - 27	13.64		F	#		
Turbidity	NTU	03/24/2011	N001	17 - 27	0.76		F	#		
Uranium	mg/L	03/24/2011	N001	17 - 27	0.0175	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0812 WELL W of radon cover borrow pit

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	0001	51.3	- 61.3	710		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	0001	51.3	- 61.3	0.112		UFQ	#	0.016	
Calcium	mg/L	03/24/2011	0001	51.3	- 61.3	496		FQ	#	1	
Chloride	mg/L	03/24/2011	0001	51.3	- 61.3	2150		FQ	#	66	
Magnesium	mg/L	03/24/2011	0001	51.3	- 61.3	2300		FQ	#	2.2	
Manganese	mg/L	03/24/2011	0001	51.3	- 61.3	0.0901		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	0001	51.3	- 61.3	1430		FQ	#	10	
Oxidation Reduction Potential	mV	03/24/2011	N001	51.3	- 61.3	97		FQ	#		
pH	s.u.	03/24/2011	N001	51.3	- 61.3	7.16		FQ	#		
Potassium	mg/L	03/24/2011	0001	51.3	- 61.3	58.3		FQ	#	1	
Selenium	mg/L	03/24/2011	0001	51.3	- 61.3	5.53	E	FQ	#	0.075	
Sodium	mg/L	03/24/2011	0001	51.3	- 61.3	6210		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	51.3	- 61.3	34150		FQ	#		
Strontium	mg/L	03/24/2011	0001	51.3	- 61.3	15.8		FQ	#	0.02	
Sulfate	mg/L	03/24/2011	0001	51.3	- 61.3	15200		FQ	#	100	
Temperature	C	03/24/2011	N001	51.3	- 61.3	10.87		FQ	#		
Turbidity	NTU	03/24/2011	N001	51.3	- 61.3	37.3		FQ	#		
Uranium	mg/L	03/24/2011	0001	51.3	- 61.3	0.139	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0813 WELL W of radon cover borrow pit

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	40.8 - 50.8	826		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	40.8 - 50.8	42.5		JF	#	0.4	
Ammonia Total as N	mg/L	03/23/2011	N002	40.8 - 50.8	18.8		JF	#	0.8	
Calcium	mg/L	03/23/2011	N001	40.8 - 50.8	657		F	#	1	
Calcium	mg/L	03/23/2011	N002	40.8 - 50.8	669		F	#	1	
Chloride	mg/L	03/23/2011	N001	40.8 - 50.8	645		F	#	6.6	
Chloride	mg/L	03/23/2011	N002	40.8 - 50.8	664		F	#	6.6	
Magnesium	mg/L	03/23/2011	N001	40.8 - 50.8	3000		F	#	2.2	
Magnesium	mg/L	03/23/2011	N002	40.8 - 50.8	3030		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	40.8 - 50.8	0.333		F	#	0.04	
Manganese	mg/L	03/23/2011	N002	40.8 - 50.8	0.37		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	40.8 - 50.8	2400		F	#	20	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N002	40.8 - 50.8	2800		F	#	50	
Oxidation Reduction Potential	mV	03/23/2011	N001	40.8 - 50.8	114.7		F	#		
pH	s.u.	03/23/2011	N001	40.8 - 50.8	6.5		F	#		
Potassium	mg/L	03/23/2011	N001	40.8 - 50.8	111		F	#	1	
Potassium	mg/L	03/23/2011	N002	40.8 - 50.8	115		F	#	1	
Selenium	mg/L	03/23/2011	N001	40.8 - 50.8	0.0146	E	JF	#	0.0015	
Selenium	mg/L	03/23/2011	N002	40.8 - 50.8	0.0826	E	JF	#	0.0015	
Sodium	mg/L	03/23/2011	N001	40.8 - 50.8	2680		F	#	2	

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

REPORT DATE: 7/6/2011

Location: 0813 WELL W of radon cover borrow pit

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Sodium	mg/L	03/23/2011	N002	40.8 - 50.8	2810		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	40.8 - 50.8	27105		F	#		
Strontium	mg/L	03/23/2011	N001	40.8 - 50.8	19.3		F	#	0.02	
Strontium	mg/L	03/23/2011	N002	40.8 - 50.8	19.8		F	#	0.02	
Sulfate	mg/L	03/23/2011	N001	40.8 - 50.8	9780		F	#	100	
Sulfate	mg/L	03/23/2011	N002	40.8 - 50.8	12000		F	#	100	
Temperature	C	03/23/2011	N001	40.8 - 50.8	15.07		F	#		
Turbidity	NTU	03/23/2011	N001	40.8 - 50.8	1.77		F	#		
Uranium	mg/L	03/23/2011	N001	40.8 - 50.8	0.152	*EN	F	#	0.00067	
Uranium	mg/L	03/23/2011	N002	40.8 - 50.8	0.137	*EN	F	#	0.00067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	0001	23.8	-	33.8	770		FQ	#		
Ammonia Total as N	mg/L	03/22/2011	0001	23.8	-	33.8	92.9		FQ	#	0.8	
Calcium	mg/L	03/22/2011	0001	23.8	-	33.8	472		FQ	#	0.05	
Chloride	mg/L	03/22/2011	0001	23.8	-	33.8	946		FQ	#	6.6	
Magnesium	mg/L	03/22/2011	0001	23.8	-	33.8	2070		FQ	#	2.2	
Manganese	mg/L	03/22/2011	0001	23.8	-	33.8	1.38		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	23.8	-	33.8	885		JFQ	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	23.8	-	33.8	261.5		FQ	#		
pH	s.u.	03/22/2011	N001	23.8	-	33.8	6.98		FQ	#		
Potassium	mg/L	03/22/2011	0001	23.8	-	33.8	95		FQ	#	1	
Selenium	mg/L	03/22/2011	0001	23.8	-	33.8	2.09	E	JFQ	#	0.0075	
Sodium	mg/L	03/22/2011	0001	23.8	-	33.8	3880		FQ	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	23.8	-	33.8	23714		FQ	#		
Strontium	mg/L	03/22/2011	0001	23.8	-	33.8	13.5		FQ	#	0.02	
Sulfate	mg/L	03/22/2011	0001	23.8	-	33.8	12500		FQ	#	100	
Temperature	C	03/22/2011	N001	23.8	-	33.8	13.33		FQ	#		
Turbidity	NTU	03/22/2011	N001	23.8	-	33.8	49.4		FQ	#		
Uranium	mg/L	03/22/2011	0001	23.8	-	33.8	0.0919	*EN	FQ	#	0.000335	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	22.3 - 32.3	1302		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	22.3 - 32.3	0.575		F	#	0.016	
Calcium	mg/L	03/22/2011	N001	22.3 - 32.3	466		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	22.3 - 32.3	498		F	#	6.6	
Magnesium	mg/L	03/22/2011	N001	22.3 - 32.3	2480		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	22.3 - 32.3	1.42		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	22.3 - 32.3	888		F	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	22.3 - 32.3	274.3		F	#		
pH	s.u.	03/22/2011	N001	22.3 - 32.3	6.57		F	#		
Potassium	mg/L	03/22/2011	N001	22.3 - 32.3	73.1		F	#	1	
Selenium	mg/L	03/22/2011	N001	22.3 - 32.3	0.018	E	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	22.3 - 32.3	3550		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	22.3 - 32.3	23420		F	#		
Strontium	mg/L	03/22/2011	N001	22.3 - 32.3	13.4		F	#	0.02	
Sulfate	mg/L	03/22/2011	N001	22.3 - 32.3	13300		F	#	100	
Temperature	C	03/22/2011	N001	22.3 - 32.3	15.46		F	#		
Turbidity	NTU	03/22/2011	N001	22.3 - 32.3	1.91		F	#		
Uranium	mg/L	03/22/2011	N001	22.3 - 32.3	0.304	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0816 WELL N of artesian well 648

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	20.1	-	25.1	234		FQ	#		
Ammonia Total as N	mg/L	03/23/2011	N001	20.1	-	25.1	0.0543	J	UFQ	#	0.016	
Calcium	mg/L	03/23/2011	N001	20.1	-	25.1	93.7		FQ	#	0.05	
Chloride	mg/L	03/23/2011	N001	20.1	-	25.1	53.7		FQ	#	0.66	
Magnesium	mg/L	03/23/2011	N001	20.1	-	25.1	121		FQ	#	0.11	
Manganese	mg/L	03/23/2011	N001	20.1	-	25.1	0.002	U	FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	20.1	-	25.1	16.1		FQ	#	0.5	
Oxidation Reduction Potential	mV	03/23/2011	N001	20.1	-	25.1	41		FQ	#		
pH	s.u.	03/23/2011	N001	20.1	-	25.1	7.77		FQ	#		
Potassium	mg/L	03/23/2011	N001	20.1	-	25.1	10.8		JFQ	#	1	
Selenium	mg/L	03/23/2011	N001	20.1	-	25.1	0.0156	E	FQ	#	0.0015	
Sodium	mg/L	03/23/2011	N001	20.1	-	25.1	623		FQ	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	20.1	-	25.1	3283		FQ	#		
Strontium	mg/L	03/23/2011	N001	20.1	-	25.1	1.94		FQ	#	0.001	
Sulfate	mg/L	03/23/2011	N001	20.1	-	25.1	1510		FQ	#	10	
Temperature	C	03/23/2011	N001	20.1	-	25.1	15.27		FQ	#		
Turbidity	NTU	03/23/2011	N001	20.1	-	25.1	6.28		FQ	#		
Uranium	mg/L	03/23/2011	N001	20.1	-	25.1	0.0162	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	21.6	-	31.62	1740		FQ	#		
Ammonia Total as N	mg/L	03/25/2011	N001	21.6	-	31.62	1010		FQ	#	40	
Calcium	mg/L	03/25/2011	N001	21.6	-	31.62	469		FQ	#	1	
Chloride	mg/L	03/25/2011	N001	21.6	-	31.62	470		FQ	#	6.6	
Magnesium	mg/L	03/25/2011	N001	21.6	-	31.62	1770		FQ	#	2.2	
Manganese	mg/L	03/25/2011	N001	21.6	-	31.62	2.31		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	21.6	-	31.62	655		FQ	#	10	
Oxidation Reduction Potential	mV	03/25/2011	N001	21.6	-	31.62	222.9		FQ	#		
pH	s.u.	03/25/2011	N001	21.6	-	31.62	6.39		FQ	#		
Potassium	mg/L	03/25/2011	N001	21.6	-	31.62	226		FQ	#	1	
Selenium	mg/L	03/25/2011	N001	21.6	-	31.62	0.00561	E	FQ	#	0.0015	
Sodium	mg/L	03/25/2011	N001	21.6	-	31.62	1690		FQ	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	21.6	-	31.62	21467		FQ	#		
Strontium	mg/L	03/25/2011	N001	21.6	-	31.62	11.6		FQ	#	0.02	
Sulfate	mg/L	03/25/2011	N001	21.6	-	31.62	11700		FQ	#	100	
Temperature	C	03/25/2011	N001	21.6	-	31.62	15.12		FQ	#		
Turbidity	NTU	03/25/2011	N001	21.6	-	31.62	2.01		FQ	#		
Uranium	mg/L	03/25/2011	N001	21.6	-	31.62	30.4	*EN	FQ	#	0.00134	

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

REPORT DATE: 7/6/2011

Location: 0818 WELL Just W of radon cover borrow pit

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	52 - 61.5	813		#		
Ammonia Total as N	mg/L	03/23/2011	N001	52 - 61.5	55.5		#	0.8	
Calcium	mg/L	03/23/2011	N001	52 - 61.5	498		#	1	
Chloride	mg/L	03/23/2011	N001	52 - 61.5	940		#	6.6	
Magnesium	mg/L	03/23/2011	N001	52 - 61.5	1950		#	2.2	
Manganese	mg/L	03/23/2011	N001	52 - 61.5	0.547		#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	52 - 61.5	858		#	10	
Oxidation Reduction Potential	mV	03/23/2011	N001	52 - 61.5	225.3		#		
pH	s.u.	03/23/2011	N001	52 - 61.5	6.89		#		
Potassium	mg/L	03/23/2011	N001	52 - 61.5	67.7		#	1	
Selenium	mg/L	03/23/2011	N001	52 - 61.5	2.11	E	#	0.075	
Sodium	mg/L	03/23/2011	N001	52 - 61.5	3610		#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	52 - 61.5	22592		#		
Strontium	mg/L	03/23/2011	N001	52 - 61.5	13.4		#	0.02	
Sulfate	mg/L	03/23/2011	N001	52 - 61.5	16200		#	100	
Temperature	C	03/23/2011	N001	52 - 61.5	15.04		#		
Turbidity	NTU	03/23/2011	N001	52 - 61.5	9		#		
Uranium	mg/L	03/23/2011	N001	52 - 61.5	0.115	*EN	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	15.67	- 25.67	2100		FQ	#		
Ammonia Total as N	mg/L	03/25/2011	N001	15.67	- 25.67	520		FQ	#	20	
Calcium	mg/L	03/25/2011	N001	15.67	- 25.67	465		FQ	#	0.05	
Chloride	mg/L	03/25/2011	N001	15.67	- 25.67	686		FQ	#	3.3	
Magnesium	mg/L	03/25/2011	N001	15.67	- 25.67	1250		FQ	#	2.2	
Manganese	mg/L	03/25/2011	N001	15.67	- 25.67	1.91		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	15.67	- 25.67	56.5		FQ	#	5	
Oxidation Reduction Potential	mV	03/25/2011	N001	15.67	- 25.67	190.3		FQ	#		
pH	s.u.	03/25/2011	N001	15.67	- 25.67	6.37		FQ	#		
Potassium	mg/L	03/25/2011	N001	15.67	- 25.67	163		FQ	#	1	
Selenium	mg/L	03/25/2011	N001	15.67	- 25.67	0.0709	E	FQ	#	0.0015	
Sodium	mg/L	03/25/2011	N001	15.67	- 25.67	2480		FQ	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	15.67	- 25.67	20391		FQ	#		
Strontium	mg/L	03/25/2011	N001	15.67	- 25.67	8.99		FQ	#	0.001	
Sulfate	mg/L	03/25/2011	N001	15.67	- 25.67	11600		FQ	#	50	
Temperature	C	03/25/2011	N001	15.67	- 25.67	15.27		FQ	#		
Turbidity	NTU	03/25/2011	N001	15.67	- 25.67	6.6		FQ	#		
Uranium	mg/L	03/25/2011	N001	15.67	- 25.67	0.913	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	149	-	151.5	650		FQ	#		
Ammonia Total as N	mg/L	03/25/2011	N001	149	-	151.5	4.73		FQ	#	0.16	
Calcium	mg/L	03/25/2011	N001	149	-	151.5	193		FQ	#	0.05	
Chloride	mg/L	03/25/2011	N001	149	-	151.5	8260		FQ	#	66	
Magnesium	mg/L	03/25/2011	N001	149	-	151.5	70.8		FQ	#	0.11	
Manganese	mg/L	03/25/2011	N001	149	-	151.5	1.6		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	149	-	151.5	0.131		FQ	#	0.01	
Oxidation Reduction Potential	mV	03/25/2011	N001	149	-	151.5	-52.6		FQ	#		
pH	s.u.	03/25/2011	N001	149	-	151.5	7.28		FQ	#		
Potassium	mg/L	03/25/2011	N001	149	-	151.5	18.6		FQ	#	1	
Selenium	mg/L	03/25/2011	N001	149	-	151.5	0.0375	UE	JFQ	#	0.0375	
Sodium	mg/L	03/25/2011	N001	149	-	151.5	7150		FQ	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	149	-	151.5	31510		FQ	#		
Strontium	mg/L	03/25/2011	N001	149	-	151.5	20.8		FQ	#	0.02	
Sulfate	mg/L	03/25/2011	N001	149	-	151.5	4260		FQ	#	100	
Temperature	C	03/25/2011	N001	149	-	151.5	12.46		FQ	#		
Turbidity	NTU	03/25/2011	N001	149	-	151.5	8.79		FQ	#		
Uranium	mg/L	03/25/2011	N001	149	-	151.5	0.0732	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	198.5 - 201	74		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	198.5 - 201	1.28		FQ	#	0.016	
Calcium	mg/L	03/24/2011	N001	198.5 - 201	154		FQ	#	0.05	
Chloride	mg/L	03/24/2011	N001	198.5 - 201	3730		FQ	#	66	
Magnesium	mg/L	03/24/2011	N001	198.5 - 201	92.6		FQ	#	0.11	
Manganese	mg/L	03/24/2011	N001	198.5 - 201	0.131		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	198.5 - 201	321		FQ	#	10	
Oxidation Reduction Potential	mV	03/24/2011	N001	198.5 - 201	38.3		FQ	#		
pH	s.u.	03/24/2011	N001	198.5 - 201	7.05		FQ	#		
Potassium	mg/L	03/24/2011	N001	198.5 - 201	122		FQ	#	1	
Selenium	mg/L	03/24/2011	N001	198.5 - 201	0.0075	UE	FQ	#	0.0075	
Sodium	mg/L	03/24/2011	N001	198.5 - 201	5010		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	198.5 - 201	26251		FQ	#		
Strontium	mg/L	03/24/2011	N001	198.5 - 201	14.2		FQ	#	0.02	
Sulfate	mg/L	03/24/2011	N001	198.5 - 201	4880		FQ	#	100	
Temperature	C	03/24/2011	N001	198.5 - 201	15.9		FQ	#		
Turbidity	NTU	03/24/2011	N001	198.5 - 201	3.3		FQ	#		
Uranium	mg/L	03/24/2011	N001	198.5 - 201	0.319	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	147.79 - 150.23	132		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	147.79 - 150.23	2.45		FQ	#	0.16	
Calcium	mg/L	03/24/2011	N001	147.79 - 150.23	260		FQ	#	0.05	
Chloride	mg/L	03/24/2011	N001	147.79 - 150.23	6430		FQ	#	66	
Magnesium	mg/L	03/24/2011	N001	147.79 - 150.23	99.3		FQ	#	0.55	
Manganese	mg/L	03/24/2011	N001	147.79 - 150.23	0.432		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	147.79 - 150.23	29.1		FQ	#	1	
Oxidation Reduction Potential	mV	03/24/2011	N001	147.79 - 150.23	251.7		FQ	#		
pH	s.u.	03/24/2011	N001	147.79 - 150.23	6.92		FQ	#		
Potassium	mg/L	03/24/2011	N001	147.79 - 150.23	99.3		FQ	#	1	
Selenium	mg/L	03/24/2011	N001	147.79 - 150.23	0.0015	UE	FQ	#	0.0015	
Sodium	mg/L	03/24/2011	N001	147.79 - 150.23	6510		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	147.79 - 150.23	30105		FQ	#		
Strontium	mg/L	03/24/2011	N001	147.79 - 150.23	20.6		FQ	#	0.005	
Sulfate	mg/L	03/24/2011	N001	147.79 - 150.23	5390		FQ	#	100	
Temperature	C	03/24/2011	N001	147.79 - 150.23	16.18		FQ	#		
Turbidity	NTU	03/24/2011	N001	147.79 - 150.23	3.05		FQ	#		
Uranium	mg/L	03/24/2011	N001	147.79 - 150.23	0.0304	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	10 - 20	1648		FQ	#		
Ammonia Total as N	mg/L	03/25/2011	N001	10 - 20	57		FQ	#	0.8	
Calcium	mg/L	03/25/2011	N001	10 - 20	466		FQ	#	0.05	
Chloride	mg/L	03/25/2011	N001	10 - 20	539		FQ	#	3.3	
Magnesium	mg/L	03/25/2011	N001	10 - 20	2450		FQ	#	2.2	
Manganese	mg/L	03/25/2011	N001	10 - 20	1.88		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	10 - 20	125		FQ	#	5	
Oxidation Reduction Potential	mV	03/25/2011	N001	10 - 20	122.4		FQ	#		
pH	s.u.	03/25/2011	N001	10 - 20	6.52		FQ	#		
Potassium	mg/L	03/25/2011	N001	10 - 20	103		FQ	#	1	
Selenium	mg/L	03/25/2011	N001	10 - 20	0.0428	E	FQ	#	0.0015	
Sodium	mg/L	03/25/2011	N001	10 - 20	2260		FQ	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	10 - 20	20095		FQ	#		
Strontium	mg/L	03/25/2011	N001	10 - 20	13.3		FQ	#	0.02	
Sulfate	mg/L	03/25/2011	N001	10 - 20	13100		FQ	#	100	
Temperature	C	03/25/2011	N001	10 - 20	14.23		FQ	#		
Turbidity	NTU	03/25/2011	N001	10 - 20	9.61		FQ	#		
Uranium	mg/L	03/25/2011	N001	10 - 20	3.08	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0827 WELL Just NW of Disposal Cell

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	19.9	- 29.9	1178		FQ	#		
Ammonia Total as N	mg/L	03/25/2011	N001	19.9	- 29.9	2.79		FQ	#	0.16	
Calcium	mg/L	03/25/2011	N001	19.9	- 29.9	480		FQ	#	0.05	
Chloride	mg/L	03/25/2011	N001	19.9	- 29.9	335		FQ	#	1.32	
Magnesium	mg/L	03/25/2011	N001	19.9	- 29.9	803		FQ	#	2.2	
Manganese	mg/L	03/25/2011	N001	19.9	- 29.9	0.14		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	19.9	- 29.9	266		FQ	#	10	
Oxidation Reduction Potential	mV	03/25/2011	N001	19.9	- 29.9	64.6		FQ	#		
pH	s.u.	03/25/2011	N001	19.9	- 29.9	6.53		FQ	#		
Potassium	mg/L	03/25/2011	N001	19.9	- 29.9	29.6		FQ	#	1	
Selenium	mg/L	03/25/2011	N001	19.9	- 29.9	0.0265	E	FQ	#	0.0015	
Sodium	mg/L	03/25/2011	N001	19.9	- 29.9	1800		FQ	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	19.9	- 29.9	13915		FQ	#		
Strontium	mg/L	03/25/2011	N001	19.9	- 29.9	9.41		FQ	#	0.02	
Sulfate	mg/L	03/25/2011	N001	19.9	- 29.9	5990		FQ	#	50	
Temperature	C	03/25/2011	N001	19.9	- 29.9	15.67		FQ	#		
Turbidity	NTU	03/25/2011	N001	19.9	- 29.9	5.97		FQ	#		
Uranium	mg/L	03/25/2011	N001	19.9	- 29.9	0.978	*EN	FQ	#	0.00134	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	5.3 - 15.3	694		F	#		
Ammonia Total as N	mg/L	03/25/2011	N001	5.3 - 15.3	0.143		UF	#	0.016	
Calcium	mg/L	03/25/2011	N001	5.3 - 15.3	487		F	#	0.05	
Chloride	mg/L	03/25/2011	N001	5.3 - 15.3	254		F	#	6.6	
Magnesium	mg/L	03/25/2011	N001	5.3 - 15.3	278		F	#	0.55	
Manganese	mg/L	03/25/2011	N001	5.3 - 15.3	0.002	U	F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	5.3 - 15.3	177		F	#	10	
Oxidation Reduction Potential	mV	03/25/2011	N001	5.3 - 15.3	121.8		F	#		
pH	s.u.	03/25/2011	N001	5.3 - 15.3	6.87		F	#		
Potassium	mg/L	03/25/2011	N001	5.3 - 15.3	15.6		F	#	1	
Selenium	mg/L	03/25/2011	N001	5.3 - 15.3	0.0931	E	F	#	0.0015	
Sodium	mg/L	03/25/2011	N001	5.3 - 15.3	731		F	#	2	
Specific Conductance	µmhos/cm	03/25/2011	N001	5.3 - 15.3	6124		F	#		
Strontium	mg/L	03/25/2011	N001	5.3 - 15.3	5.62		F	#	0.001	
Sulfate	mg/L	03/25/2011	N001	5.3 - 15.3	2600		F	#	10	
Temperature	C	03/25/2011	N001	5.3 - 15.3	11.61		F	#		
Turbidity	NTU	03/25/2011	N001	5.3 - 15.3	1.28		F	#		
Uranium	mg/L	03/25/2011	N001	5.3 - 15.3	0.79	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0830 WELL Just SE of Disposal Cell

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	7.7 - 17.7	0		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	7.7 - 17.7	0.542		F	#	0.016	
Calcium	mg/L	03/24/2011	N001	7.7 - 17.7	547		F	#	0.25	
Chloride	mg/L	03/24/2011	N001	7.7 - 17.7	48.2		F	#	0.66	
Magnesium	mg/L	03/24/2011	N001	7.7 - 17.7	43.8		F	#	0.55	
Manganese	mg/L	03/24/2011	N001	7.7 - 17.7	2.88		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	7.7 - 17.7	43.7		F	#	5	
Oxidation Reduction Potential	mV	03/24/2011	N001	7.7 - 17.7	331.4		F	#		
pH	s.u.	03/24/2011	N001	7.7 - 17.7	3.78		F	#		
Potassium	mg/L	03/24/2011	N001	7.7 - 17.7	5.15		JF	#	1	
Selenium	mg/L	03/24/2011	N001	7.7 - 17.7	0.0304	E	F	#	0.0015	
Sodium	mg/L	03/24/2011	N001	7.7 - 17.7	171		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	7.7 - 17.7	3006		F	#		
Strontium	mg/L	03/24/2011	N001	7.7 - 17.7	0.228		F	#	0.005	
Sulfate	mg/L	03/24/2011	N001	7.7 - 17.7	1680		F	#	10	
Temperature	C	03/24/2011	N001	7.7 - 17.7	11.76		F	#		
Turbidity	NTU	03/24/2011	N001	7.7 - 17.7	3.17		F	#		
Uranium	mg/L	03/24/2011	N001	7.7 - 17.7	0.00399	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0833 WELL Just NE of Dine College tract

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	24.9 - 34.9	487		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	24.9 - 34.9	0.099	J	F	#	0.016	
Calcium	mg/L	03/22/2011	N001	24.9 - 34.9	439		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	24.9 - 34.9	413		F	#	3.3	
Magnesium	mg/L	03/22/2011	N001	24.9 - 34.9	972		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	24.9 - 34.9	0.04	U	F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	24.9 - 34.9	1260		F	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	24.9 - 34.9	189.2		F	#		
pH	s.u.	03/22/2011	N001	24.9 - 34.9	6.99		F	#		
Potassium	mg/L	03/22/2011	N001	24.9 - 34.9	23.7		F	#	1	
Selenium	mg/L	03/22/2011	N001	24.9 - 34.9	0.455	E	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	24.9 - 34.9	1640		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	24.9 - 34.9	12229		F	#		
Strontium	mg/L	03/22/2011	N001	24.9 - 34.9	8.34		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	24.9 - 34.9	6020		F	#	50	
Temperature	C	03/22/2011	N001	24.9 - 34.9	14.9		F	#		
Uranium	mg/L	03/22/2011	N001	24.9 - 34.9	0.184	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	21.9	-	31.9	384		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	21.9	-	31.9	0.0498	J	UF	#	0.016	
Ammonia Total as N	mg/L	03/22/2011	N002	21.9	-	31.9	0.0989	J	UF	#	0.016	
Calcium	mg/L	03/22/2011	N001	21.9	-	31.9	452		F	#	0.05	
Calcium	mg/L	03/22/2011	N002	21.9	-	31.9	459		F	#	0.25	
Chloride	mg/L	03/22/2011	N001	21.9	-	31.9	179		F	#	0.66	
Chloride	mg/L	03/22/2011	N002	21.9	-	31.9	187		F	#	0.66	
Magnesium	mg/L	03/22/2011	N001	21.9	-	31.9	428		F	#	2.2	
Magnesium	mg/L	03/22/2011	N002	21.9	-	31.9	403		F	#	0.55	
Manganese	mg/L	03/22/2011	N001	21.9	-	31.9	0.04	U	F	#	0.04	
Manganese	mg/L	03/22/2011	N002	21.9	-	31.9	0.01	U	F	#	0.01	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	21.9	-	31.9	83		F	#	5	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N002	21.9	-	31.9	93		F	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	21.9	-	31.9	197.6		F	#		
pH	s.u.	03/22/2011	N001	21.9	-	31.9	7.02		F	#		
Potassium	mg/L	03/22/2011	N001	21.9	-	31.9	10.9		JF	#	1	
Potassium	mg/L	03/22/2011	N002	21.9	-	31.9	17		JF	#	1	
Selenium	mg/L	03/22/2011	N001	21.9	-	31.9	0.458	E	F	#	0.0015	
Selenium	mg/L	03/22/2011	N002	21.9	-	31.9	0.406	E	F	#	0.0075	
Sodium	mg/L	03/22/2011	N001	21.9	-	31.9	933		F	#	2	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Sodium	mg/L	03/22/2011	N002	21.9 - 31.9	957		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	21.9 - 31.9	7199		F	#		
Strontium	mg/L	03/22/2011	N001	21.9 - 31.9	5.68		F	#	0.001	
Strontium	mg/L	03/22/2011	N002	21.9 - 31.9	5.73		F	#	0.005	
Sulfate	mg/L	03/22/2011	N001	21.9 - 31.9	3610		JF	#	100	
Sulfate	mg/L	03/22/2011	N002	21.9 - 31.9	4690		JF	#	100	
Temperature	C	03/22/2011	N001	21.9 - 31.9	15.84		F	#		
Turbidity	NTU	03/22/2011	N001	21.9 - 31.9	3.62		F	#		
Uranium	mg/L	03/22/2011	N001	21.9 - 31.9	0.0771	*EN	F	#	0.000067	
Uranium	mg/L	03/22/2011	N002	21.9 - 31.9	0.0709	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	26.8 - 36.8	282		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	26.8 - 36.8	0.0336	J	UF	#	0.016	
Calcium	mg/L	03/22/2011	N001	26.8 - 36.8	499		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	26.8 - 36.8	37.3		F	#	0.66	
Magnesium	mg/L	03/22/2011	N001	26.8 - 36.8	243		F	#	0.11	
Manganese	mg/L	03/22/2011	N001	26.8 - 36.8	0.322		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	26.8 - 36.8	29		F	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	26.8 - 36.8	174.9		F	#		
pH	s.u.	03/22/2011	N001	26.8 - 36.8	6.95		F	#		
Potassium	mg/L	03/22/2011	N001	26.8 - 36.8	4.72	B	F	#	0.25	
Selenium	mg/L	03/22/2011	N001	26.8 - 36.8	0.223	E	F	#	0.0015	
Sodium	mg/L	03/22/2011	N001	26.8 - 36.8	391		F	#	0.5	
Specific Conductance	µmhos/cm	03/22/2011	N001	26.8 - 36.8	4563		F	#		
Strontium	mg/L	03/22/2011	N001	26.8 - 36.8	6.31		F	#	0.001	
Sulfate	mg/L	03/22/2011	N001	26.8 - 36.8	2730		F	#	100	
Temperature	C	03/22/2011	N001	26.8 - 36.8	14.49		F	#		
Turbidity	NTU	03/22/2011	N001	26.8 - 36.8	7.48		F	#		
Uranium	mg/L	03/22/2011	N001	26.8 - 36.8	0.0465	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	17 - 27.1	580		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	17 - 27.1	0.109		UF	#	0.016	
Calcium	mg/L	03/23/2011	N001	17 - 27.1	615		F	#	1	
Chloride	mg/L	03/23/2011	N001	17 - 27.1	56.5		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	17 - 27.1	226		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	17 - 27.1	4.04		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	17 - 27.1	9.12		F	#	0.1	
Oxidation Reduction Potential	mV	03/23/2011	N001	17 - 27.1	-57.4		F	#		
pH	s.u.	03/23/2011	N001	17 - 27.1	6.8		F	#		
Potassium	mg/L	03/23/2011	N001	17 - 27.1	13.2		JF	#	1	
Selenium	mg/L	03/23/2011	N001	17 - 27.1	0.363	E	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	17 - 27.1	421		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	17 - 27.1	4750		F	#		
Strontium	mg/L	03/23/2011	N001	17 - 27.1	6.92		F	#	0.02	
Sulfate	mg/L	03/23/2011	N001	17 - 27.1	2460		F	#	100	
Temperature	C	03/23/2011	N001	17 - 27.1	13.82		F	#		
Turbidity	NTU	03/23/2011	N001	17 - 27.1	1.82		F	#		
Uranium	mg/L	03/23/2011	N001	17 - 27.1	0.0597	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0838 WELL W part of Dine College tract

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	21.9 - 31.9	448		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	21.9 - 31.9	0.0923	J	UF	#	0.016	
Calcium	mg/L	03/22/2011	N001	21.9 - 31.9	607		F	#	1	
Chloride	mg/L	03/22/2011	N001	21.9 - 31.9	610		F	#	6.6	
Magnesium	mg/L	03/22/2011	N001	21.9 - 31.9	1230		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	21.9 - 31.9	0.04	U	F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	21.9 - 31.9	587		F	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	21.9 - 31.9	195.2		F	#		
pH	s.u.	03/22/2011	N001	21.9 - 31.9	6.92		F	#		
Potassium	mg/L	03/22/2011	N001	21.9 - 31.9	21		F	#	1	
Selenium	mg/L	03/22/2011	N001	21.9 - 31.9	4.71	E	F	#	0.03	
Sodium	mg/L	03/22/2011	N001	21.9 - 31.9	2220		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	21.9 - 31.9	15682		F	#		
Strontium	mg/L	03/22/2011	N001	21.9 - 31.9	13.4		F	#	0.02	
Sulfate	mg/L	03/22/2011	N001	21.9 - 31.9	7080		F	#	100	
Temperature	C	03/22/2011	N001	21.9 - 31.9	14.33		F	#		
Turbidity	NTU	03/22/2011	N001	21.9 - 31.9	5.24		F	#		
Uranium	mg/L	03/22/2011	N001	21.9 - 31.9	0.138	*EN	F	#	0.00067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	42 - 52	810		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	42 - 52	0.108		F	#	0.016	
Calcium	mg/L	03/22/2011	N001	42 - 52	419		F	#	0.05	
Chloride	mg/L	03/22/2011	N001	42 - 52	847		F	#	6.6	
Magnesium	mg/L	03/22/2011	N001	42 - 52	926		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	42 - 52	0.04	U	F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	42 - 52	625		F	#	5	
Oxidation Reduction Potential	mV	03/22/2011	N001	42 - 52	208.4		F	#		
pH	s.u.	03/22/2011	N001	42 - 52	7.22		F	#		
Potassium	mg/L	03/22/2011	N001	42 - 52	47.9		F	#	1	
Selenium	mg/L	03/22/2011	N001	42 - 52	3.57	E	F	#	0.015	
Sodium	mg/L	03/22/2011	N001	42 - 52	7010		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	42 - 52	28138		F	#		
Strontium	mg/L	03/22/2011	N001	42 - 52	10		F	#	0.02	
Sulfate	mg/L	03/22/2011	N001	42 - 52	14300		F	#	100	
Temperature	C	03/22/2011	N001	42 - 52	14.44		F	#		
Turbidity	NTU	03/22/2011	N001	42 - 52	4.82		F	#		
Uranium	mg/L	03/22/2011	N001	42 - 52	0.142	*EN	F	#	0.00067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	11.9 - 21.9	278		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	11.9 - 21.9	0.121		UF	#	0.016	
Calcium	mg/L	03/23/2011	N001	11.9 - 21.9	286		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	11.9 - 21.9	37.4		F	#	0.66	
Magnesium	mg/L	03/23/2011	N001	11.9 - 21.9	103		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	11.9 - 21.9	1.04		F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	11.9 - 21.9	7.95		F	#	0.5	
Oxidation Reduction Potential	mV	03/23/2011	N001	11.9 - 21.9	27.9		F	#		
pH	s.u.	03/23/2011	N001	11.9 - 21.9	7.03		F	#		
Potassium	mg/L	03/23/2011	N001	11.9 - 21.9	7.24		F	#	0.05	
Selenium	mg/L	03/23/2011	N001	11.9 - 21.9	0.136	E	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	11.9 - 21.9	261		F	#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	11.9 - 21.9	2784		F	#		
Strontium	mg/L	03/23/2011	N001	11.9 - 21.9	3.42		F	#	0.001	
Sulfate	mg/L	03/23/2011	N001	11.9 - 21.9	1180		F	#	10	
Temperature	C	03/23/2011	N001	11.9 - 21.9	13.1		F	#		
Turbidity	NTU	03/23/2011	N001	11.9 - 21.9	2.54		F	#		
Uranium	mg/L	03/23/2011	N001	11.9 - 21.9	0.0238	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	28.91 - 38.91	624		F	#		
Ammonia Total as N	mg/L	03/22/2011	N001	28.91 - 38.91	0.046	J	F	#	0.016	
Calcium	mg/L	03/22/2011	N001	28.91 - 38.91	552		F	#	1	
Chloride	mg/L	03/22/2011	N001	28.91 - 38.91	767		F	#	6.6	
Magnesium	mg/L	03/22/2011	N001	28.91 - 38.91	1770		F	#	2.2	
Manganese	mg/L	03/22/2011	N001	28.91 - 38.91	0.04	U	F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	28.91 - 38.91	794		F	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	28.91 - 38.91	199.6		F	#		
pH	s.u.	03/22/2011	N001	28.91 - 38.91	7.26		F	#		
Potassium	mg/L	03/22/2011	N001	28.91 - 38.91	43.5		F	#	1	
Selenium	mg/L	03/22/2011	N001	28.91 - 38.91	1.84	E	F	#	0.015	
Sodium	mg/L	03/22/2011	N001	28.91 - 38.91	2640		F	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	28.91 - 38.91	18723		F	#		
Strontium	mg/L	03/22/2011	N001	28.91 - 38.91	14		F	#	0.02	
Sulfate	mg/L	03/22/2011	N001	28.91 - 38.91	8740		F	#	100	
Temperature	C	03/22/2011	N001	28.91 - 38.91	15.3		F	#		
Turbidity	NTU	03/22/2011	N001	28.91 - 38.91	2.24		F	#		
Uranium	mg/L	03/22/2011	N001	28.91 - 38.91	0.181	*EN	F	#	0.00067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	45 - 142.58	1640		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	45 - 142.58	9.48		F	#	0.16	
Calcium	mg/L	03/23/2011	N001	45 - 142.58	409		F	#	0.05	
Chloride	mg/L	03/23/2011	N001	45 - 142.58	1050		F	#	66	
Magnesium	mg/L	03/23/2011	N001	45 - 142.58	529		F	#	2.2	
Manganese	mg/L	03/23/2011	N001	45 - 142.58	3.03		F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	45 - 142.58	0.01	U	F	#	0.01	
Oxidation Reduction Potential	mV	03/23/2011	N001	45 - 142.58	-18		F	#		
pH	s.u.	03/23/2011	N001	45 - 142.58	6.72		F	#		
Potassium	mg/L	03/23/2011	N001	45 - 142.58	25.8		F	#	1	
Selenium	mg/L	03/23/2011	N001	45 - 142.58	0.089	E	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	45 - 142.58	7100		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	45 - 142.58	27465		F	#		
Strontium	mg/L	03/23/2011	N001	45 - 142.58	20		F	#	0.02	
Sulfate	mg/L	03/23/2011	N001	45 - 142.58	14900		F	#	100	
Temperature	C	03/23/2011	N001	45 - 142.58	14.59		F	#		
Turbidity	NTU	03/23/2011	N001	45 - 142.58	4.71		F	#		
Uranium	mg/L	03/23/2011	N001	45 - 142.58	0.0224	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1007 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)		Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	36.8	- 46.3	1320		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	36.8	- 46.3	23.9		FQ	#	0.4	
Calcium	mg/L	03/24/2011	N001	36.8	- 46.3	474		FQ	#	0.05	
Chloride	mg/L	03/24/2011	N001	36.8	- 46.3	637		FQ	#	6.6	
Magnesium	mg/L	03/24/2011	N001	36.8	- 46.3	2500		FQ	#	2.2	
Manganese	mg/L	03/24/2011	N001	36.8	- 46.3	0.865		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	36.8	- 46.3	913		FQ	#	10	
Oxidation Reduction Potential	mV	03/24/2011	N001	36.8	- 46.3	387		FQ	#		
pH	s.u.	03/24/2011	N001	36.8	- 46.3	6.55		FQ	#		
Potassium	mg/L	03/24/2011	N001	36.8	- 46.3	118		FQ	#	1	
Selenium	mg/L	03/24/2011	N001	36.8	- 46.3	0.366	E	FQ	#	0.015	
Sodium	mg/L	03/24/2011	N001	36.8	- 46.3	2910		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	36.8	- 46.3	21950		FQ	#		
Strontium	mg/L	03/24/2011	N001	36.8	- 46.3	13		FQ	#	0.02	
Sulfate	mg/L	03/24/2011	N001	36.8	- 46.3	11700		FQ	#	100	
Temperature	C	03/24/2011	N001	36.8	- 46.3	15.85		FQ	#		
Turbidity	NTU	03/24/2011	N001	36.8	- 46.3	4.52		FQ	#		
Uranium	mg/L	03/24/2011	N001	36.8	- 46.3	3.01	*EN	FQ	#	0.00067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	4.3 - 9.3	664		F	#		
Ammonia Total as N	mg/L	03/24/2011	N001	4.3 - 9.3	0.095	J	F	#	0.016	
Calcium	mg/L	03/24/2011	N001	4.3 - 9.3	416		F	#	0.05	
Chloride	mg/L	03/24/2011	N001	4.3 - 9.3	1630		F	#	6.6	
Magnesium	mg/L	03/24/2011	N001	4.3 - 9.3	1340		F	#	2.2	
Manganese	mg/L	03/24/2011	N001	4.3 - 9.3	0.04	U	F	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	4.3 - 9.3	783		F	#	10	
Oxidation Reduction Potential	mV	03/24/2011	N001	4.3 - 9.3	217.7		F	#		
pH	s.u.	03/24/2011	N001	4.3 - 9.3	7.43		F	#		
Potassium	mg/L	03/24/2011	N001	4.3 - 9.3	26.6		F	#	1	
Selenium	mg/L	03/24/2011	N001	4.3 - 9.3	1.37	E	F	#	0.0075	
Sodium	mg/L	03/24/2011	N001	4.3 - 9.3	6780		F	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	4.3 - 9.3	28547		F	#		
Strontium	mg/L	03/24/2011	N001	4.3 - 9.3	10.2		F	#	0.02	
Sulfate	mg/L	03/24/2011	N001	4.3 - 9.3	16000		F	#	100	
Temperature	C	03/24/2011	N001	4.3 - 9.3	11.94		F	#		
Turbidity	NTU	03/24/2011	N001	4.3 - 9.3	9.7		F	#		
Uranium	mg/L	03/24/2011	N001	4.3 - 9.3	0.164	*EN	F	#	0.000335	

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

REPORT DATE: 7/6/2011

Location: 1057 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	36.66 - 41.66	385			#		
Ammonia Total as N	mg/L	03/23/2011	N001	36.66 - 41.66	521			#	20	
Calcium	mg/L	03/23/2011	N001	36.66 - 41.66	1670			#	1	
Chloride	mg/L	03/23/2011	N001	36.66 - 41.66	273			#	6.6	
Magnesium	mg/L	03/23/2011	N001	36.66 - 41.66	2590			#	2.2	
Manganese	mg/L	03/23/2011	N001	36.66 - 41.66	64.6		J	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	36.66 - 41.66	2370		J	#	50	
Oxidation Reduction Potential	mV	03/23/2011	N001	36.66 - 41.66	299.9			#		
pH	s.u.	03/23/2011	N001	36.66 - 41.66	6.5			#		
Potassium	mg/L	03/23/2011	N001	36.66 - 41.66	279			#	1	
Selenium	mg/L	03/23/2011	N001	36.66 - 41.66	0.273	E	J	#	0.0015	
Sodium	mg/L	03/23/2011	N001	36.66 - 41.66	2340			#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	36.66 - 41.66	18483			#		
Strontium	mg/L	03/23/2011	N001	36.66 - 41.66	17.7			#	0.02	
Sulfate	mg/L	03/23/2011	N001	36.66 - 41.66	5990			#	100	
Temperature	C	03/23/2011	N001	36.66 - 41.66	10.05			#		
Turbidity	NTU	03/23/2011	N001	36.66 - 41.66	11			#		
Uranium	mg/L	03/23/2011	N001	36.66 - 41.66	0.0717	*EN	J	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1058 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	41.7 - 51.2	589		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	41.7 - 51.2	4.25		FQ	#	0.04	
Calcium	mg/L	03/24/2011	N001	41.7 - 51.2	255		FQ	#	0.05	
Chloride	mg/L	03/24/2011	N001	41.7 - 51.2	1050		FQ	#	33	
Magnesium	mg/L	03/24/2011	N001	41.7 - 51.2	138		FQ	#	0.11	
Manganese	mg/L	03/24/2011	N001	41.7 - 51.2	0.203		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	41.7 - 51.2	0.0108	J	UFQ	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	41.7 - 51.2	-87.2		FQ	#		
pH	s.u.	03/24/2011	N001	41.7 - 51.2	7.18		FQ	#		
Potassium	mg/L	03/24/2011	N001	41.7 - 51.2	11.9		JFQ	#	1	
Selenium	mg/L	03/24/2011	N001	41.7 - 51.2	0.0015	UE	FQ	#	0.0015	
Sodium	mg/L	03/24/2011	N001	41.7 - 51.2	3160		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	41.7 - 51.2	13401		FQ	#		
Strontium	mg/L	03/24/2011	N001	41.7 - 51.2	11.6		FQ	#	0.02	
Sulfate	mg/L	03/24/2011	N001	41.7 - 51.2	5210		FQ	#	50	
Temperature	C	03/24/2011	N001	41.7 - 51.2	13.58		FQ	#		
Turbidity	NTU	03/24/2011	N001	41.7 - 51.2	3.56		FQ	#		
Uranium	mg/L	03/24/2011	N001	41.7 - 51.2	0.00529	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1059 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID	(Ft BLS)				Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	39.5	-	49	628		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	39.5	-	49	4.52		FQ	#	0.04	
Calcium	mg/L	03/24/2011	N001	39.5	-	49	349		FQ	#	0.05	
Chloride	mg/L	03/24/2011	N001	39.5	-	49	735		FQ	#	3.3	
Magnesium	mg/L	03/24/2011	N001	39.5	-	49	417		FQ	#	0.11	
Manganese	mg/L	03/24/2011	N001	39.5	-	49	0.0947		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	39.5	-	49	397		FQ	#	10	
Oxidation Reduction Potential	mV	03/24/2011	N001	39.5	-	49	4.3		FQ	#		
pH	s.u.	03/24/2011	N001	39.5	-	49	7.01		FQ	#		
Potassium	mg/L	03/24/2011	N001	39.5	-	49	19.7		FQ	#	1	
Selenium	mg/L	03/24/2011	N001	39.5	-	49	0.0015	UE	FQ	#	0.0015	
Sodium	mg/L	03/24/2011	N001	39.5	-	49	4370		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	39.5	-	49	18776		FQ	#		
Strontium	mg/L	03/24/2011	N001	39.5	-	49	18.9		FQ	#	0.02	
Sulfate	mg/L	03/24/2011	N001	39.5	-	49	9050		FQ	#	100	
Temperature	C	03/24/2011	N001	39.5	-	49	14.84		FQ	#		
Turbidity	NTU	03/24/2011	N001	39.5	-	49	6.02		FQ	#		
Uranium	mg/L	03/24/2011	N001	39.5	-	49	0.066	*EN	FQ	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1068 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	6.95 - 8.95	618		FQ	#		
Ammonia Total as N	mg/L	03/22/2011	0001	6.95 - 8.95	12		FQ	#	0.4	
Calcium	mg/L	03/22/2011	0001	6.95 - 8.95	439		FQ	#	0.05	
Chloride	mg/L	03/22/2011	0001	6.95 - 8.95	273		FQ	#	13.2	
Magnesium	mg/L	03/22/2011	0001	6.95 - 8.95	837		FQ	#	2.2	
Manganese	mg/L	03/22/2011	0001	6.95 - 8.95	1.11		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	6.95 - 8.95	339		FQ	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	6.95 - 8.95	257		FQ	#		
pH	s.u.	03/22/2011	N001	6.95 - 8.95	6.82		FQ	#		
Potassium	mg/L	03/22/2011	0001	6.95 - 8.95	32.5		FQ	#	1	
Selenium	mg/L	03/22/2011	0001	6.95 - 8.95	0.108	E	FQ	#	0.0015	
Sodium	mg/L	03/22/2011	0001	6.95 - 8.95	1150		FQ	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	6.95 - 8.95	10202		FQ	#		
Strontium	mg/L	03/22/2011	0001	6.95 - 8.95	8.26		FQ	#	0.001	
Sulfate	mg/L	03/22/2011	0001	6.95 - 8.95	5350		FQ	#	20	
Temperature	C	03/22/2011	N001	6.95 - 8.95	9.53		FQ	#		
Turbidity	NTU	03/22/2011	N001	6.95 - 8.95	315		FQ	#		
Uranium	mg/L	03/22/2011	0001	6.95 - 8.95	0.822	*EN	FQ	#	0.00134	

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

REPORT DATE: 7/6/2011

Location: 1069 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	4.35 - 6.35	568		FQ	#		
Ammonia Total as N	mg/L	03/22/2011	0001	4.35 - 6.35	0.814		FQ	#	0.016	
Calcium	mg/L	03/22/2011	0001	4.35 - 6.35	432		FQ	#	0.05	
Chloride	mg/L	03/22/2011	0001	4.35 - 6.35	365		FQ	#	6.6	
Magnesium	mg/L	03/22/2011	0001	4.35 - 6.35	2500		FQ	#	2.2	
Manganese	mg/L	03/22/2011	0001	4.35 - 6.35	0.04	U	FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	4.35 - 6.35	515		FQ	#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	4.35 - 6.35	217.7		FQ	#		
pH	s.u.	03/22/2011	N001	4.35 - 6.35	7.24		FQ	#		
Potassium	mg/L	03/22/2011	0001	4.35 - 6.35	84		FQ	#	1	
Selenium	mg/L	03/22/2011	0001	4.35 - 6.35	0.215	E	FQ	#	0.0015	
Sodium	mg/L	03/22/2011	0001	4.35 - 6.35	3480		FQ	#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	4.35 - 6.35	13398		FQ	#		
Strontium	mg/L	03/22/2011	0001	4.35 - 6.35	21.4		FQ	#	0.02	
Sulfate	mg/L	03/22/2011	0001	4.35 - 6.35	6750		FQ	#	100	
Temperature	C	03/22/2011	N001	4.35 - 6.35	9.84		FQ	#		
Turbidity	NTU	03/22/2011	N001	4.35 - 6.35	53.6		FQ	#		
Uranium	mg/L	03/22/2011	0001	4.35 - 6.35	1.73	*EN	FQ	#	0.00134	

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

REPORT DATE: 7/6/2011

Location: 1070 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	52.5 - 62	823		#		
Ammonia Total as N	mg/L	03/23/2011	N001	52.5 - 62	4.39		#	0.16	
Calcium	mg/L	03/23/2011	N001	52.5 - 62	421		#	0.05	
Chloride	mg/L	03/23/2011	N001	52.5 - 62	964		#	33	
Magnesium	mg/L	03/23/2011	N001	52.5 - 62	1110		#	2.2	
Manganese	mg/L	03/23/2011	N001	52.5 - 62	0.129		#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	52.5 - 62	668		#	10	
Oxidation Reduction Potential	mV	03/23/2011	N001	52.5 - 62	231.5		#		
pH	s.u.	03/23/2011	N001	52.5 - 62	7.13		#		
Potassium	mg/L	03/23/2011	N001	52.5 - 62	48.3		#	1	
Selenium	mg/L	03/23/2011	N001	52.5 - 62	2.97	E	#	0.075	
Sodium	mg/L	03/23/2011	N001	52.5 - 62	6010		#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	52.5 - 62	27272		#		
Strontium	mg/L	03/23/2011	N001	52.5 - 62	10.3		#	0.02	
Sulfate	mg/L	03/23/2011	N001	52.5 - 62	14500		#	50	
Temperature	C	03/23/2011	N001	52.5 - 62	13.56		#		
Turbidity	NTU	03/23/2011	N001	52.5 - 62	6		#		
Uranium	mg/L	03/23/2011	N001	52.5 - 62	0.107	*EN	#	0.00067	

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

REPORT DATE: 7/6/2011

Location: 1071 WELL

Parameter	Units	Sample		Depth Range			Result	Qualifiers			
		Date	ID	(Ft BLS)				Lab	Data	QA	Detection Limit
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	36.5	-	46	1124			#	
Ammonia Total as N	mg/L	03/22/2011	N001	36.5	-	46	585			#	20
Calcium	mg/L	03/22/2011	N001	36.5	-	46	730			#	1
Chloride	mg/L	03/22/2011	N001	36.5	-	46	677			#	6.6
Magnesium	mg/L	03/22/2011	N001	36.5	-	46	2050			#	2.2
Manganese	mg/L	03/22/2011	N001	36.5	-	46	19.1			#	0.04
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	36.5	-	46	1350			#	10
Oxidation Reduction Potential	mV	03/22/2011	N001	36.5	-	46	139.9			#	
pH	s.u.	03/22/2011	N001	36.5	-	46	7			#	
Potassium	mg/L	03/22/2011	N001	36.5	-	46	172			#	1
Selenium	mg/L	03/22/2011	N001	36.5	-	46	1.43	E		#	0.015
Sodium	mg/L	03/22/2011	N001	36.5	-	46	3620			#	2
Specific Conductance	µmhos/cm	03/22/2011	N001	36.5	-	46	25982			#	
Strontium	mg/L	03/22/2011	N001	36.5	-	46	13.3			#	0.02
Sulfate	mg/L	03/22/2011	N001	36.5	-	46	12300			#	50
Temperature	C	03/22/2011	N001	36.5	-	46	13.95			#	
Turbidity	NTU	03/22/2011	N001	36.5	-	46	9.35			#	
Uranium	mg/L	03/22/2011	N001	36.5	-	46	0.145	*EN		#	0.00067

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

REPORT DATE: 7/6/2011

Location: 1073 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	40.5 - 50	158		FQ	#		
Ammonia Total as N	mg/L	03/23/2011	0001	40.5 - 50	96.2		FQ	#	0.8	
Calcium	mg/L	03/23/2011	0001	40.5 - 50	606		FQ	#	1	
Chloride	mg/L	03/23/2011	0001	40.5 - 50	922		FQ	#	33	
Magnesium	mg/L	03/23/2011	0001	40.5 - 50	1760		FQ	#	2.2	
Manganese	mg/L	03/23/2011	0001	40.5 - 50	1.12		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	0001	40.5 - 50	1690		FQ	#	20	
Oxidation Reduction Potential	mV	03/23/2011	N001	40.5 - 50	184		FQ	#		
pH	s.u.	03/23/2011	N001	40.5 - 50	6.94		FQ	#		
Potassium	mg/L	03/23/2011	0001	40.5 - 50	103		FQ	#	1	
Selenium	mg/L	03/23/2011	0001	40.5 - 50	2.35	E	FQ	#	0.0075	
Sodium	mg/L	03/23/2011	0001	40.5 - 50	2980		FQ	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	40.5 - 50	22092		FQ	#		
Strontium	mg/L	03/23/2011	0001	40.5 - 50	11.6		FQ	#	0.02	
Sulfate	mg/L	03/23/2011	0001	40.5 - 50	8290		FQ	#	50	
Temperature	C	03/23/2011	N001	40.5 - 50	14.72		FQ	#		
Turbidity	NTU	03/23/2011	N001	40.5 - 50	50.9		FQ	#		
Uranium	mg/L	03/23/2011	0001	40.5 - 50	0.0637	*EN	FQ	#	0.000335	

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

REPORT DATE: 7/6/2011

Location: 1074 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Lab	Qualifiers		Detection Limit	Uncertainty
		Date	ID				Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	27 - 36.5	1146		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	27 - 36.5	10.6		FQ	#	0.4	
Calcium	mg/L	03/24/2011	N001	27 - 36.5	607		FQ	#	1	
Chloride	mg/L	03/24/2011	N001	27 - 36.5	971		FQ	#	33	
Magnesium	mg/L	03/24/2011	N001	27 - 36.5	2250		FQ	#	2.2	
Manganese	mg/L	03/24/2011	N001	27 - 36.5	1.89		FQ	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	27 - 36.5	1240		FQ	#	20	
Oxidation Reduction Potential	mV	03/24/2011	N001	27 - 36.5	411		FQ	#		
pH	s.u.	03/24/2011	N001	27 - 36.5	6.7		FQ	#		
Potassium	mg/L	03/24/2011	N001	27 - 36.5	44		FQ	#	1	
Selenium	mg/L	03/24/2011	N001	27 - 36.5	0.299	E	FQ	#	0.015	
Sodium	mg/L	03/24/2011	N001	27 - 36.5	2480		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	27 - 36.5	21487		FQ	#		
Strontium	mg/L	03/24/2011	N001	27 - 36.5	12.1		FQ	#	0.02	
Sulfate	mg/L	03/24/2011	N001	27 - 36.5	8180		FQ	#	50	
Temperature	C	03/24/2011	N001	27 - 36.5	14.74		FQ	#		
Turbidity	NTU	03/24/2011	N001	27 - 36.5	4.35		FQ	#		
Uranium	mg/L	03/24/2011	N001	27 - 36.5	1.84	*EN	FQ	#	0.00067	

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

REPORT DATE: 7/6/2011

Location: 1078 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	35.5 - 45	622			#		
Ammonia Total as N	mg/L	03/22/2011	N001	35.5 - 45	1.85			#	0.016	
Calcium	mg/L	03/22/2011	N001	35.5 - 45	435			#	0.05	
Chloride	mg/L	03/22/2011	N001	35.5 - 45	1100			#	6.6	
Magnesium	mg/L	03/22/2011	N001	35.5 - 45	1210			#	2.2	
Manganese	mg/L	03/22/2011	N001	35.5 - 45	0.0597		J	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	35.5 - 45	555			#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	35.5 - 45	215.3			#		
pH	s.u.	03/22/2011	N001	35.5 - 45	7.1			#		
Potassium	mg/L	03/22/2011	N001	35.5 - 45	46.6			#	1	
Selenium	mg/L	03/22/2011	N001	35.5 - 45	2.79	E		#	0.075	
Sodium	mg/L	03/22/2011	N001	35.5 - 45	5840			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	35.5 - 45	13341			#		
Strontium	mg/L	03/22/2011	N001	35.5 - 45	11.4			#	0.02	
Sulfate	mg/L	03/22/2011	N001	35.5 - 45	14300			#	100	
Temperature	C	03/22/2011	N001	35.5 - 45	17.71			#		
Turbidity	NTU	03/22/2011	N001	35.5 - 45	14.4			#		
Uranium	mg/L	03/22/2011	N001	35.5 - 45	0.149	*EN	J	#	0.000335	

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

REPORT DATE: 7/6/2011

Location: 1079 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID			Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	10.5 - 20	306		F	#		
Ammonia Total as N	mg/L	03/23/2011	N001	10.5 - 20	0.0453	J	UF	#	0.016	
Calcium	mg/L	03/23/2011	N001	10.5 - 20	776		F	#	1	
Chloride	mg/L	03/23/2011	N001	10.5 - 20	116		JF	#	0.66	
Magnesium	mg/L	03/23/2011	N001	10.5 - 20	154		F	#	0.11	
Manganese	mg/L	03/23/2011	N001	10.5 - 20	0.002	U	F	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	10.5 - 20	96		F	#	10	
Oxidation Reduction Potential	mV	03/23/2011	N001	10.5 - 20	197.8		F	#		
pH	s.u.	03/23/2011	N001	10.5 - 20	6.8		F	#		
Potassium	mg/L	03/23/2011	N001	10.5 - 20	7.99		JF	#	1	
Selenium	mg/L	03/23/2011	N001	10.5 - 20	0.444	E	F	#	0.0015	
Sodium	mg/L	03/23/2011	N001	10.5 - 20	363		F	#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	10.5 - 20	4876		F	#		
Strontium	mg/L	03/23/2011	N001	10.5 - 20	7.45		F	#	0.02	
Sulfate	mg/L	03/23/2011	N001	10.5 - 20	2280		JF	#	10	
Temperature	C	03/23/2011	N001	10.5 - 20	12.78		F	#		
Turbidity	NTU	03/23/2011	N001	10.5 - 20	3.24		F	#		
Uranium	mg/L	03/23/2011	N001	10.5 - 20	0.0454	*EN	F	#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers			Detection Limit	Uncertainty
				Lab	Data	QA						
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	0	-	0	584			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0	-	0	105			#	4	
Calcium	mg/L	03/22/2011	N001	0	-	0	458			#	0.05	
Chloride	mg/L	03/22/2011	N001	0	-	0	278			#	6.6	
Magnesium	mg/L	03/22/2011	N001	0	-	0	1180			#	2.2	
Manganese	mg/L	03/22/2011	N001	0	-	0	0.989			#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	0	-	0	473			#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	0	-	0	242.2			#		
pH	s.u.	03/22/2011	N001	0	-	0	6.89			#		
Potassium	mg/L	03/22/2011	N001	0	-	0	87.1			#	1	
Selenium	mg/L	03/22/2011	N001	0	-	0	0.0428	E		#	0.0015	
Sodium	mg/L	03/22/2011	N001	0	-	0	1250			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	0	-	0	6481			#		
Strontium	mg/L	03/22/2011	N001	0	-	0	8.9			#	0.001	
Sulfate	mg/L	03/22/2011	N001	0	-	0	6370			#	100	
Temperature	C	03/22/2011	N001	0	-	0	9.9			#		
Turbidity	NTU	03/22/2011	N001	0	-	0	7.4			#		
Uranium	mg/L	03/22/2011	N001	0	-	0	0.66	*EN		#	0.00134	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers			Detection Limit	Uncertainty
				Lab	Data	QA						
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	0	-	0	687			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0	-	0	0.291			#	0.016	
Calcium	mg/L	03/22/2011	N001	0	-	0	487			#	0.05	
Chloride	mg/L	03/22/2011	N001	0	-	0	1330			#	66	
Magnesium	mg/L	03/22/2011	N001	0	-	0	1310			#	2.2	
Manganese	mg/L	03/22/2011	N001	0	-	0	0.626			#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	0	-	0	593			#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	0	-	0	228.4			#		
pH	s.u.	03/22/2011	N001	0	-	0	7.31			#		
Potassium	mg/L	03/22/2011	N001	0	-	0	39.1			#	1	
Selenium	mg/L	03/22/2011	N001	0	-	0	2.02	E		#	0.075	
Sodium	mg/L	03/22/2011	N001	0	-	0	7900			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	0	-	0	30831			#		
Strontium	mg/L	03/22/2011	N001	0	-	0	10.9			#	0.02	
Sulfate	mg/L	03/22/2011	N001	0	-	0	16800			#	100	
Temperature	C	03/22/2011	N001	0	-	0	10.28			#		
Turbidity	NTU	03/22/2011	N001	0	-	0	606			#		
Uranium	mg/L	03/22/2011	N001	0	-	0	0.192	*EN		#	0.00067	

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

REPORT DATE: 7/6/2011

Location: 1091 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	33 - 43	980		#		
Ammonia Total as N	mg/L	03/23/2011	N001	33 - 43	34		#	0.4	
Calcium	mg/L	03/23/2011	N001	33 - 43	471		#	0.05	
Chloride	mg/L	03/23/2011	N001	33 - 43	927		#	33	
Magnesium	mg/L	03/23/2011	N001	33 - 43	1520		#	2.2	
Manganese	mg/L	03/23/2011	N001	33 - 43	0.419		#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	33 - 43	1040		#	10	
Oxidation Reduction Potential	mV	03/23/2011	N001	33 - 43	247.5		#		
pH	s.u.	03/23/2011	N001	33 - 43	7.01		#		
Potassium	mg/L	03/23/2011	N001	33 - 43	59		#	1	
Selenium	mg/L	03/23/2011	N001	33 - 43	2.47	E	#	0.075	
Sodium	mg/L	03/23/2011	N001	33 - 43	4850		#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	33 - 43	24779		#		
Strontium	mg/L	03/23/2011	N001	33 - 43	11.7		#	0.02	
Sulfate	mg/L	03/23/2011	N001	33 - 43	12900		#	50	
Temperature	C	03/23/2011	N001	33 - 43	12.28		#		
Turbidity	NTU	03/23/2011	N001	33 - 43	9		#		
Uranium	mg/L	03/23/2011	N001	33 - 43	0.119	*EN	#	0.000134	

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

REPORT DATE: 7/6/2011

Location: 1092 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	33 - 43	459		#		
Ammonia Total as N	mg/L	03/23/2011	N001	33 - 43	28.5		#	0.4	
Calcium	mg/L	03/23/2011	N001	33 - 43	533		#	1	
Chloride	mg/L	03/23/2011	N001	33 - 43	874		#	33	
Magnesium	mg/L	03/23/2011	N001	33 - 43	1420		#	2.2	
Manganese	mg/L	03/23/2011	N001	33 - 43	2.99		#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	33 - 43	869		#	10	
Oxidation Reduction Potential	mV	03/23/2011	N001	33 - 43	233.8		#		
pH	s.u.	03/23/2011	N001	33 - 43	6.89		#		
Potassium	mg/L	03/23/2011	N001	33 - 43	65.1		#	1	
Selenium	mg/L	03/23/2011	N001	33 - 43	2.38	E	#	0.075	
Sodium	mg/L	03/23/2011	N001	33 - 43	4730		#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	33 - 43	23598		#		
Strontium	mg/L	03/23/2011	N001	33 - 43	11.6		#	0.02	
Sulfate	mg/L	03/23/2011	N001	33 - 43	12400		#	50	
Temperature	C	03/23/2011	N001	33 - 43	16.09		#		
Turbidity	NTU	03/23/2011	N001	33 - 43	10		#		
Uranium	mg/L	03/23/2011	N001	33 - 43	0.11	*EN	#	0.000134	

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

REPORT DATE: 7/6/2011

Location: 1093R WELL a replacement extraction well for 1093

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	34 - 38	419		#		
Ammonia Total as N	mg/L	03/23/2011	N001	34 - 38	288		#	4	
Calcium	mg/L	03/23/2011	N001	34 - 38	1150		#	1	
Chloride	mg/L	03/23/2011	N001	34 - 38	377		#	13.2	
Magnesium	mg/L	03/23/2011	N001	34 - 38	1260		#	2.2	
Manganese	mg/L	03/23/2011	N001	34 - 38	31.6		J #	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	34 - 38	2060		#	20	
Oxidation Reduction Potential	mV	03/23/2011	N001	34 - 38	246.9		#		
pH	s.u.	03/23/2011	N001	34 - 38	6.89		#		
Potassium	mg/L	03/23/2011	N001	34 - 38	124		#	1	
Selenium	mg/L	03/23/2011	N001	34 - 38	0.467	E	#	0.0015	
Sodium	mg/L	03/23/2011	N001	34 - 38	1460		#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	34 - 38	19328		#		
Strontium	mg/L	03/23/2011	N001	34 - 38	9.94		#	0.02	
Sulfate	mg/L	03/23/2011	N001	34 - 38	4340		#	20	
Temperature	C	03/23/2011	N001	34 - 38	8.03		#		
Turbidity	NTU	03/23/2011	N001	34 - 38	12		#		
Uranium	mg/L	03/23/2011	N001	34 - 38	0.0851	*EN	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1095 WELL

Parameter	Units	Sample		Depth Range (Ft BLS)	Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID			Lab	Data QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	39 - 49	431		#		
Ammonia Total as N	mg/L	03/23/2011	N001	39 - 49	468		#	4	
Calcium	mg/L	03/23/2011	N001	39 - 49	867		#	1	
Chloride	mg/L	03/23/2011	N001	39 - 49	285		#	6.6	
Magnesium	mg/L	03/23/2011	N001	39 - 49	1290		#	2.2	
Manganese	mg/L	03/23/2011	N001	39 - 49	34.9		J #	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	39 - 49	1830		#	20	
Oxidation Reduction Potential	mV	03/23/2011	N001	39 - 49	275.3		#		
pH	s.u.	03/23/2011	N001	39 - 49	6.43		#		
Potassium	mg/L	03/23/2011	N001	39 - 49	135		#	1	
Selenium	mg/L	03/23/2011	N001	39 - 49	0.19	E	#	0.0015	
Sodium	mg/L	03/23/2011	N001	39 - 49	1120		#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	39 - 49	18258		#		
Strontium	mg/L	03/23/2011	N001	39 - 49	8.79		#	0.02	
Sulfate	mg/L	03/23/2011	N001	39 - 49	4880		#	100	
Temperature	C	03/23/2011	N001	39 - 49	12.97		#		
Turbidity	NTU	03/23/2011	N001	39 - 49	31		#		
Uranium	mg/L	03/23/2011	N001	39 - 49	0.0536	*EN	#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1096 WELL

Parameter	Units	Sample		Depth Range		Result	Qualifiers		Detection Limit	Uncertainty
		Date	ID	(Ft BLS)	Lab		Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	57.5	- 66.5	830		#		
Ammonia Total as N	mg/L	03/23/2011	N001	57.5	- 66.5	4.98		#	0.16	
Calcium	mg/L	03/23/2011	N001	57.5	- 66.5	412		#	0.05	
Chloride	mg/L	03/23/2011	N001	57.5	- 66.5	971		#	6.6	
Magnesium	mg/L	03/23/2011	N001	57.5	- 66.5	1110		#	2.2	
Manganese	mg/L	03/23/2011	N001	57.5	- 66.5	0.113		#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	57.5	- 66.5	648		#	10	
Oxidation Reduction Potential	mV	03/23/2011	N001	57.5	- 66.5	226.5		#		
pH	s.u.	03/23/2011	N001	57.5	- 66.5	7.13		#		
Potassium	mg/L	03/23/2011	N001	57.5	- 66.5	48.7		#	1	
Selenium	mg/L	03/23/2011	N001	57.5	- 66.5	2.94	E	#	0.075	
Sodium	mg/L	03/23/2011	N001	57.5	- 66.5	5990		#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	57.5	- 66.5	25650		#		
Strontium	mg/L	03/23/2011	N001	57.5	- 66.5	10.3		#	0.02	
Sulfate	mg/L	03/23/2011	N001	57.5	- 66.5	13600		#	100	
Temperature	C	03/23/2011	N001	57.5	- 66.5	15.16		#		
Turbidity	NTU	03/23/2011	N001	57.5	- 66.5	4		#		
Uranium	mg/L	03/23/2011	N001	57.5	- 66.5	0.11	*EN	#	0.00067	

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

REPORT DATE: 7/6/2011

Location: MW1 WELL Just N of Disposal Cell

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)	Result	Lab	Qualifiers Data	QA	Detection Limit	Uncertainty
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	-	1564		FQ	#		
Ammonia Total as N	mg/L	03/24/2011	N001	-	3.23		FQ	#	0.16	
Calcium	mg/L	03/24/2011	N001	-	72.3		FQ	#	0.05	
Chloride	mg/L	03/24/2011	N001	-	4540		FQ	#	33	
Magnesium	mg/L	03/24/2011	N001	-	33.6		FQ	#	0.55	
Manganese	mg/L	03/24/2011	N001	-	0.0836		FQ	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	-	0.412		FQ	#	0.01	
Oxidation Reduction Potential	mV	03/24/2011	N001	-	133		FQ	#		
pH	s.u.	03/24/2011	N001	-	6.89		FQ	#		
Potassium	mg/L	03/24/2011	N001	-	13.5		JFQ	#	1	
Selenium	mg/L	03/24/2011	N001	-	0.0015	UE	FQ	#	0.0015	
Sodium	mg/L	03/24/2011	N001	-	4330		FQ	#	2	
Specific Conductance	µmhos/cm	03/24/2011	N001	-	19292		FQ	#		
Strontium	mg/L	03/24/2011	N001	-	8.64		FQ	#	0.001	
Sulfate	mg/L	03/24/2011	N001	-	2230		FQ	#	10	
Temperature	C	03/24/2011	N001	-	14.8		FQ	#		
Turbidity	NTU	03/24/2011	N001	-	6.54		FQ	#		
Uranium	mg/L	03/24/2011	N001	-	0.000842	*EN	FQ	#	0.000067	

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**

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/22/2011	0001	0.0411	J	U	#	0.016	
Calcium	mg/L	03/22/2011	0001	62.2			#	0.05	
Chloride	mg/L	03/22/2011	0001	12.6		J	#	0.066	
Magnesium	mg/L	03/22/2011	0001	12.3			#	0.11	
Manganese	mg/L	03/22/2011	0001	0.00932			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	0.565			#	0.05	
Potassium	mg/L	03/22/2011	0001	2.16	B		#	0.05	
Selenium	mg/L	03/22/2011	0001	0.0015	U		#	0.0015	
Sodium	mg/L	03/22/2011	0001	38.5			#	0.1	
Strontium	mg/L	03/22/2011	0001	0.787			#	0.001	
Sulfate	mg/L	03/22/2011	0001	140			#	1	
Uranium	mg/L	03/22/2011	0001	0.00191			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	69			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.0707	J	U	#	0.016	
Calcium	mg/L	03/22/2011	N001	64.5			#	0.05	
Chloride	mg/L	03/22/2011	N001	12.6		J	#	0.066	
Magnesium	mg/L	03/22/2011	N001	12.7			#	0.11	
Manganese	mg/L	03/22/2011	N001	0.0683			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	0.675			#	0.05	
Oxidation Reduction Potential	mV	03/22/2011	N001	123.7			#		
pH	s.u.	03/22/2011	N001	7.77			#		
Potassium	mg/L	03/22/2011	N001	2.21	B		#	0.05	
Selenium	mg/L	03/22/2011	N001	0.0015	U		#	0.0015	
Sodium	mg/L	03/22/2011	N001	38.1			#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	575			#		
Strontium	mg/L	03/22/2011	N001	0.806			#	0.001	
Sulfate	mg/L	03/22/2011	N001	144			#	1	
Temperature	C	03/22/2011	N001	7.45			#		
Turbidity	NTU	03/22/2011	N001	40.5			#		
Uranium	mg/L	03/22/2011	N001	0.00196			#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0655 SURFACE LOCATION Ditch in NW end of floodplain

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	322			#		
Ammonia Total as N	mg/L	03/23/2011	N001	0.131		U	#	0.016	
Calcium	mg/L	03/23/2011	N001	292			#	0.05	
Chloride	mg/L	03/23/2011	N001	110			#	0.66	
Magnesium	mg/L	03/23/2011	N001	90.7			#	0.11	
Manganese	mg/L	03/23/2011	N001	0.0556			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	0.66			#	0.05	
Oxidation Reduction Potential	mV	03/23/2011	N001	28.6			#		
pH	s.u.	03/23/2011	N001	8.14			#		
Potassium	mg/L	03/23/2011	N001	11		J	#	1	
Selenium	mg/L	03/23/2011	N001	0.00308	B		#	0.0015	
Sodium	mg/L	03/23/2011	N001	1360			#	2	
Specific Conductance	µmhos/cm	03/23/2011	N001	6883			#		
Strontium	mg/L	03/23/2011	N001	12.2			#	0.02	
Sulfate	mg/L	03/23/2011	N001	3040			#	100	
Temperature	C	03/23/2011	N001	9.85			#		
Turbidity	NTU	03/23/2011	N001	9.82			#		
Uranium	mg/L	03/23/2011	N001	0.0413			#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/22/2011	0001	0.0746	J	UJ	#	0.016	
Calcium	mg/L	03/22/2011	0001	60.3		J	#	0.05	
Chloride	mg/L	03/22/2011	0001	39.7		J	#	0.66	
Magnesium	mg/L	03/22/2011	0001	14.1		J	#	0.11	
Manganese	mg/L	03/22/2011	0001	0.00736		J	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	1.8		J	#	0.05	
Potassium	mg/L	03/22/2011	0001	2.38	BE	J	#	0.05	
Selenium	mg/L	03/22/2011	0001	0.00182	B	J	#	0.0015	
Sodium	mg/L	03/22/2011	0001	49.6		J	#	0.1	
Strontium	mg/L	03/22/2011	0001	0.786		J	#	0.001	
Sulfate	mg/L	03/22/2011	0001	713		J	#	5	
Uranium	mg/L	03/22/2011	0001	0.00329	E	J	#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	132			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.0814	J	U	#	0.016	
Calcium	mg/L	03/22/2011	N001	58.6			#	0.05	
Chloride	mg/L	03/22/2011	N001	12.6			#	0.66	
Magnesium	mg/L	03/22/2011	N001	11.8			#	0.11	
Manganese	mg/L	03/22/2011	N001	0.0558			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	0.56			#	0.05	
Oxidation Reduction Potential	mV	03/22/2011	N001	159.2			#		
pH	s.u.	03/22/2011	N001	8.43			#		
Potassium	mg/L	03/22/2011	N001	2.38	BE		#	0.05	
Selenium	mg/L	03/22/2011	N001	0.0015	U		#	0.0015	
Sodium	mg/L	03/22/2011	N001	39.7			#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	665			#		
Strontium	mg/L	03/22/2011	N001	0.751			#	0.001	
Sulfate	mg/L	03/22/2011	N001	148			#	1	
Temperature	C	03/22/2011	N001	8.07			#		
Turbidity	NTU	03/22/2011	N001	44			#		
Uranium	mg/L	03/22/2011	N001	0.00192	E		#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/23/2011	0001	0.0546	J	U	#	0.016	
Calcium	mg/L	03/23/2011	0001	64.2			#	0.05	
Chloride	mg/L	03/23/2011	0001	12.5			#	0.66	
Magnesium	mg/L	03/23/2011	0001	13.6			#	0.11	
Manganese	mg/L	03/23/2011	0001	0.00831			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	0001	0.329			#	0.05	
Potassium	mg/L	03/23/2011	0001	2.41	B		#	0.05	
Selenium	mg/L	03/23/2011	0001	0.0015	U		#	0.0015	
Sodium	mg/L	03/23/2011	0001	42.8			#	0.1	
Strontium	mg/L	03/23/2011	0001	0.843			#	0.001	
Sulfate	mg/L	03/23/2011	0001	146			#	1	
Uranium	mg/L	03/23/2011	0001	0.00198			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	160			#		
Ammonia Total as N	mg/L	03/23/2011	N001	0.0663	J	U	#	0.016	
Calcium	mg/L	03/23/2011	N001	57.9			#	0.05	
Chloride	mg/L	03/23/2011	N001	13.1			#	0.66	
Magnesium	mg/L	03/23/2011	N001	12.1			#	0.11	
Manganese	mg/L	03/23/2011	N001	0.0447			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	0.323			#	0.05	
Oxidation Reduction Potential	mV	03/23/2011	N001	-151.8			#		
pH	s.u.	03/23/2011	N001	8.7			#		
Potassium	mg/L	03/23/2011	N001	2.48	BE		#	0.05	
Selenium	mg/L	03/23/2011	N001	0.0015	U		#	0.0015	
Sodium	mg/L	03/23/2011	N001	39.9			#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	642			#		
Strontium	mg/L	03/23/2011	N001	0.77			#	0.001	
Sulfate	mg/L	03/23/2011	N001	152			#	1	
Temperature	C	03/23/2011	N001	12.16			#		
Turbidity	NTU	03/23/2011	N001	27.8			#		
Uranium	mg/L	03/23/2011	N001	0.00191	E		#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0899 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/24/2011	0001	0.047	J	U	#	0.016	
Calcium	mg/L	03/24/2011	0001	65.4			#	0.05	
Chloride	mg/L	03/24/2011	0001	11.7			#	0.66	
Magnesium	mg/L	03/24/2011	0001	12.8			#	0.11	
Manganese	mg/L	03/24/2011	0001	0.00775			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	0001	0.358			#	0.05	
Potassium	mg/L	03/24/2011	0001	2.11	B		#	0.05	
Selenium	mg/L	03/24/2011	0001	0.0015	U		#	0.0015	
Sodium	mg/L	03/24/2011	0001	39.7			#	0.1	
Strontium	mg/L	03/24/2011	0001	0.835			#	0.001	
Sulfate	mg/L	03/24/2011	0001	135			#	1	
Uranium	mg/L	03/24/2011	0001	0.00187			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/24/2011	N001	116			#		
Ammonia Total as N	mg/L	03/24/2011	N001	0.0924	J	U	#	0.016	
Calcium	mg/L	03/24/2011	N001	65.2			#	0.05	
Chloride	mg/L	03/24/2011	N001	11.5			#	0.66	
Magnesium	mg/L	03/24/2011	N001	13			#	0.11	
Manganese	mg/L	03/24/2011	N001	0.053			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/24/2011	N001	0.344			#	0.05	
Oxidation Reduction Potential	mV	03/24/2011	N001	-27.6			#		
pH	s.u.	03/24/2011	N001	8.3			#		
Potassium	mg/L	03/24/2011	N001	2.31	B		#	0.05	
Selenium	mg/L	03/24/2011	N001	0.0015	U		#	0.0015	
Sodium	mg/L	03/24/2011	N001	38.4			#	0.1	
Specific Conductance	µmhos/cm	03/24/2011	N001	568			#		
Strontium	mg/L	03/24/2011	N001	0.821			#	0.001	
Sulfate	mg/L	03/24/2011	N001	135			#	1	
Temperature	C	03/24/2011	N001	8.46			#		
Turbidity	NTU	03/24/2011	N001	23.9			#		
Uranium	mg/L	03/24/2011	N001	0.00196			#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/25/2011	0001	0.0453	J	U	#	0.016	
Calcium	mg/L	03/25/2011	0001	64.4			#	0.05	
Chloride	mg/L	03/25/2011	0001	11.2			#	0.66	
Magnesium	mg/L	03/25/2011	0001	12.9			#	0.11	
Manganese	mg/L	03/25/2011	0001	0.0305			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	0001	0.325			#	0.05	
Potassium	mg/L	03/25/2011	0001	2.07	B		#	0.05	
Selenium	mg/L	03/25/2011	0001	0.0015	U		#	0.0015	
Sodium	mg/L	03/25/2011	0001	38.9			#	0.1	
Strontium	mg/L	03/25/2011	0001	0.819			#	0.001	
Sulfate	mg/L	03/25/2011	0001	136			#	1	
Uranium	mg/L	03/25/2011	0001	0.00187			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/25/2011	N001	153			#		
Ammonia Total as N	mg/L	03/25/2011	N001	0.0417	J	U	#	0.016	
Calcium	mg/L	03/25/2011	N001	63.9			#	0.05	
Chloride	mg/L	03/25/2011	N001	11.5			#	0.66	
Magnesium	mg/L	03/25/2011	N001	12.8			#	0.11	
Manganese	mg/L	03/25/2011	N001	0.0601			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/25/2011	N001	0.328			#	0.05	
Oxidation Reduction Potential	mV	03/25/2011	N001	184.8			#		
pH	s.u.	03/25/2011	N001	8.25			#		
Potassium	mg/L	03/25/2011	N001	2.14	B		#	0.05	
Selenium	mg/L	03/25/2011	N001	0.0015	U		#	0.0015	
Sodium	mg/L	03/25/2011	N001	37.2			#	0.1	
Specific Conductance	µmhos/cm	03/25/2011	N001	604			#		
Strontium	mg/L	03/25/2011	N001	0.814			#	0.001	
Sulfate	mg/L	03/25/2011	N001	137			#	1	
Temperature	C	03/25/2011	N001	6.59			#		
Turbidity	NTU	03/25/2011	N001	27.3			#		
Uranium	mg/L	03/25/2011	N001	0.00188			#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0956 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/22/2011	0001	0.0358	J	U	#	0.016	
Calcium	mg/L	03/22/2011	0001	61.8			#	0.05	
Chloride	mg/L	03/22/2011	0001	11.4			#	0.66	
Magnesium	mg/L	03/22/2011	0001	12.2			#	0.11	
Manganese	mg/L	03/22/2011	0001	0.00728			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	0.35			#	0.05	
Potassium	mg/L	03/22/2011	0001	2.09	B		#	0.05	
Selenium	mg/L	03/22/2011	0001	0.0015	U		#	0.0015	
Sodium	mg/L	03/22/2011	0001	37.1			#	0.1	
Strontium	mg/L	03/22/2011	0001	0.784			#	0.001	
Sulfate	mg/L	03/22/2011	0001	138			#	1	
Uranium	mg/L	03/22/2011	0001	0.0017			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	188			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.0432	J	U	#	0.016	
Calcium	mg/L	03/22/2011	N001	64.3			#	0.05	
Chloride	mg/L	03/22/2011	N001	11.3			#	0.66	
Magnesium	mg/L	03/22/2011	N001	12.7			#	0.11	
Manganese	mg/L	03/22/2011	N001	0.0657			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	0.348			#	0.05	
Oxidation Reduction Potential	mV	03/22/2011	N001	189.6			#		
pH	s.u.	03/22/2011	N001	8.63			#		
Potassium	mg/L	03/22/2011	N001	2	B		#	0.05	
Selenium	mg/L	03/22/2011	N001	0.0015	U		#	0.0015	
Sodium	mg/L	03/22/2011	N001	36.5			#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	648			#		
Strontium	mg/L	03/22/2011	N001	0.802			#	0.001	
Sulfate	mg/L	03/22/2011	N001	137			#	1	
Temperature	C	03/22/2011	N001	13.1			#		
Turbidity	NTU	03/22/2011	N001	33.4			#		
Uranium	mg/L	03/22/2011	N001	0.00163			#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 0965 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/22/2011	0001	0.0297	J	U	#	0.016	
Calcium	mg/L	03/22/2011	0001	63.8			#	0.05	
Chloride	mg/L	03/22/2011	0001	11.5			#	0.66	
Magnesium	mg/L	03/22/2011	0001	12.7			#	0.11	
Manganese	mg/L	03/22/2011	0001	0.00673			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	0.417			#	0.05	
Potassium	mg/L	03/22/2011	0001	2.12	B		#	0.05	
Selenium	mg/L	03/22/2011	0001	0.0015	U		#	0.0015	
Sodium	mg/L	03/22/2011	0001	40.2			#	0.1	
Strontium	mg/L	03/22/2011	0001	0.814			#	0.001	
Sulfate	mg/L	03/22/2011	0001	139			#	1	
Uranium	mg/L	03/22/2011	0001	0.00179			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	174			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.0492	J	U	#	0.016	
Calcium	mg/L	03/22/2011	N001	66.2			#	0.05	
Chloride	mg/L	03/22/2011	N001	11.4			#	0.66	
Magnesium	mg/L	03/22/2011	N001	13.1			#	0.11	
Manganese	mg/L	03/22/2011	N001	0.0578			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	0.354			#	0.05	
Oxidation Reduction Potential	mV	03/22/2011	N001	156.1			#		
pH	s.u.	03/22/2011	N001	8.64			#		
Potassium	mg/L	03/22/2011	N001	2.46	B		#	0.05	
Selenium	mg/L	03/22/2011	N001	0.0015	U		#	0.0015	
Sodium	mg/L	03/22/2011	N001	38.1			#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	588			#		
Strontium	mg/L	03/22/2011	N001	0.83			#	0.001	
Sulfate	mg/L	03/22/2011	N001	136			#	1	
Temperature	C	03/22/2011	N001	11.06			#		
Turbidity	NTU	03/22/2011	N001	49.6			#		
Uranium	mg/L	03/22/2011	N001	0.00179			#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1203 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/22/2011	0001	0.016	U		#	0.016	
Calcium	mg/L	03/22/2011	0001	59.3			#	0.05	
Chloride	mg/L	03/22/2011	0001	13.2			#	0.66	
Magnesium	mg/L	03/22/2011	0001	11.8			#	0.11	
Manganese	mg/L	03/22/2011	0001	0.0183			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	0001	0.369			#	0.05	
Potassium	mg/L	03/22/2011	0001	2.27	B		#	0.05	
Selenium	mg/L	03/22/2011	0001	0.0015	UN		#	0.0015	
Sodium	mg/L	03/22/2011	0001	37			#	0.1	
Strontium	mg/L	03/22/2011	0001	0.741			#	0.001	
Sulfate	mg/L	03/22/2011	0001	147			#	1	
Uranium	mg/L	03/22/2011	0001	0.00165			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	125			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.0553	J	U	#	0.016	
Calcium	mg/L	03/22/2011	N001	60.4			#	0.05	
Chloride	mg/L	03/22/2011	N001	13			#	0.66	
Magnesium	mg/L	03/22/2011	N001	12.4			#	0.11	
Manganese	mg/L	03/22/2011	N001	0.0847			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	0.362			#	0.05	
Oxidation Reduction Potential	mV	03/22/2011	N001	97.6			#		
pH	s.u.	03/22/2011	N001	8.59			#		
Potassium	mg/L	03/22/2011	N001	2.74	B		#	0.05	
Selenium	mg/L	03/22/2011	N001	0.0015	UN		#	0.0015	
Sodium	mg/L	03/22/2011	N001	38.2			#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	564			#		
Strontium	mg/L	03/22/2011	N001	0.746			#	0.001	
Sulfate	mg/L	03/22/2011	N001	147			#	1	
Temperature	C	03/22/2011	N001	13.15			#		
Turbidity	NTU	03/22/2011	N001	34.9			#		
Uranium	mg/L	03/22/2011	N001	0.0019			#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1205 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Ammonia Total as N	mg/L	03/23/2011	0001	0.0302	J	U	#	0.016	
Calcium	mg/L	03/23/2011	0001	58.5			#	0.05	
Chloride	mg/L	03/23/2011	0001	12.6			#	0.66	
Magnesium	mg/L	03/23/2011	0001	11.6			#	0.11	
Manganese	mg/L	03/23/2011	0001	0.00501			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	0001	0.388			#	0.05	
Potassium	mg/L	03/23/2011	0001	2.16	B		#	0.05	
Selenium	mg/L	03/23/2011	0001	0.0015	UN		#	0.0015	
Sodium	mg/L	03/23/2011	0001	36.5			#	0.1	
Strontium	mg/L	03/23/2011	0001	0.727			#	0.001	
Sulfate	mg/L	03/23/2011	0001	142			#	1	
Uranium	mg/L	03/23/2011	0001	0.00173			#	0.000067	
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	112			#		
Ammonia Total as N	mg/L	03/23/2011	N001	0.0346	J	U	#	0.016	
Calcium	mg/L	03/23/2011	N001	65.5			#	0.05	
Chloride	mg/L	03/23/2011	N001	12.9			#	0.66	
Magnesium	mg/L	03/23/2011	N001	13			#	0.11	
Manganese	mg/L	03/23/2011	N001	0.126			#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	0.379			#	0.05	
Oxidation Reduction Potential	mV	03/23/2011	N001	41.5			#		
pH	s.u.	03/23/2011	N001	8.45			#		
Potassium	mg/L	03/23/2011	N001	2.83	B		#	0.05	
Selenium	mg/L	03/23/2011	N001	0.0015	UN		#	0.0015	
Sodium	mg/L	03/23/2011	N001	38.1			#	0.1	
Specific Conductance	µmhos/cm	03/23/2011	N001	560			#		
Strontium	mg/L	03/23/2011	N001	0.796			#	0.001	
Sulfate	mg/L	03/23/2011	N001	144			#	1	
Temperature	C	03/23/2011	N001	9.56			#		
Turbidity	NTU	03/23/2011	N001	28.5			#		
Uranium	mg/L	03/23/2011	N001	0.00183			#	0.000067	

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.
- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- R Unusable result.
- 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.

QA QUALIFIER:

- # Validated according to quality assurance guidelines.

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Surface Water Quality Data Terrace Locations

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	187			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.549			#	0.016	
Calcium	mg/L	03/22/2011	N001	134			#	0.05	
Chloride	mg/L	03/22/2011	N001	59			#	0.66	
Magnesium	mg/L	03/22/2011	N001	22.8			#	0.55	
Manganese	mg/L	03/22/2011	N001	0.0302		J	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	5.85			#	0.5	
Oxidation Reduction Potential	mV	03/22/2011	N001	224.1			#		
pH	s.u.	03/22/2011	N001	7.78			#		
Potassium	mg/L	03/22/2011	N001	7.24		J	#	1	
Selenium	mg/L	03/22/2011	N001	0.0015	UE		#	0.0015	
Sodium	mg/L	03/22/2011	N001	867			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	4014			#		
Strontium	mg/L	03/22/2011	N001	12			#	0.005	
Sulfate	mg/L	03/22/2011	N001	2280			#	10	
Temperature	C	03/22/2011	N001	15.62			#		
Turbidity	NTU	03/22/2011	N001	37.4			#		
Uranium	mg/L	03/22/2011	N001	0.0102	*EN		#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	662			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.061	J		#	0.016	
Calcium	mg/L	03/22/2011	N001	423			#	0.05	
Chloride	mg/L	03/22/2011	N001	1580			#	6.6	
Magnesium	mg/L	03/22/2011	N001	1440			#	2.2	
Manganese	mg/L	03/22/2011	N001	0.04	U	J	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	1340			#	20	
Oxidation Reduction Potential	mV	03/22/2011	N001	231.7			#		
pH	s.u.	03/22/2011	N001	8.12			#		
Potassium	mg/L	03/22/2011	N001	34.2			#	1	
Selenium	mg/L	03/22/2011	N001	1.63	E		#	0.015	
Sodium	mg/L	03/22/2011	N001	8070			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	32444			#		
Strontium	mg/L	03/22/2011	N001	10.9			#	0.02	
Sulfate	mg/L	03/22/2011	N001	18100			#	100	
Temperature	C	03/22/2011	N001	8.97			#		
Turbidity	NTU	03/22/2011	N001	91.1			#		
Uranium	mg/L	03/22/2011	N001	0.187	*EN		#	0.00067	

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

REPORT DATE: 7/6/2011

Location: 0949 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	371			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.553			#	0.016	
Calcium	mg/L	03/22/2011	N001	503			#	1	
Chloride	mg/L	03/22/2011	N001	107			#	0.66	
Magnesium	mg/L	03/22/2011	N001	207			#	2.2	
Manganese	mg/L	03/22/2011	N001	0.287			#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	45.5			#	1	
Oxidation Reduction Potential	mV	03/22/2011	N001	158.5			#		
pH	s.u.	03/22/2011	N001	7.53			#		
Potassium	mg/L	03/22/2011	N001	14.4		J	#	1	
Selenium	mg/L	03/22/2011	N001	0.47	E		#	0.0015	
Sodium	mg/L	03/22/2011	N001	576			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	5384			#		
Strontium	mg/L	03/22/2011	N001	5.78			#	0.02	
Sulfate	mg/L	03/22/2011	N001	2430			#	10	
Temperature	C	03/22/2011	N001	9.69			#		
Turbidity	NTU	03/22/2011	N001	1.01			#		
Uranium	mg/L	03/22/2011	N001	0.0508	*EN		#	0.000067	

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

REPORT DATE: 7/6/2011

Location: 1215 SURFACE LOCATION Evaporation Pond

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/23/2011	N001	718			#		
Ammonia Total as N	mg/L	03/23/2011	N001	10.6			#	0.4	
Calcium	mg/L	03/23/2011	N001	600			#	1	
Chloride	mg/L	03/23/2011	N001	2580			#	66	
Magnesium	mg/L	03/23/2011	N001	5800			#	2.2	
Manganese	mg/L	03/23/2011	N001	0.597		J	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/23/2011	N001	3460			#	50	
Oxidation Reduction Potential	mV	03/23/2011	N001	313.3			#		
pH	s.u.	03/23/2011	N001	8.1			#		
Potassium	mg/L	03/23/2011	N001	379			#	2.5	
Selenium	mg/L	03/23/2011	N001	2.5	E		#	0.075	
Sodium	mg/L	03/23/2011	N001	13000			#	5	
Specific Conductance	µmhos/cm	03/23/2011	N001	53057			#		
Strontium	mg/L	03/23/2011	N001	14.9			#	0.02	
Sulfate	mg/L	03/23/2011	N001	43000			#	200	
Temperature	C	03/23/2011	N001	8.62			#		
Turbidity	NTU	03/23/2011	N001	18			#		
Uranium	mg/L	03/23/2011	N001	3.43	*EN		#	0.00335	

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

REPORT DATE: 7/6/2011

Location: 1218 SURFACE LOCATION Seep in Washing Machine Draw

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	734			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.679			#	0.016	
Calcium	mg/L	03/22/2011	N001	421			#	0.05	
Chloride	mg/L	03/22/2011	N001	265			#	6.6	
Magnesium	mg/L	03/22/2011	N001	2530			#	2.2	
Manganese	mg/L	03/22/2011	N001	0.04	U	J	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	466			#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	201.3			#		
pH	s.u.	03/22/2011	N001	8.42			#		
Potassium	mg/L	03/22/2011	N001	66.2			#	1	
Selenium	mg/L	03/22/2011	N001	0.365	E		#	0.0015	
Sodium	mg/L	03/22/2011	N001	8950			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	21564			#		
Strontium	mg/L	03/22/2011	N001	23.3			#	0.02	
Sulfate	mg/L	03/22/2011	N001	15600			#	100	
Temperature	C	03/22/2011	N001	12.39			#		
Turbidity	NTU	03/22/2011	N001	37.4			#		
Uranium	mg/L	03/22/2011	N001	0.197	*EN		#	0.000335	

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

REPORT DATE: 7/6/2011

Location: 1219 SURFACE LOCATION

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	362			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.136		U	#	0.016	
Calcium	mg/L	03/22/2011	N001	1180			#	1	
Chloride	mg/L	03/22/2011	N001	14.5			#	0.66	
Magnesium	mg/L	03/22/2011	N001	251			#	2.2	
Manganese	mg/L	03/22/2011	N001	0.04	U	J	#	0.04	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	5.57			#	0.1	
Oxidation Reduction Potential	mV	03/22/2011	N001	153.7			#		
pH	s.u.	03/22/2011	N001	7.45			#		
Potassium	mg/L	03/22/2011	N001	21			#	1	
Selenium	mg/L	03/22/2011	N001	0.0313	E		#	0.0015	
Sodium	mg/L	03/22/2011	N001	218			#	2	
Specific Conductance	µmhos/cm	03/22/2011	N001	4192			#		
Strontium	mg/L	03/22/2011	N001	11.5			#	0.02	
Sulfate	mg/L	03/22/2011	N001	1790			#	10	
Temperature	C	03/22/2011	N001	9.78			#		
Turbidity	NTU	03/22/2011	N001	70.9			#		
Uranium	mg/L	03/22/2011	N001	0.0306	*EN		#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	284			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.0851	J	U	#	0.016	
Calcium	mg/L	03/22/2011	N001	350			#	0.05	
Chloride	mg/L	03/22/2011	N001	29.5			#	0.66	
Magnesium	mg/L	03/22/2011	N001	78.1			#	0.11	
Manganese	mg/L	03/22/2011	N001	0.149		J	#	0.002	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	1.92			#	0.1	
Oxidation Reduction Potential	mV	03/22/2011	N001	149			#		
pH	s.u.	03/22/2011	N001	8.17			#		
Potassium	mg/L	03/22/2011	N001	4.19	B		#	0.05	
Selenium	mg/L	03/22/2011	N001	0.0312	E		#	0.0015	
Sodium	mg/L	03/22/2011	N001	119			#	0.1	
Specific Conductance	µmhos/cm	03/22/2011	N001	2402			#		
Strontium	mg/L	03/22/2011	N001	3.52			#	0.001	
Sulfate	mg/L	03/22/2011	N001	1090			#	10	
Temperature	C	03/22/2011	N001	11.98			#		
Turbidity	NTU	03/22/2011	N001	68.4			#		
Uranium	mg/L	03/22/2011	N001	0.0208	*EN		#	0.000067	

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

REPORT DATE: 7/6/2011

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

Parameter	Units	Sample		Result	Qualifiers			Detection Limit	Uncertainty
		Date	ID		Lab	Data	QA		
Alkalinity, Total (as CaCO ₃)	mg/L	03/22/2011	N001	530			#		
Ammonia Total as N	mg/L	03/22/2011	N001	0.197		U	#	0.016	
Calcium	mg/L	03/22/2011	N001	431			#	0.05	
Chloride	mg/L	03/22/2011	N001	1860			#	66	
Magnesium	mg/L	03/22/2011	N001	1620			#	5.5	
Manganese	mg/L	03/22/2011	N001	0.1	U	J	#	0.1	
Nitrate + Nitrite as Nitrogen	mg/L	03/22/2011	N001	694			#	10	
Oxidation Reduction Potential	mV	03/22/2011	N001	213.1			#		
pH	s.u.	03/22/2011	N001	8.29			#		
Potassium	mg/L	03/22/2011	N001	44.5			#	2.5	
Selenium	mg/L	03/22/2011	N001	2.34	E		#	0.0075	
Sodium	mg/L	03/22/2011	N001	8680			#	5	
Specific Conductance	µmhos/cm	03/22/2011	N001	34552			#		
Strontium	mg/L	03/22/2011	N001	10.4			#	0.05	
Sulfate	mg/L	03/22/2011	N001	22700			#	100	
Temperature	C	03/22/2011	N001	5.6			#		
Turbidity	NTU	03/22/2011	N001	19.9			#		
Uranium	mg/L	03/22/2011	N001	0.198	*EN		#	0.000335	

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.
- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- R Unusable result.
- 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.

QA QUALIFIER:

- # Validated according to quality assurance guidelines.

Equipment Blank Data

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BLANKS REPORT

LAB: GENERAL ENGINEERING (Charleston, SC)

RIN: 11033665

Report Date: 7/6/2011

Parameter	Location ID	Sample Date	ID	Units	Result	Qualifiers Lab	Data	Detection Limit	Uncertainty	Sample Type
Ammonia Total as N	0999	03/24/2011	N001	mg/L	0.0745	J	U	0.016		E
Calcium	0999	03/24/2011	N001	mg/L	0.213	B		0.05		E
Chloride	0999	03/24/2011	N001	mg/L	0.288			0.066		E
Magnesium	0999	03/24/2011	N001	mg/L	0.11	U		0.11		E
Manganese	0999	03/24/2011	N001	mg/L	0.002	U		0.002		E
Nitrate + Nitrite as Nitrogen	0999	03/24/2011	N001	mg/L	0.01	U		0.01		E
Potassium	0999	03/24/2011	N001	mg/L	0.253	B	UJ	0.05		E
Selenium	0999	03/24/2011	N001	mg/L	0.0015	UN		0.0015		E
Sodium	0999	03/24/2011	N001	mg/L	0.478	B	UJ	0.1		E
Strontium	0999	03/24/2011	N001	mg/L	0.001	U		0.001		E
Sulfate	0999	03/24/2011	N001	mg/L	0.412			0.1		E
Uranium	0999	03/24/2011	N001	mg/L	0.000067	U		0.000067		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.
- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- R Unusable result.
- 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.

SAMPLE TYPES:

- E Equipment Blank.

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Static Water Level Data Floodplain Locations

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STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 7/6/2011

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0608		4893.35	03/22/2011	17:05:25	6.01	4887.34	
0610		4895.7	03/23/2011	10:00:06	9.44	4886.26	
0611		4895.62	03/23/2011	10:20:08	9.32	4886.3	
0612		4893.35	03/23/2011	11:40:00	7.06	4886.29	
0614		4892.79	03/23/2011	17:30:44	7.08	4885.71	
0615		4892.23	03/23/2011	14:25:40	7.11	4885.12	
0618		4891.51	03/24/2011	09:55:40	6.68	4884.83	
0619		4892.19	03/24/2011	14:40:30	6.92	4885.27	
0622		4890.06	03/24/2011	12:45:29	4.13	4885.93	
0623		4891.19	03/24/2011	14:10:13	5.68	4885.51	
0625		4891.23	03/24/2011	13:45:38	5.65	4885.58	
0626		4891.4	03/24/2011	17:35:53	5.29	4886.11	
0628		4889.87	03/24/2011	15:25:05	6.81	4883.06	
0630		4887.62	03/24/2011	15:53:42	1.69	4885.93	
0734		4886.55	03/23/2011	17:46:08	6.3	4880.25	
0735		4895.85	03/22/2011	13:45:53	6.56	4889.29	
0736		4887.99	03/24/2011	13:10:37	6.21	4881.78	
0766		4892.55	03/24/2011	17:25:57	9.58	4882.97	
0768		4892.33	03/24/2011	13:10:58	6.8	4885.53	
0773		4894.87	03/23/2011	10:45:11	8.45	4886.42	
0775		4892.2	03/24/2011	15:25:03	7.73	4884.47	
0779		4893.86	03/24/2011	11:00:05	10.05	4883.81	
0782R		4884.75	03/24/2011	10:35:45	7.81	4876.94	
0783R		4884.09	03/24/2011	11:02:16	7.08	4877.01	
0792		4891.52	03/24/2011	09:30:45	6.42	4885.1	
0793		4891.05	03/24/2011	09:05:47	6.23	4884.82	
0797		4908.04	03/23/2011	13:50:15	8.69	4899.35	
0798		4891.55	03/24/2011	15:00:44	7.85	4883.7	
0850	B	4907.51	03/23/2011	15:28:01	8.2	4899.31	
0853		4891.41	03/23/2011	13:40:49	6.91	4884.5	
0854		4890.09	03/25/2011	10:57:31	7.18	4882.91	
0855		4888.18	03/24/2011	13:48:33	5.13	4883.05	
0856		4887.57	03/24/2011	12:00:29	6.49	4881.08	
0857		4894.02	03/24/2011	10:40:19	10.11	4883.91	
0862		4893.83	03/22/2011	16:38:00	91.57	4802.26	

STATIC WATER LEVELS (USEE700) FOR SITE SHP01, Shiprock Disposal Site (Floodplain)
REPORT DATE: 7/6/2011

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Measurement Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0863		4893	03/22/2011	16:41:00	82.22	4810.78	
1000		4892.17	03/23/2011	17:35:00	7.25	4884.92	
1001		4892.44	03/23/2011	17:34:00	19.43	4873.01	
1008		4890.8	03/24/2011	15:50:07	7.41	4883.39	
1009		4892.1	03/23/2011	14:05:48	7.27	4884.83	
1062		4892.51	03/22/2011	16:35:00	7.7	4884.81	
1105	O	4892.4	03/23/2011	14:55:32	7.04	4885.36	
1111		4889.85	03/23/2011	16:15:52	4.65	4885.2	
1112		4890.01	03/23/2011	16:55:37	4.93	4885.08	
1113		4892	03/22/2011	18:15:24	5.11	4886.89	
1114		4892.86	03/22/2011	15:25:49	4.98	4887.88	
1115		4895.59	03/22/2011	14:55:43	7.18	4888.41	
1117		4896.7	03/22/2011	10:20:34	8.17	4888.53	
1128		4897.63	03/22/2011	11:00:24	9.16	4888.47	
1132		4894.5	03/22/2011	11:25:15	6.02	4888.48	
1134		4895.88	03/22/2011	11:50:18	7.48	4888.4	
1135		4890.71	03/24/2011	17:04:26	8.4	4882.31	
1136		4892.47	03/24/2011	14:55:48	9.38	4883.09	
1137		4891.3	03/25/2011	09:30:24	9.15	4882.15	
1138		4891.48	03/25/2011	08:45:02	9.12	4882.36	
1139		4890.44	03/24/2011	16:15:06	7.62	4882.82	
1140		4891.53	03/23/2011	15:30:22	6.17	4885.36	
1141		4892.48	03/23/2011	16:35:29	7.03	4885.45	
1142		4894.34	03/23/2011	12:05:09	9.5	4884.84	
1143		4888.07	03/24/2011	12:25:23	6.43	4881.64	

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

WATER LEVEL FLAGS: D Dry F FLOWING

Static Water Level Data Terrace Locations

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STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 7/6/2011

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement		Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
			Date	Time			
0600		4955.87	03/24/2011	15:50:26	33.48	4922.39	
0602		4956.89	03/25/2011	09:20:56	22.41	4934.48	
0603		4978.62	03/23/2011	17:45:01	31.23	4947.39	
0604		4995.87	03/25/2011	13:40:54	56.45	4939.42	
0725		4908.58	03/24/2011	16:50:35	13.57	4895.01	
0726		4939.95	03/24/2011	17:40:10	24.03	4915.92	
0727		4940.65	03/21/2011	17:50:59	7	4933.65	
0728		4964.46	03/22/2011	10:30:47	24.64	4939.82	
0730		4977.75	03/23/2011	17:00:59	36.32	4941.43	
0731		4972.15	03/24/2011	09:05:21	24.45	4947.7	
0800		4995.76	03/23/2011	12:00:00			D
0801		4995.29	03/23/2011	12:00:00			D
0802		4996.01	03/23/2011	12:00:00			D
0803		4994.4	03/23/2011	12:00:00			D
0812		5004.98	03/24/2011	11:00:38	60.69	4944.29	
0813		4984.37	03/23/2011	15:15:48	44	4940.37	
0814		4968.12	03/22/2011	13:45:17	32.67	4935.45	
0815		4953.67	03/22/2011	09:25:19	26.5	4927.17	
0816		4937.92	03/23/2011	13:15:43			B
0817		4957.34	03/25/2011	09:45:36	19.21	4938.13	
0819		4955.76	03/25/2011	10:35:54	20.28	4935.48	
0820		4954.95	03/25/2011	09:30:04	148.85	4806.1	
0821		4955.46	03/25/2011	08:56:00			D
0823		4957.65	03/24/2011	14:05:00			D
0824		4958.21	03/24/2011	15:00:23	166.46	4791.75	
0825		4958.68	03/24/2011	14:30:35	135.49	4823.19	
0826		4950.73	03/25/2011	13:20:38	17.44	4933.29	
0827		4946.92	03/25/2011	11:50:13	26.63	4920.29	
0828		4957.43	03/25/2011	11:10:00	21.69	4935.74	
0829		4941.94	03/25/2011	08:31:00			D
0830		4960.77	03/24/2011	13:00:35	16.16	4944.61	
0832		4964.65	03/22/2011	14:10:00			D
0833		4940.52	03/22/2011	16:00:19	31.53	4908.99	
0835		4930.48	03/22/2011	14:30:28	21.81	4908.67	
0836		4901.74	03/22/2011	17:15:46	30.34	4871.4	

STATIC WATER LEVELS (USEE700) FOR SITE SHP02, Shiprock Disposal Site (Terrace)
REPORT DATE: 7/6/2011

Location Code	Flow Code	Top of Casing Elevation (Ft)	Measurement Date	Time	Depth From Top of Casing (Ft)	Water Elevation (Ft)	Water Level Flag
0837		4889.54	03/23/2011	12:00:21	21.64	4867.9	
0838		4937.7	03/22/2011	16:40:52	29.52	4908.18	
0841		4984.05	03/22/2011	11:30:02	45.7	4938.35	
0843		4883.56	03/23/2011	11:30:31	14.31	4869.25	
0844		4948.46	03/22/2011	15:15:46	32.17	4916.29	
0846		4934.57	03/22/2011	14:10:00			D
0848		4949.91	03/23/2011	10:20:30	43.65	4906.26	
1002		4957.63	03/25/2011	08:39:00			D
1003		4957.84	03/25/2011	08:40:00			D
1004		4957.61	03/25/2011	08:49:00			D
1007		4962.01	03/24/2011	14:00:30	43.84	4918.17	
1049		4923.89	03/24/2011	09:25:28	8.41	4915.48	
1058		4973.58	03/24/2011	09:45:31	29.15	4944.43	
1059		4970.52	03/24/2011	10:15:35	23.1	4947.42	
1060		4970.62	03/22/2011	14:08:00			D
1067		4930.77	03/23/2011	12:00:00			D
1068		4927.97	03/22/2011	08:58:32	8.01	4919.96	
1069		4922.62	03/22/2011	09:35:54	1.81	4920.81	
1073		4991.43	03/23/2011	16:00:08	50	4941.43	
1074		4959.52	03/24/2011	13:20:17	34.02	4925.5	
1079		4925.22	03/23/2011	09:15:36	19.74	4905.48	
1120		4890.98	03/23/2011	14:14:00			D
1122		4893.62	03/23/2011	13:51:00			D
DM7		4974.44	03/24/2011	11:29:00			D
MW1		4955.64	03/24/2011	15:20:39	50.76	4904.88	

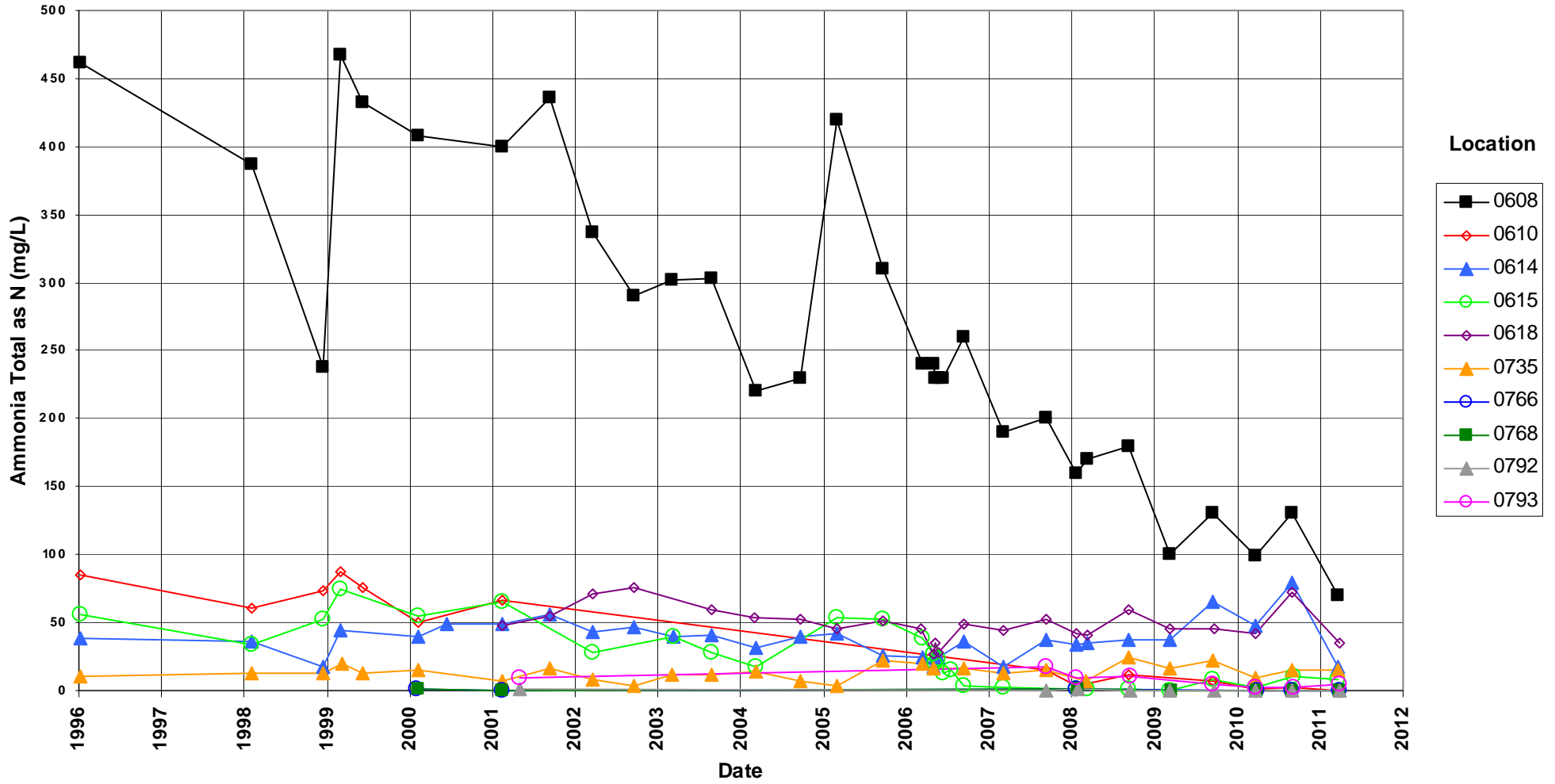
FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT F OFF SITE
 N UNKNOWN O ON SITE U UPGRADIENT

WATER LEVEL FLAGS: D Dry F FLOWING

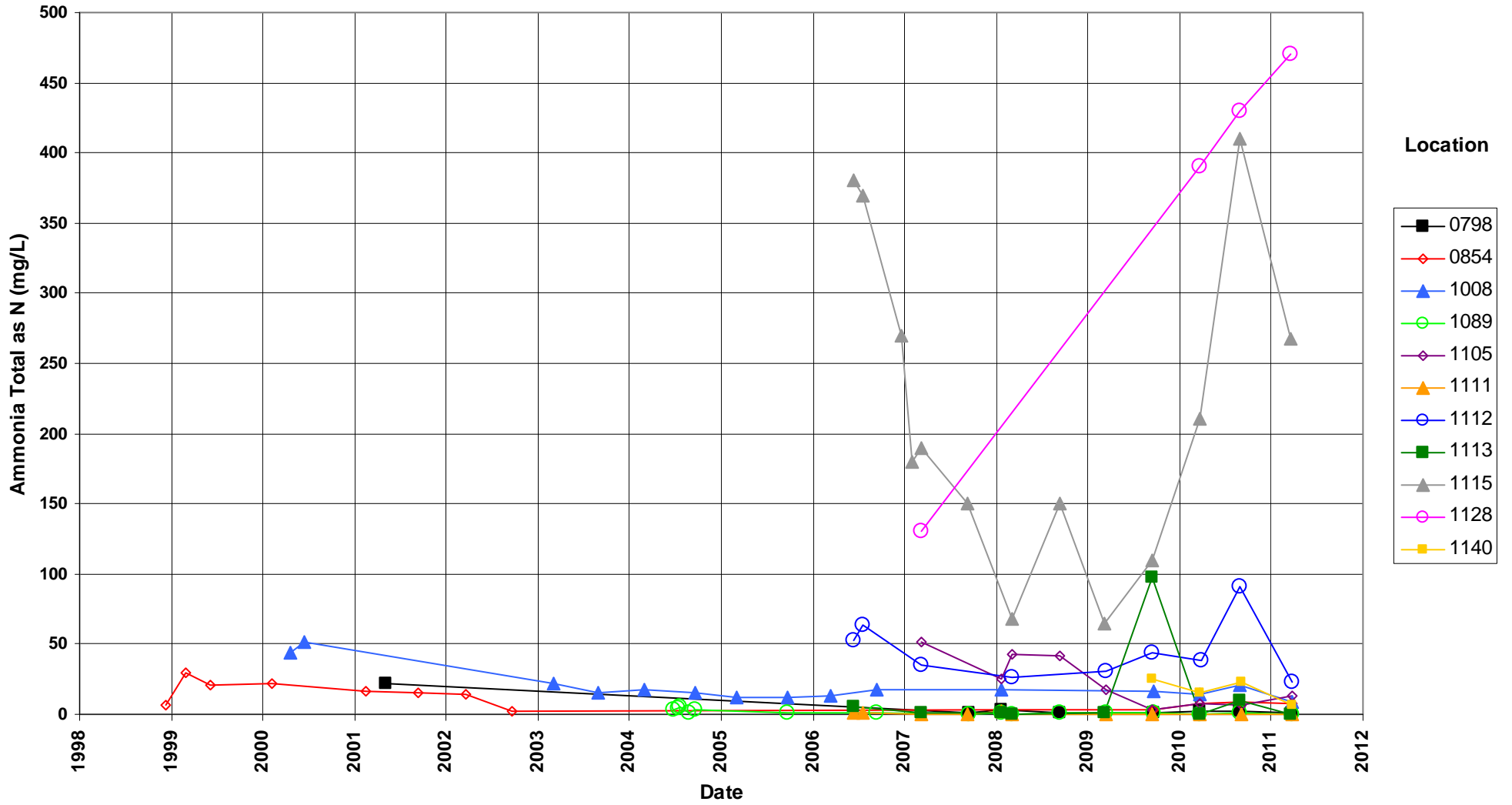
**Time-Concentration Graphs
Floodplain Groundwater Locations**

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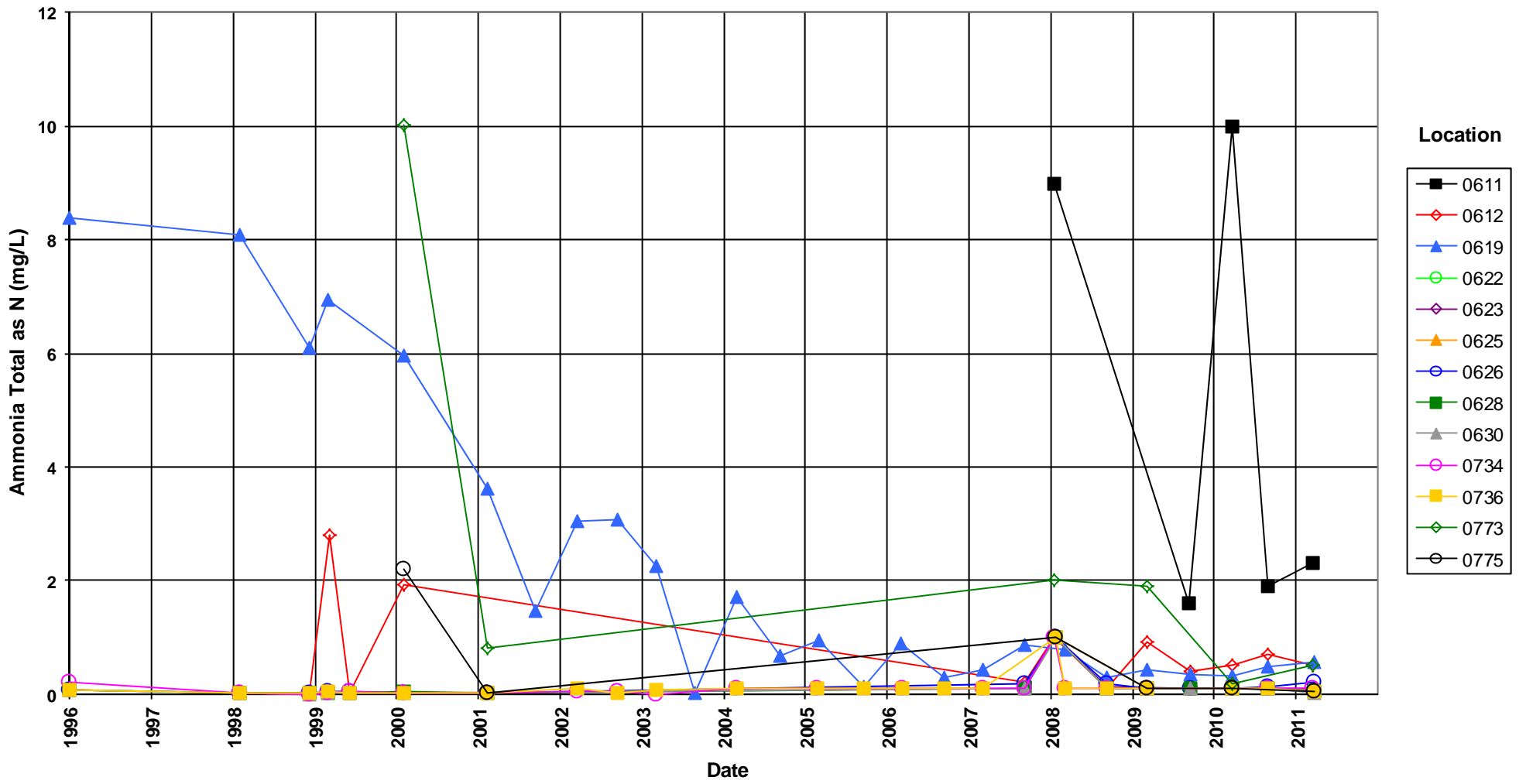
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



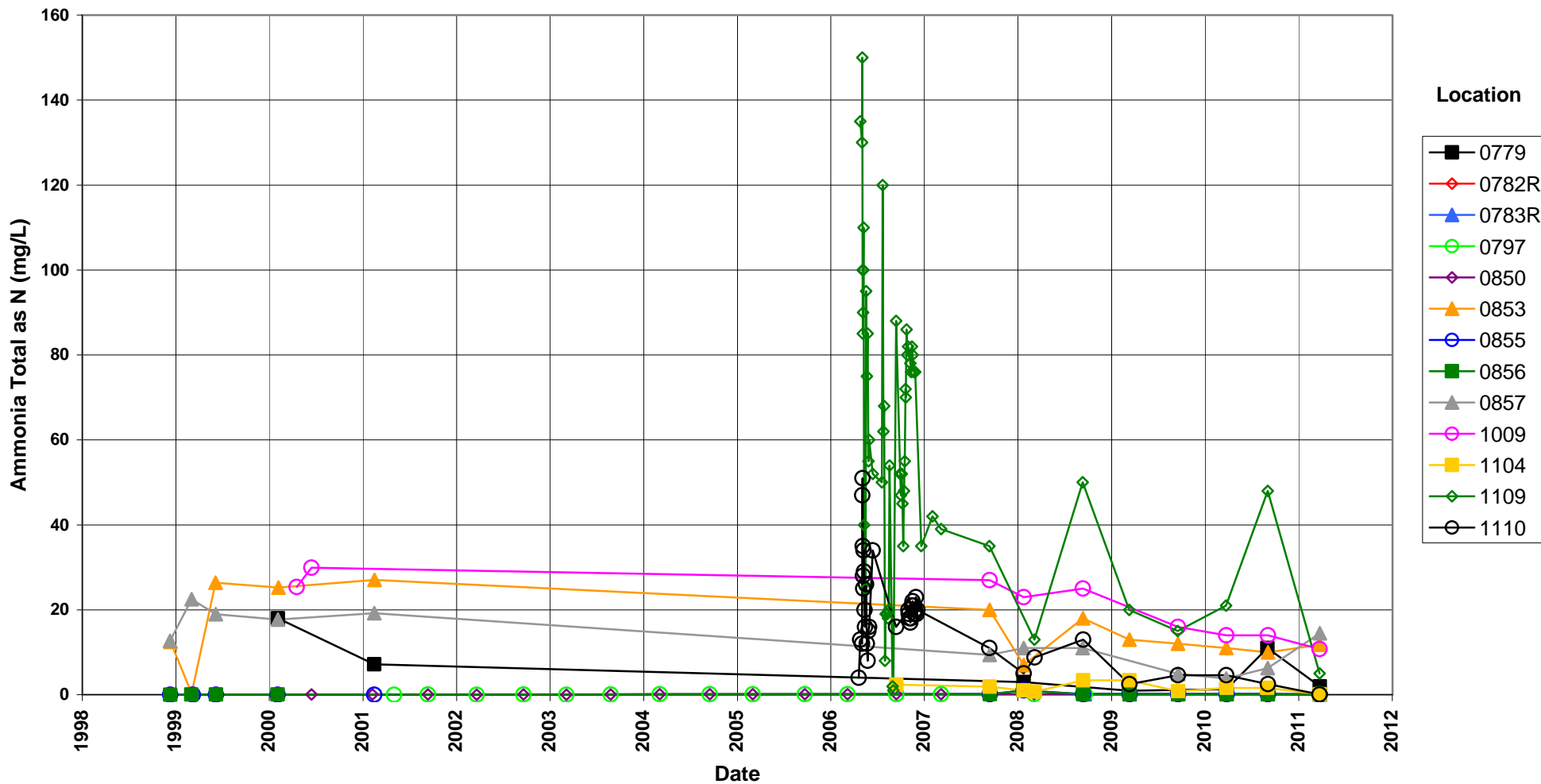
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



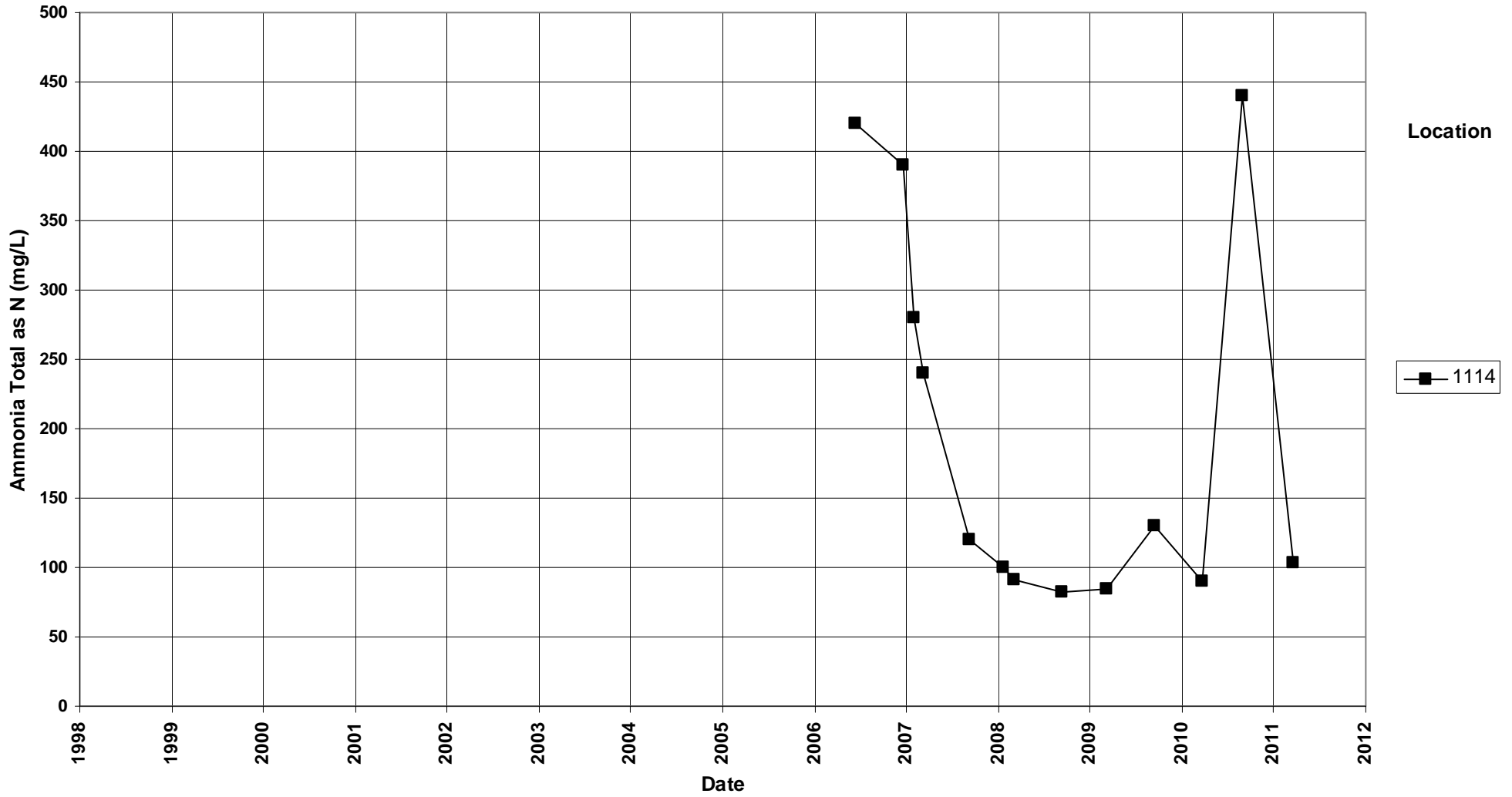
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



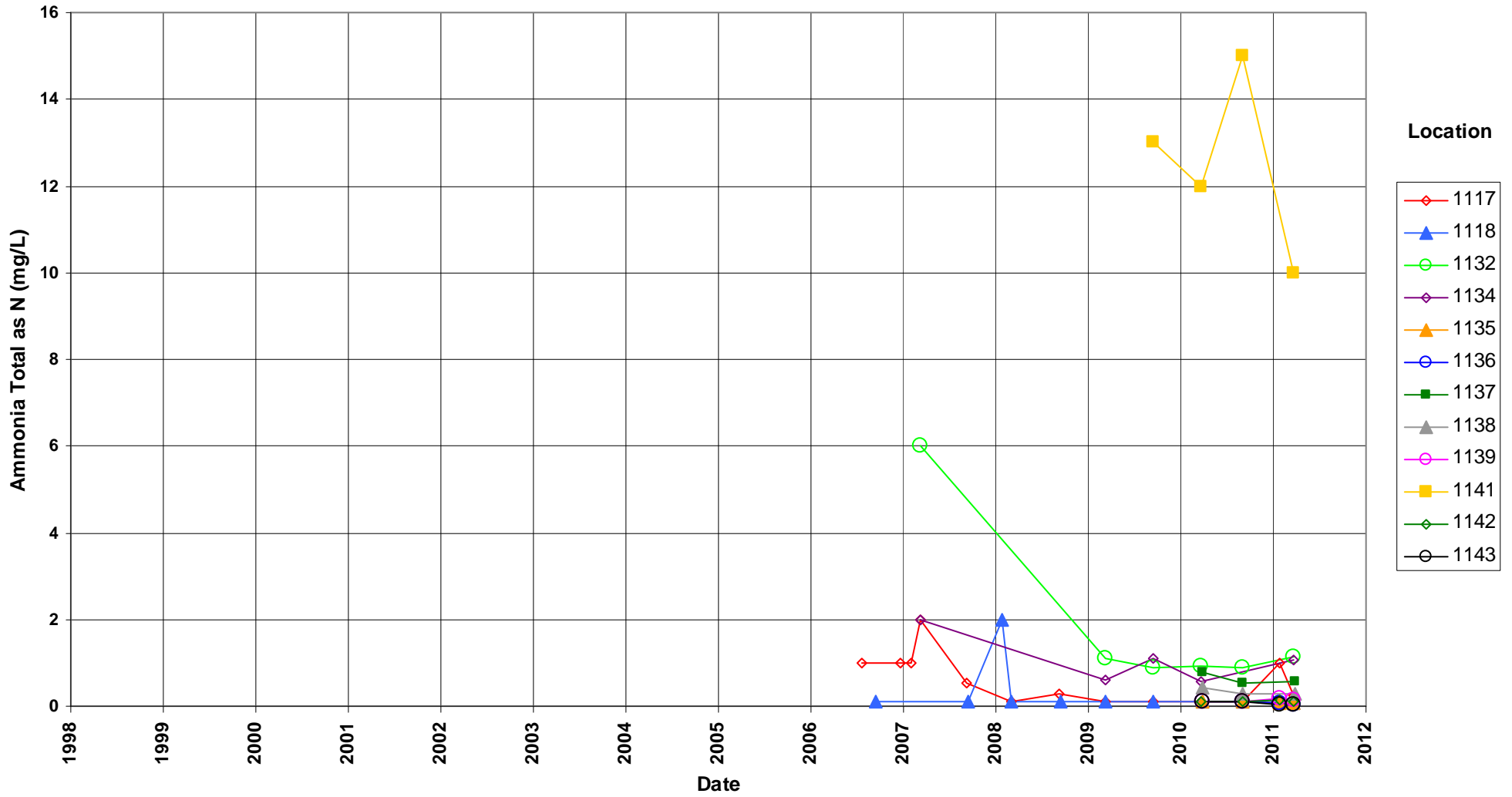
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



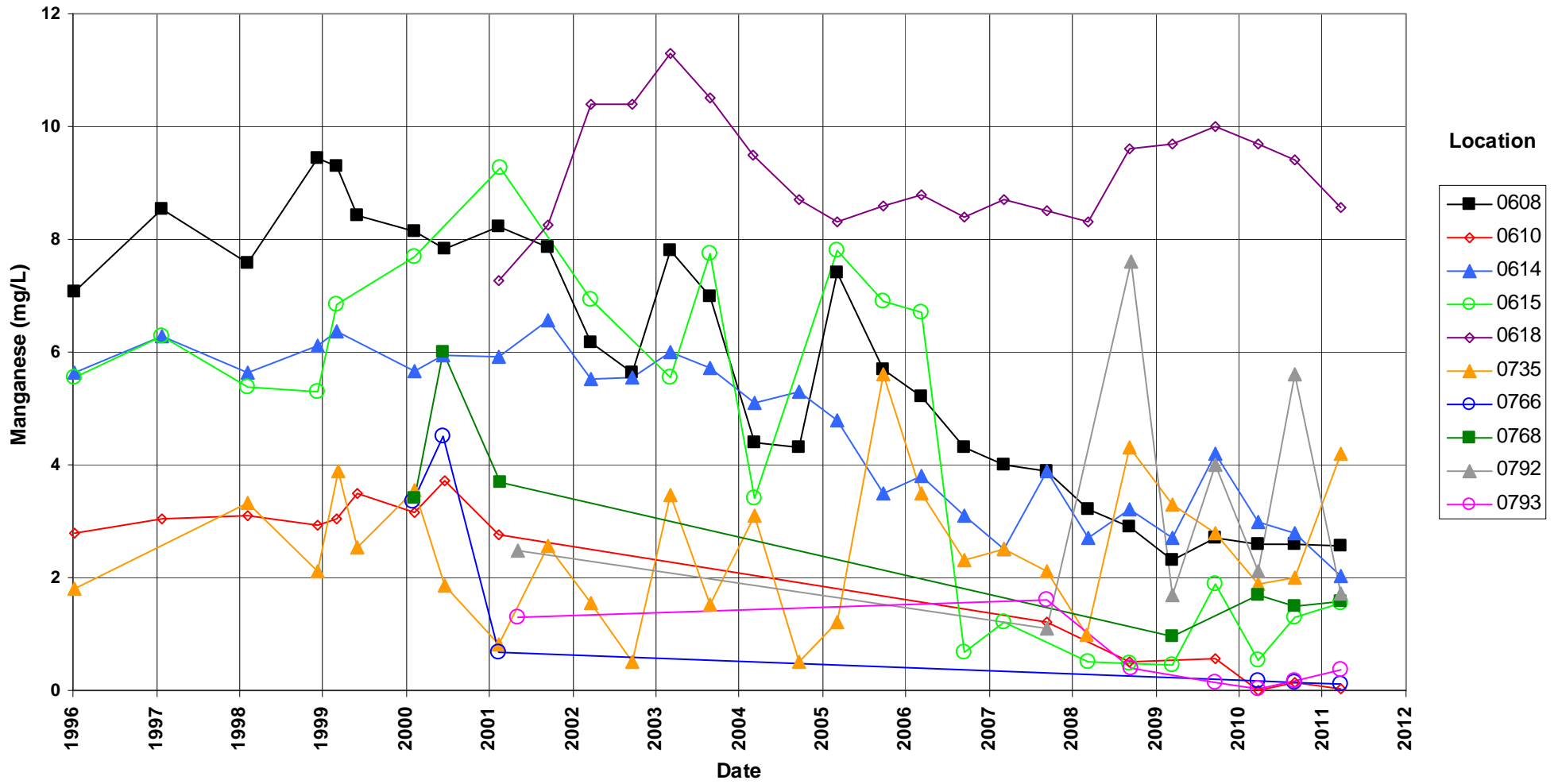
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



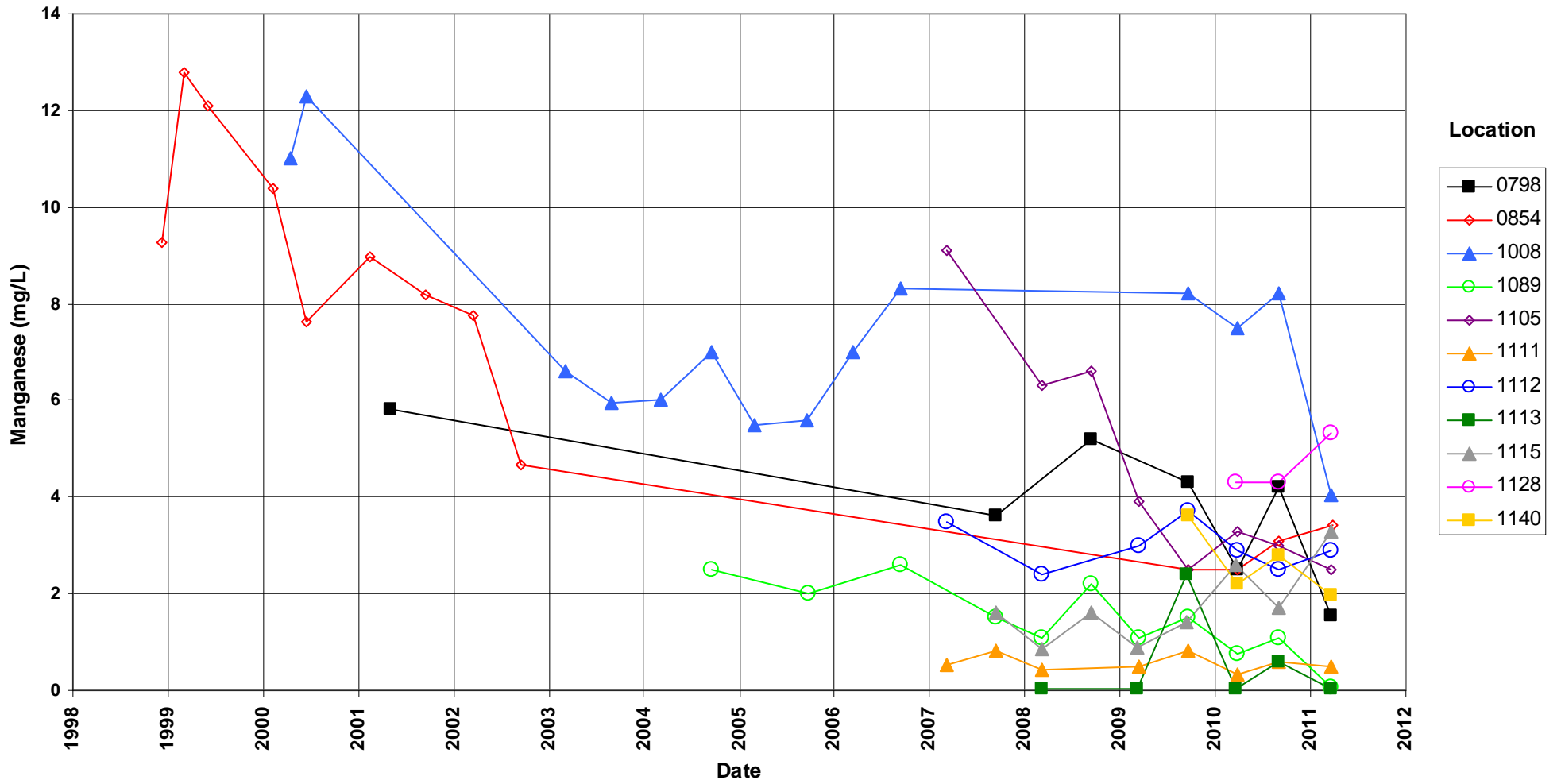
Shiprock Disposal Site (Floodplain) Ammonia Total as N Concentration



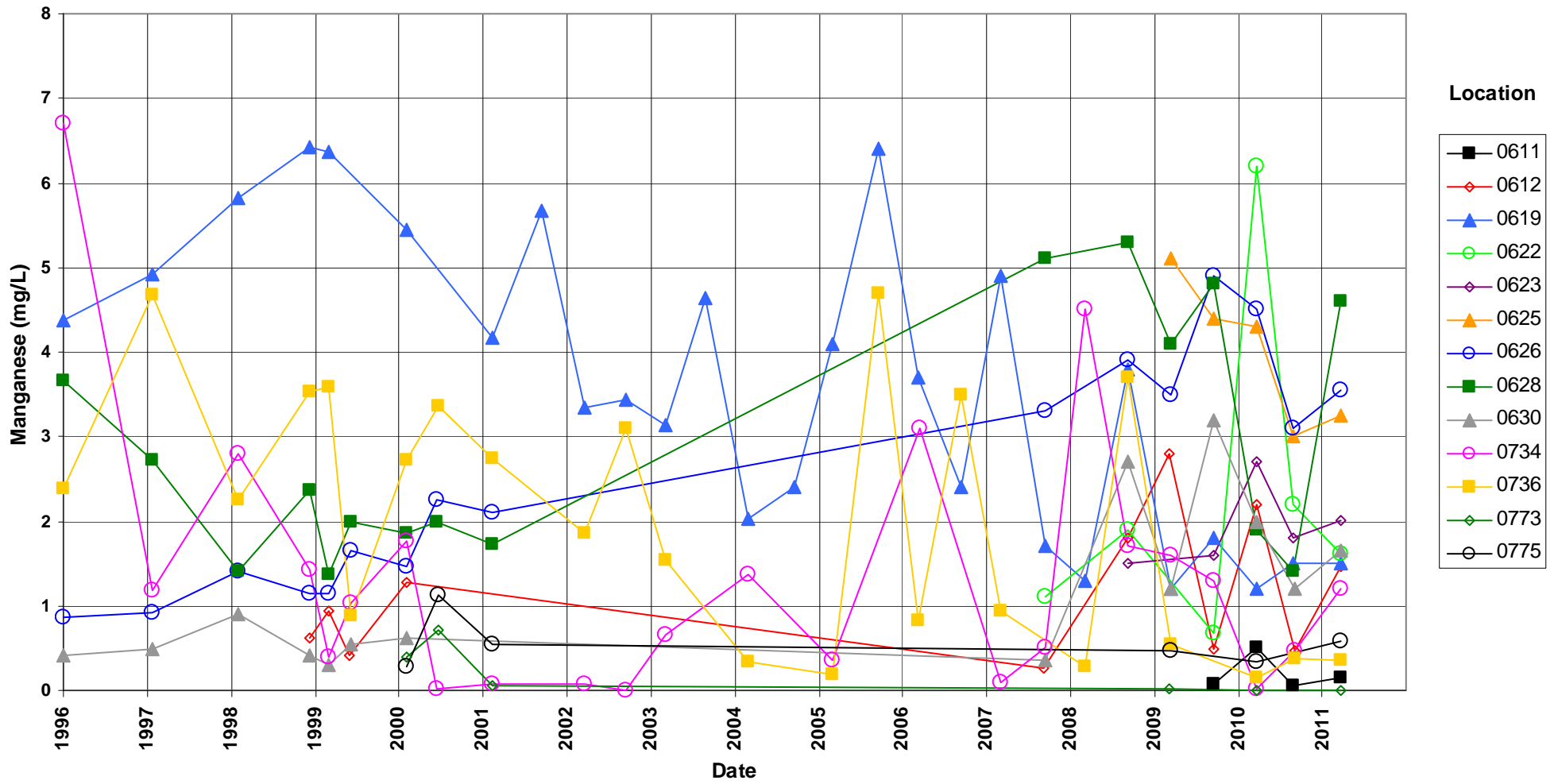
Shiprock Disposal Site (Floodplain) Manganese Concentration



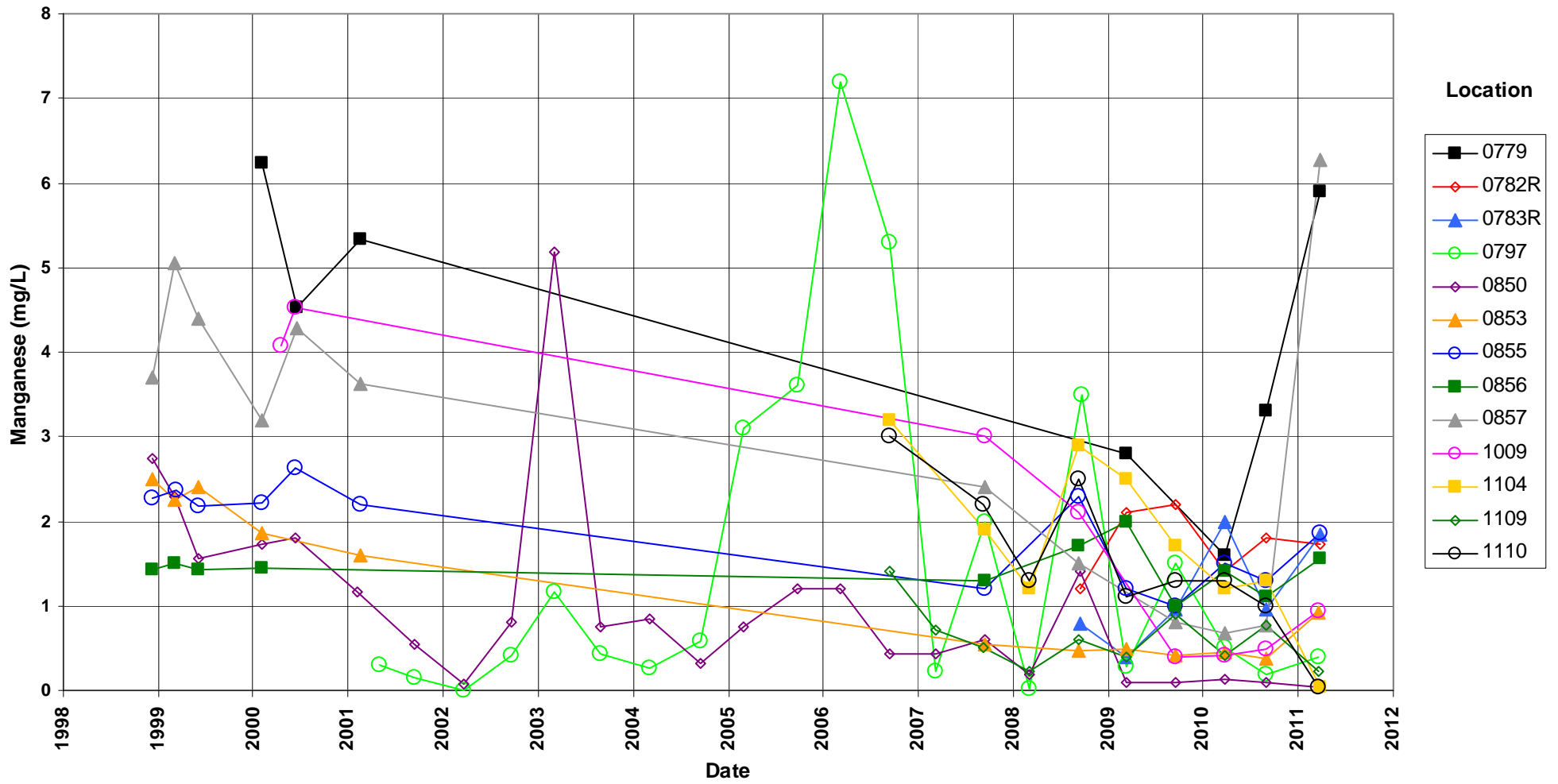
Shiprock Disposal Site (Floodplain) Manganese Concentration



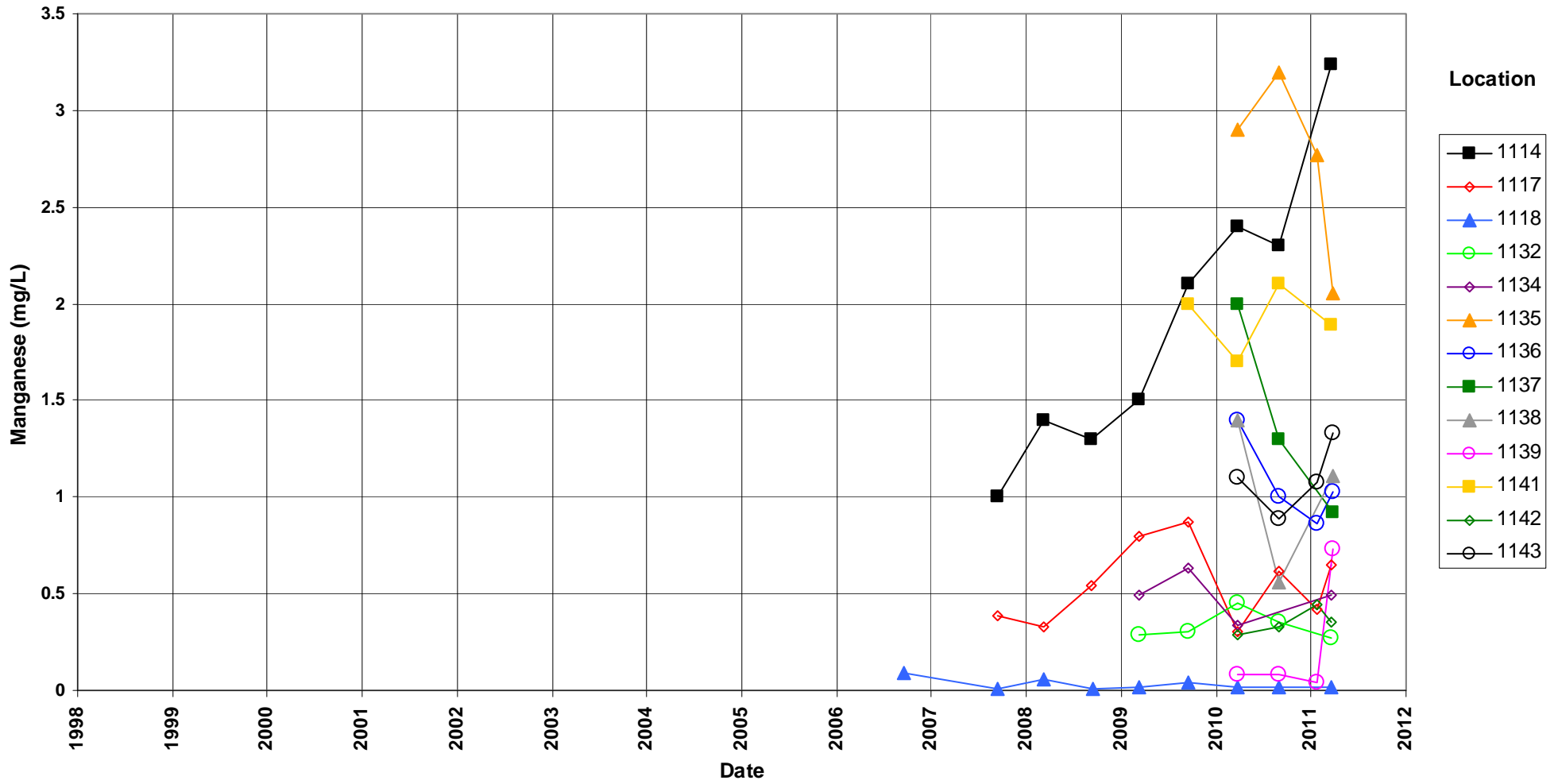
Shiprock Disposal Site (Floodplain) Manganese Concentration



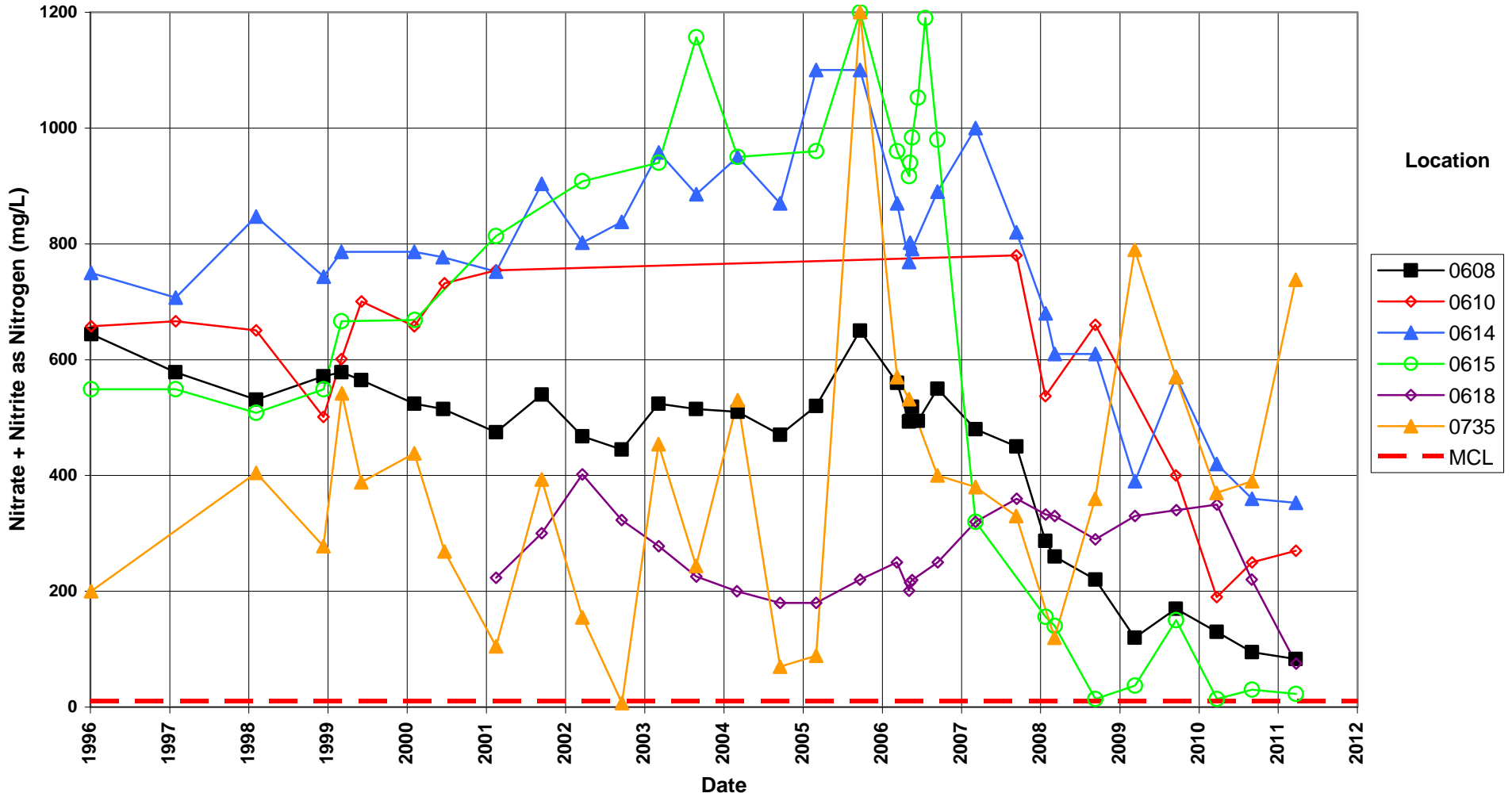
Shiprock Disposal Site (Floodplain) Manganese Concentration



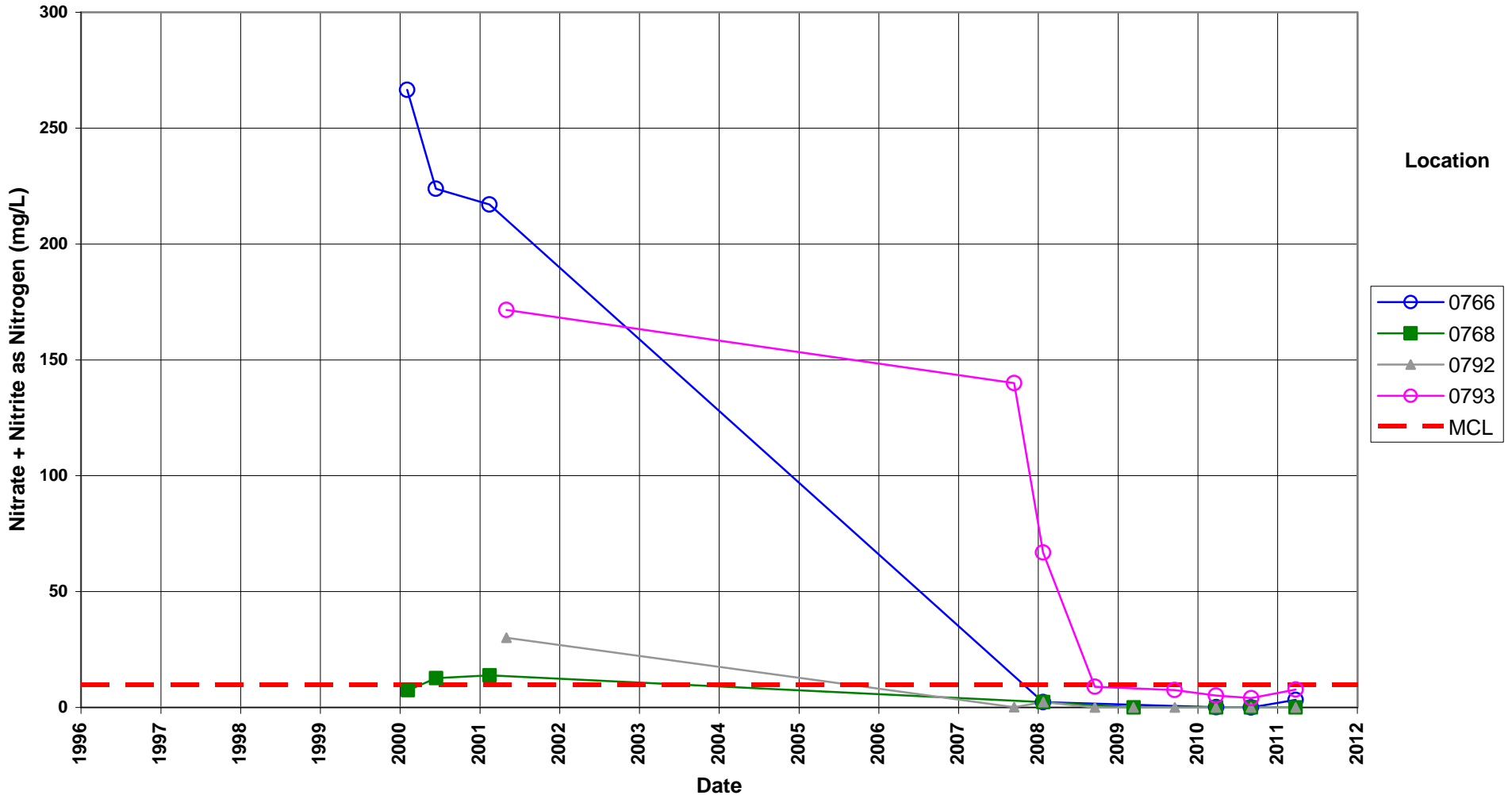
Shiprock Disposal Site (Floodplain) Manganese Concentration



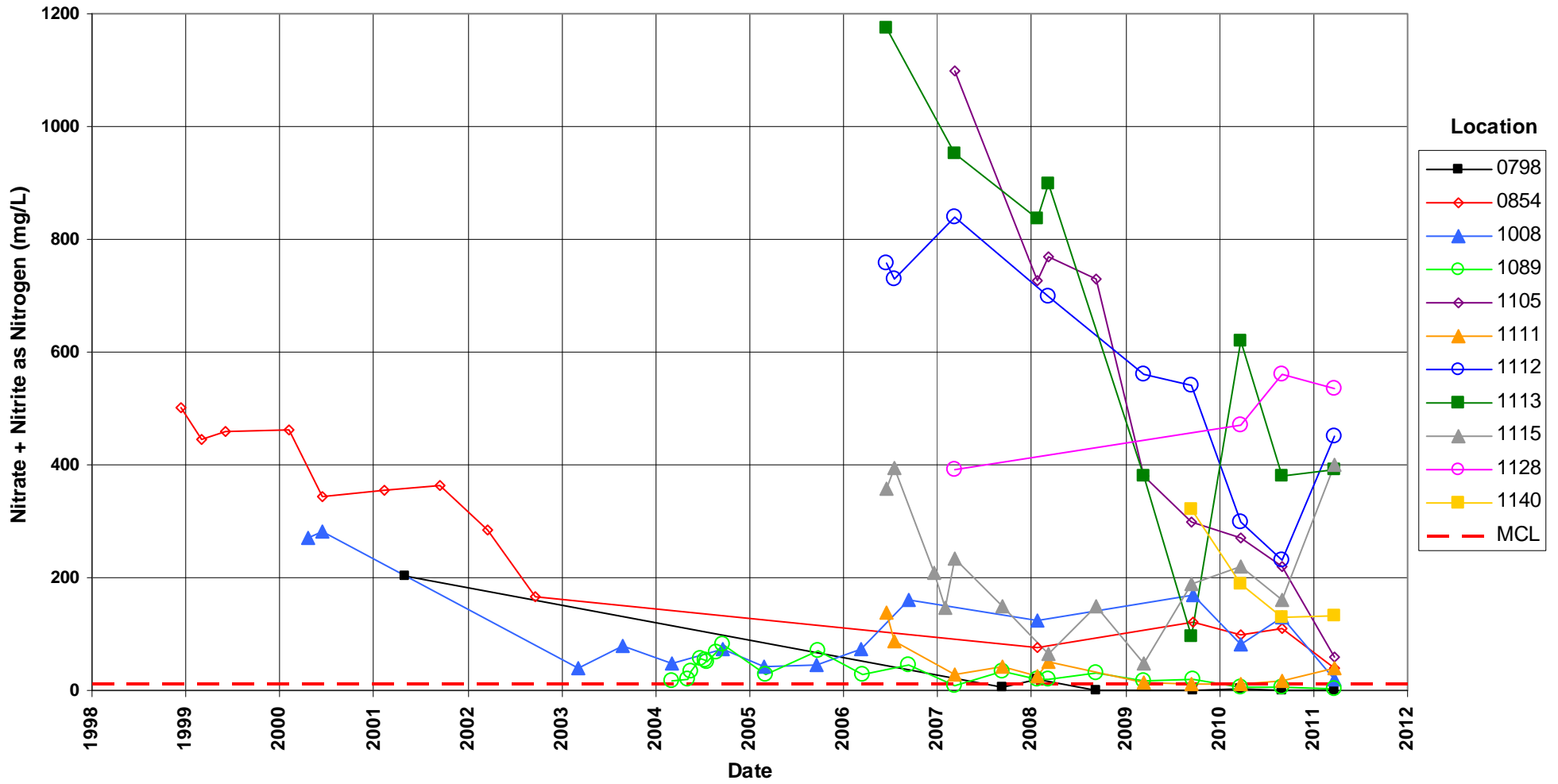
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



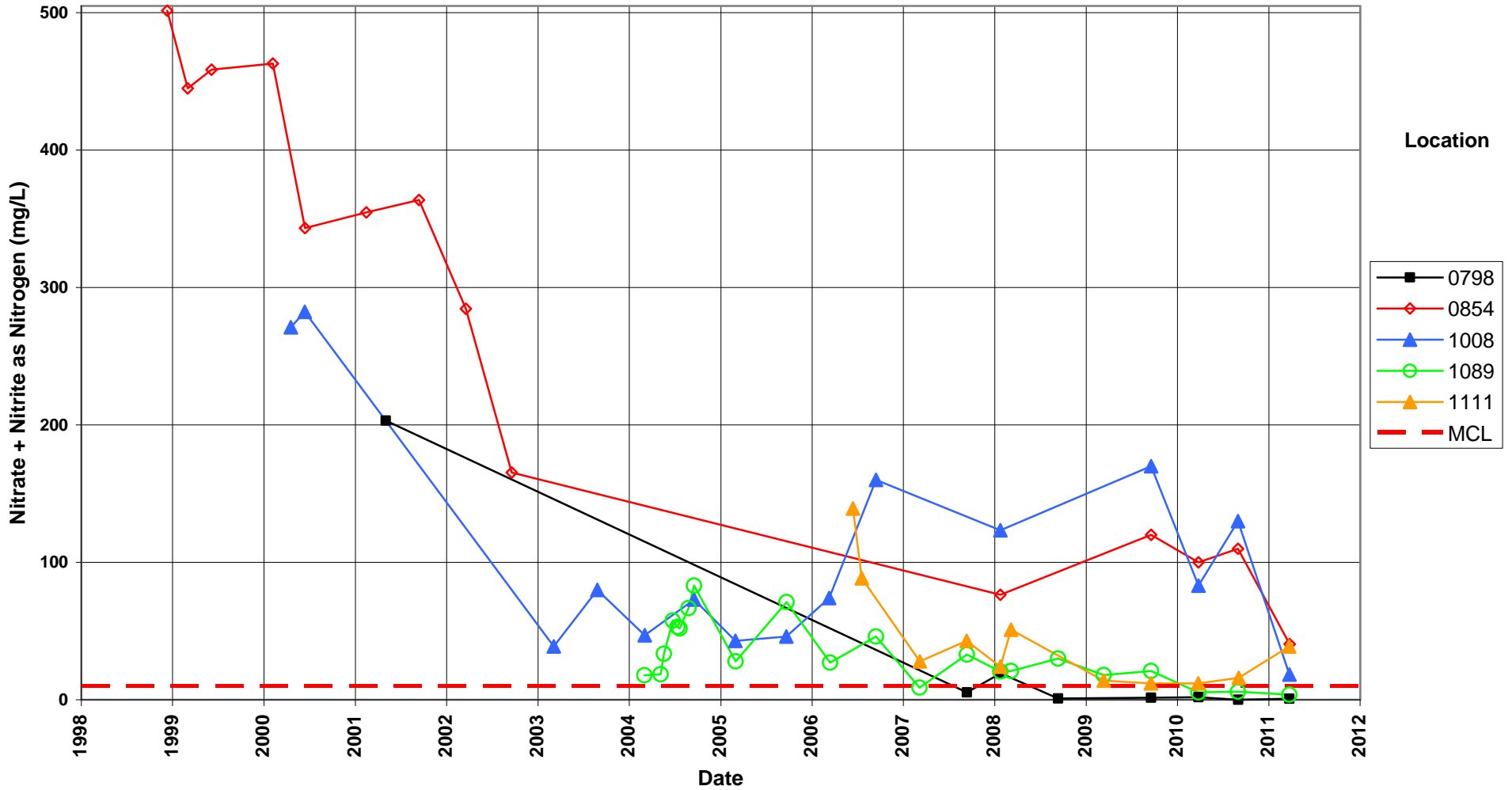
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



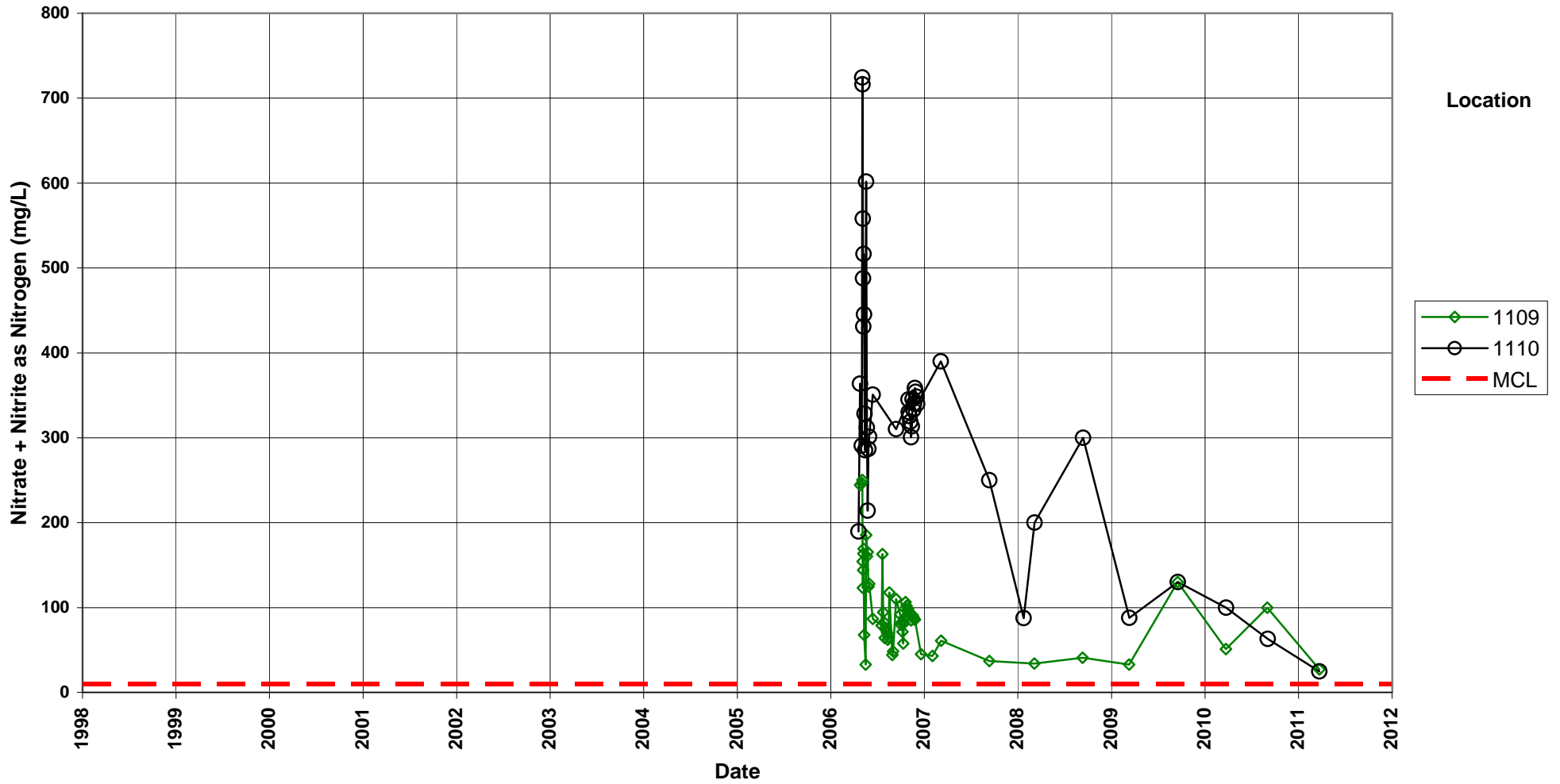
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



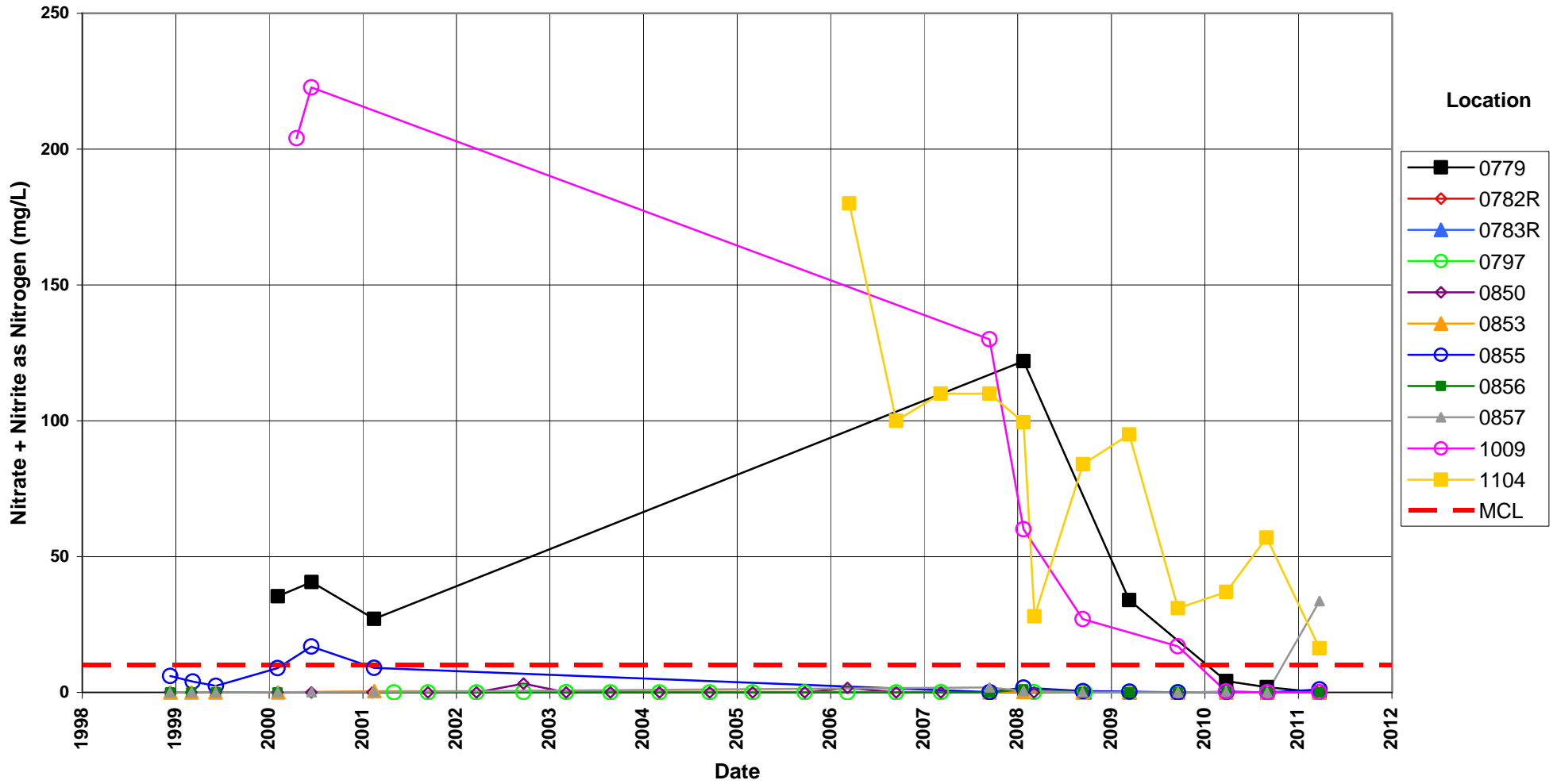
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



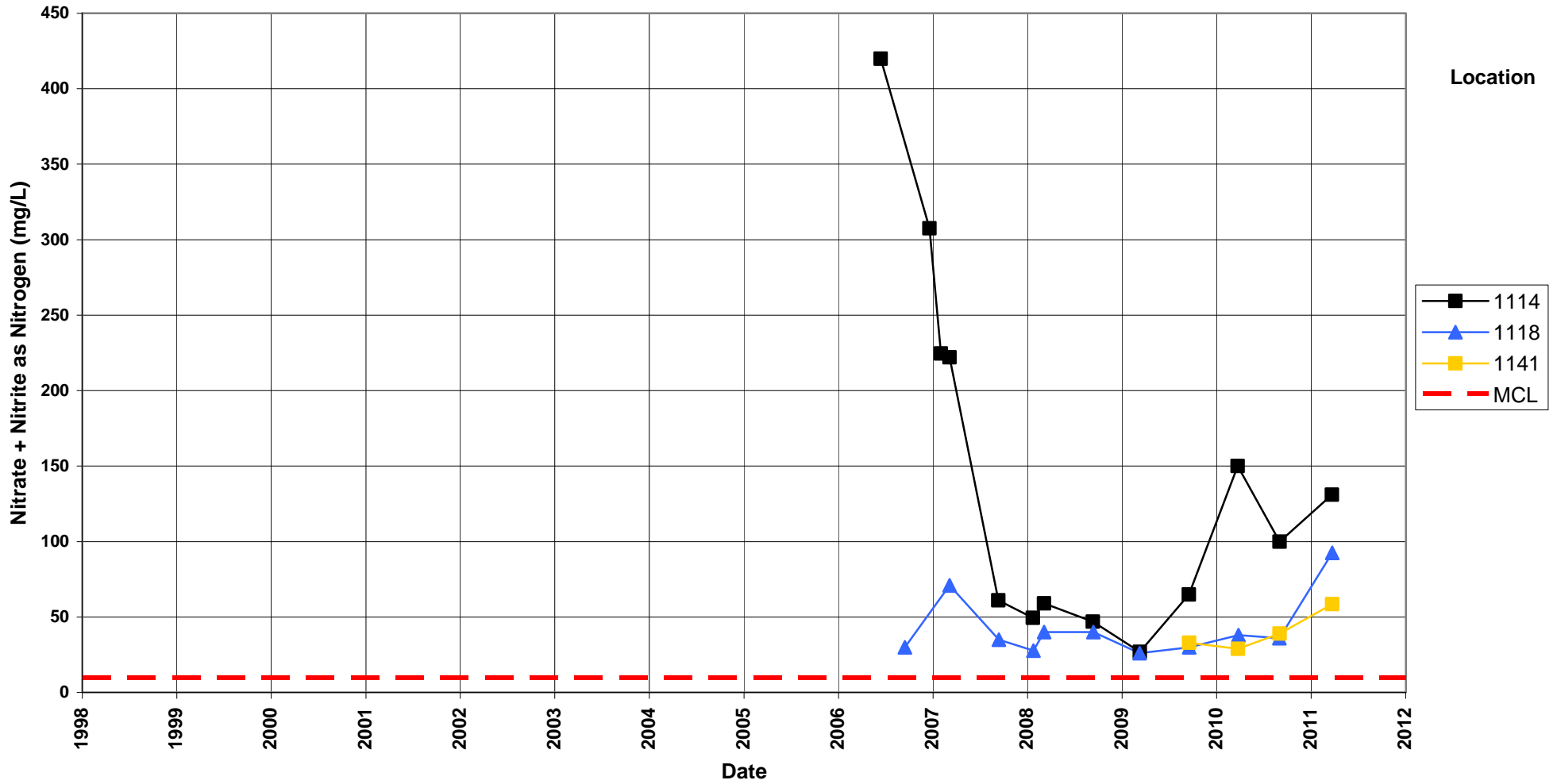
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



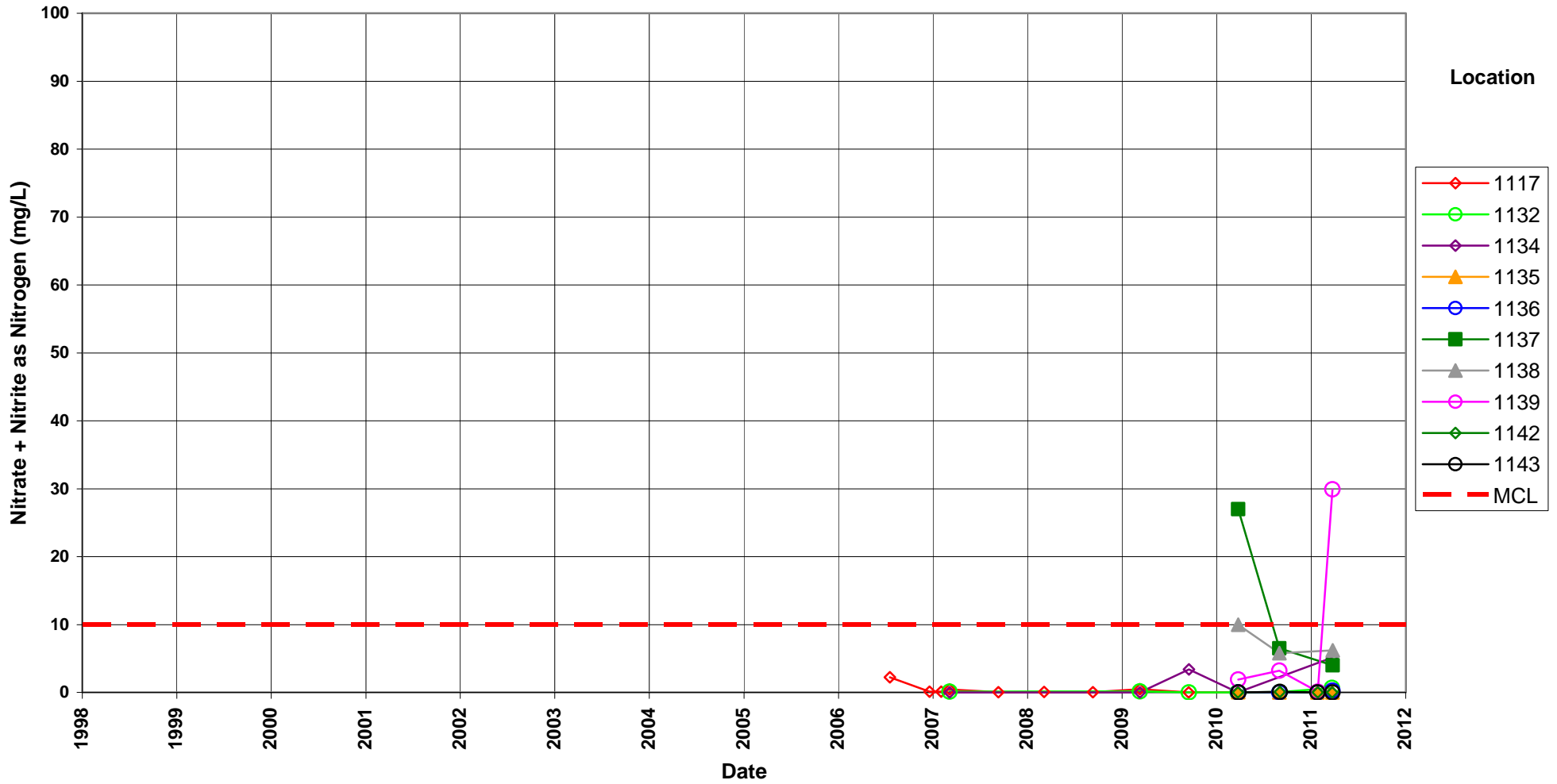
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



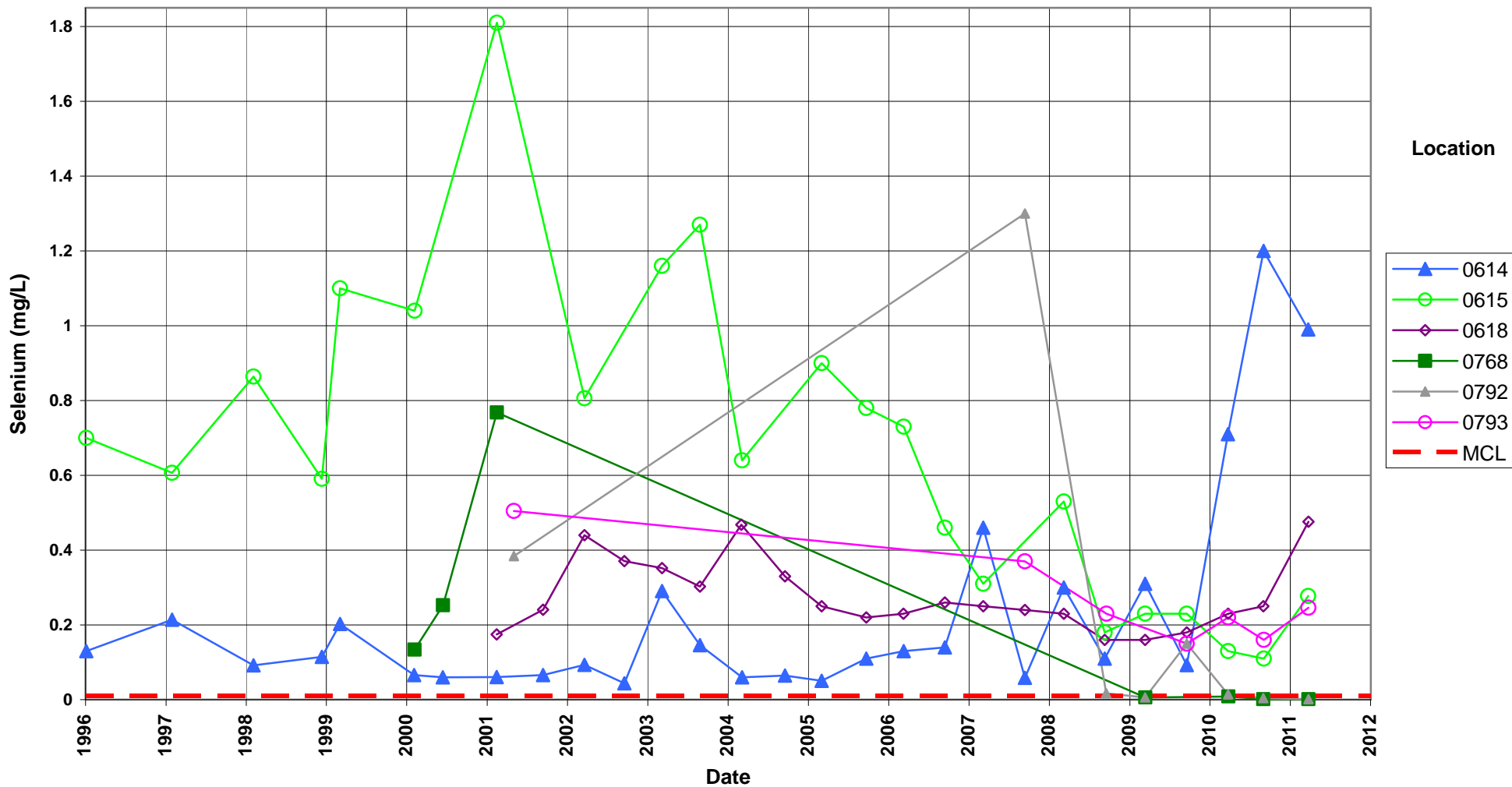
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



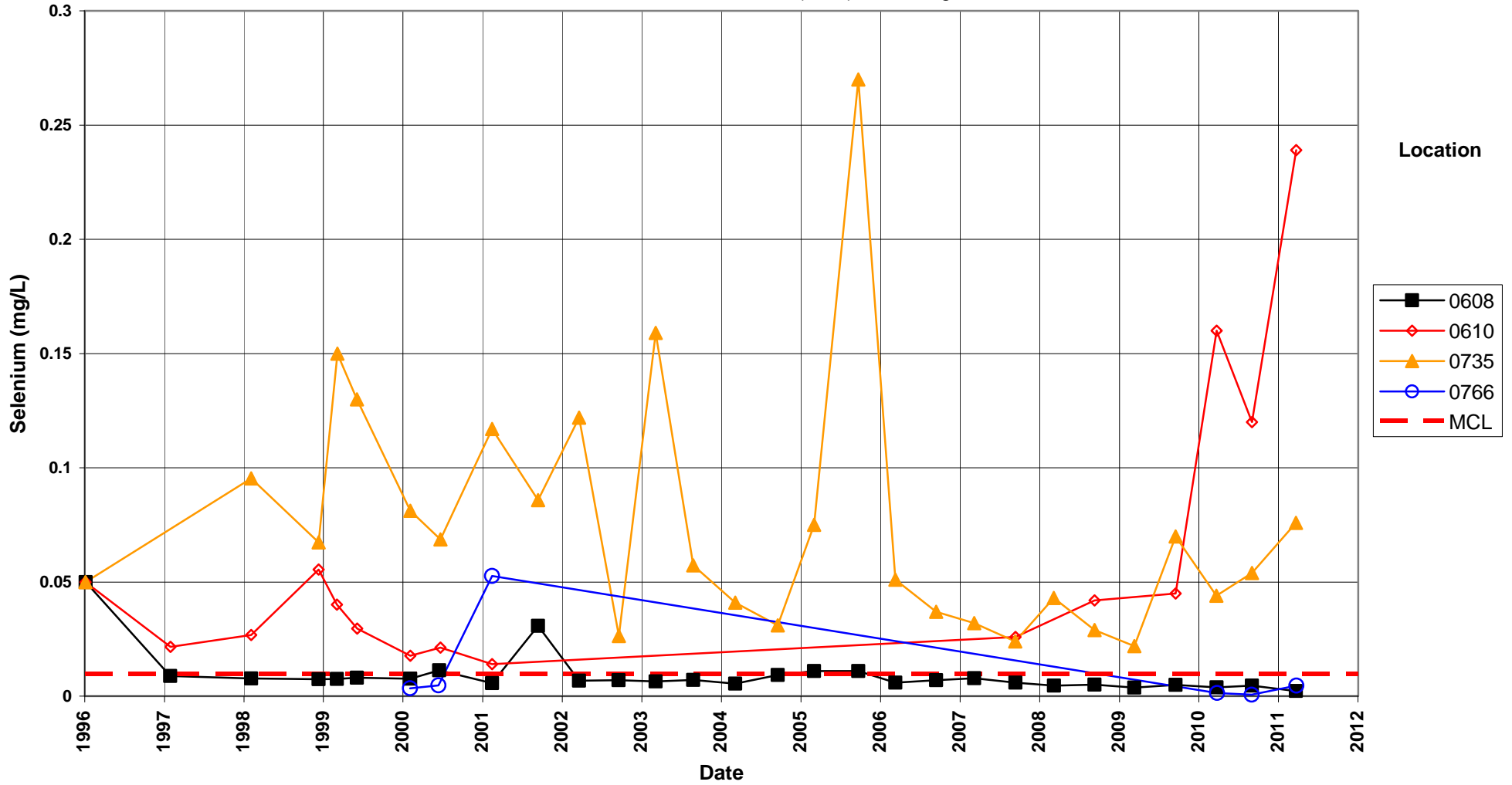
Shiprock Disposal Site (Floodplain)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



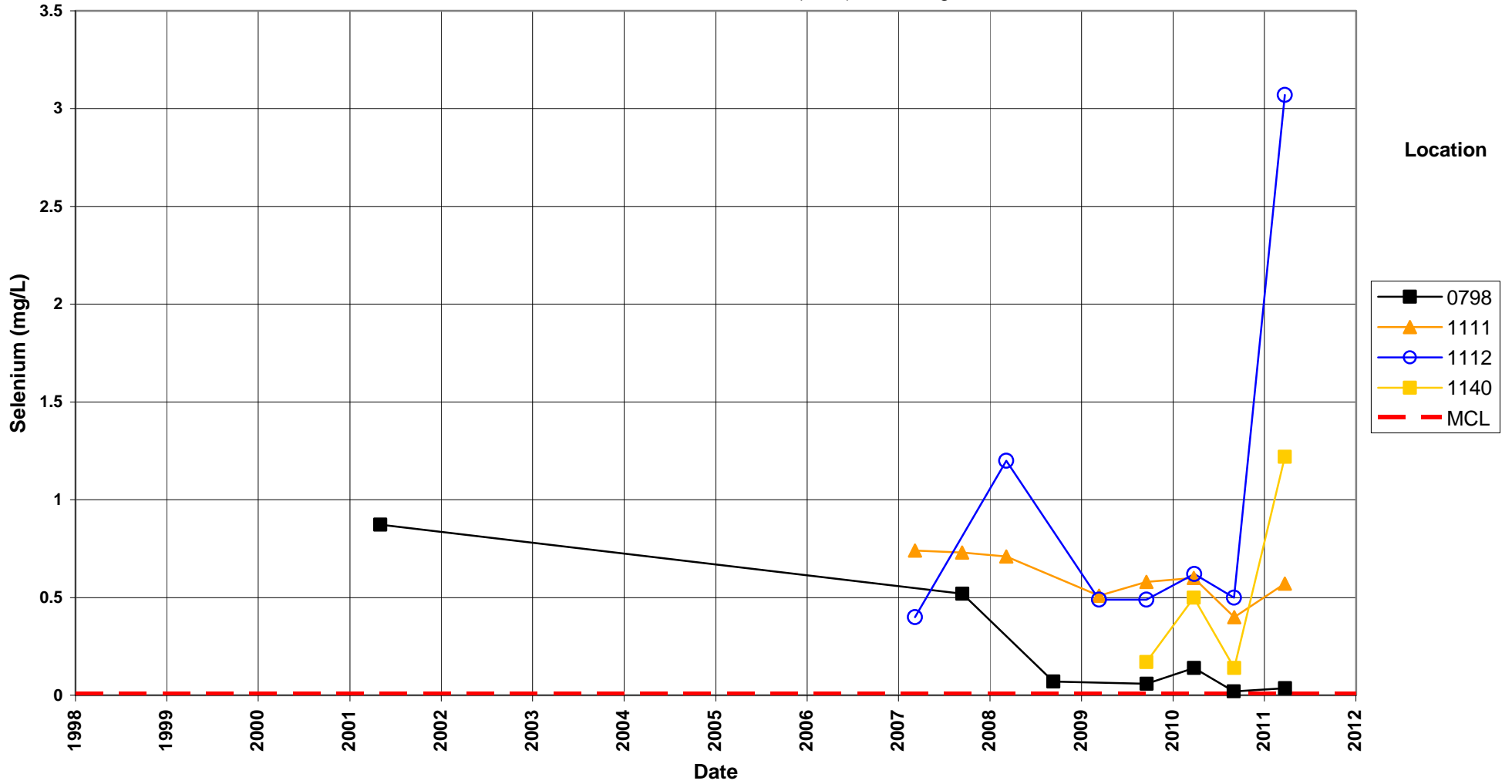
Shiprock Disposal Site (Floodplain)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



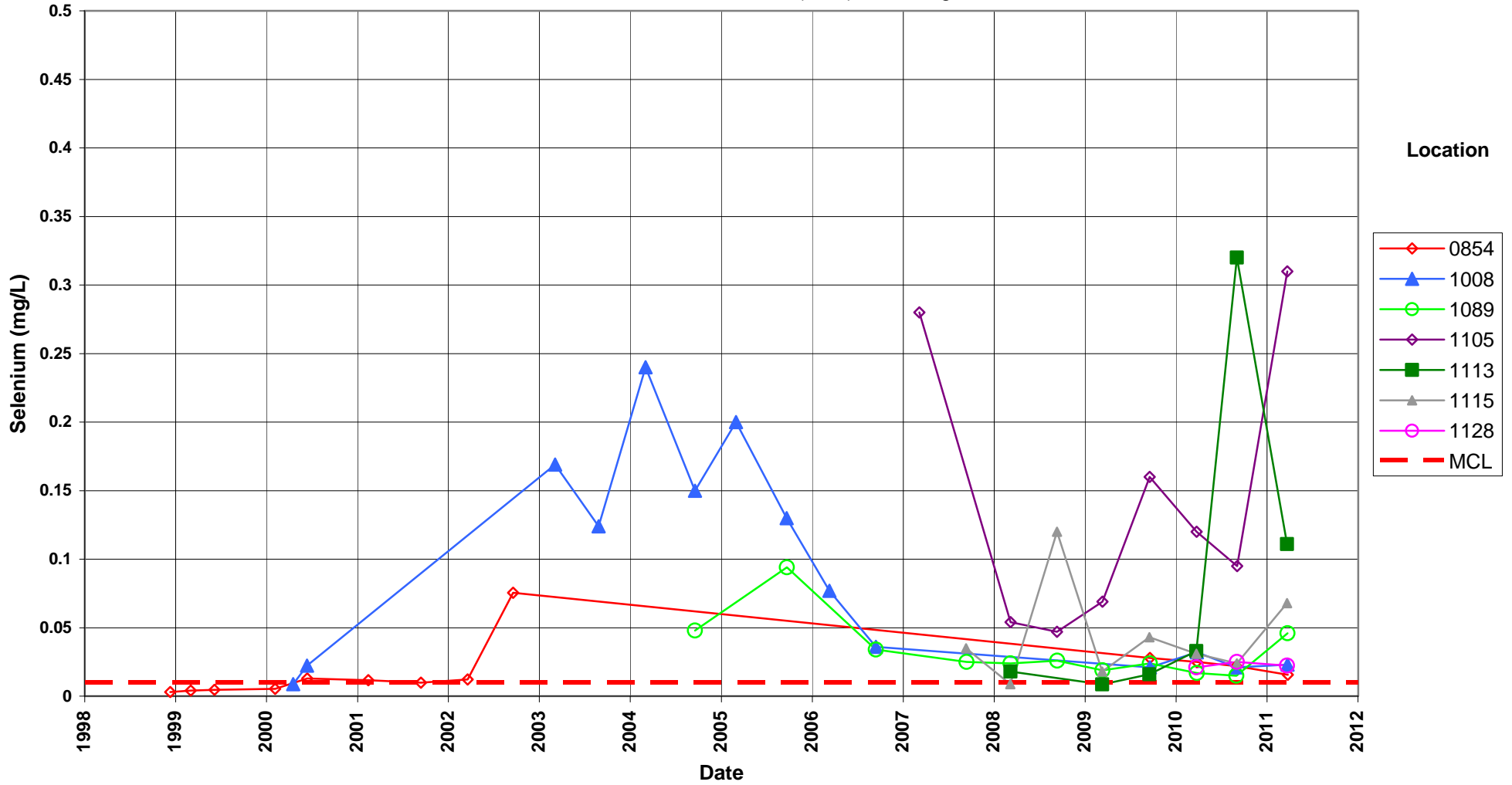
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



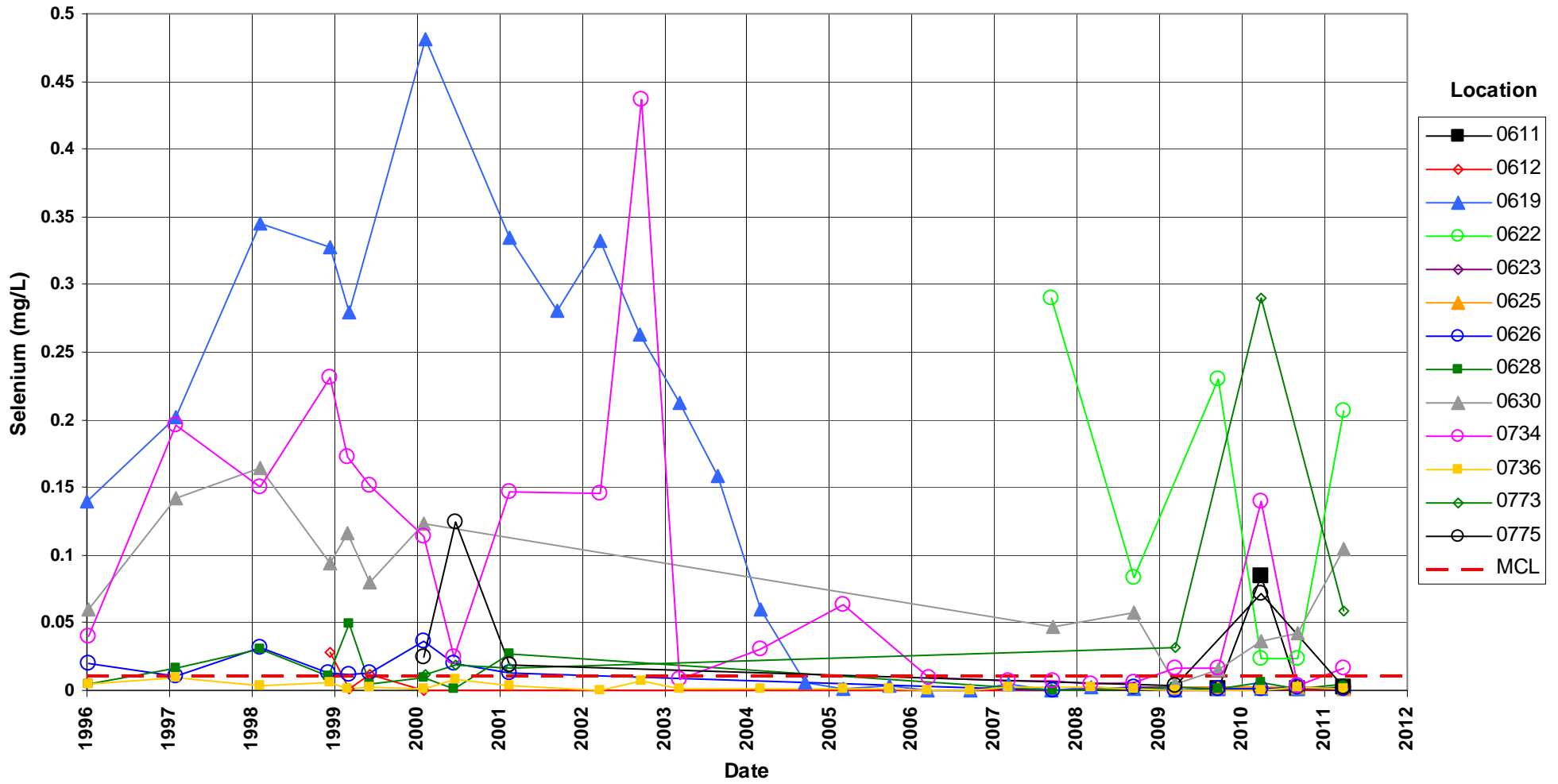
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



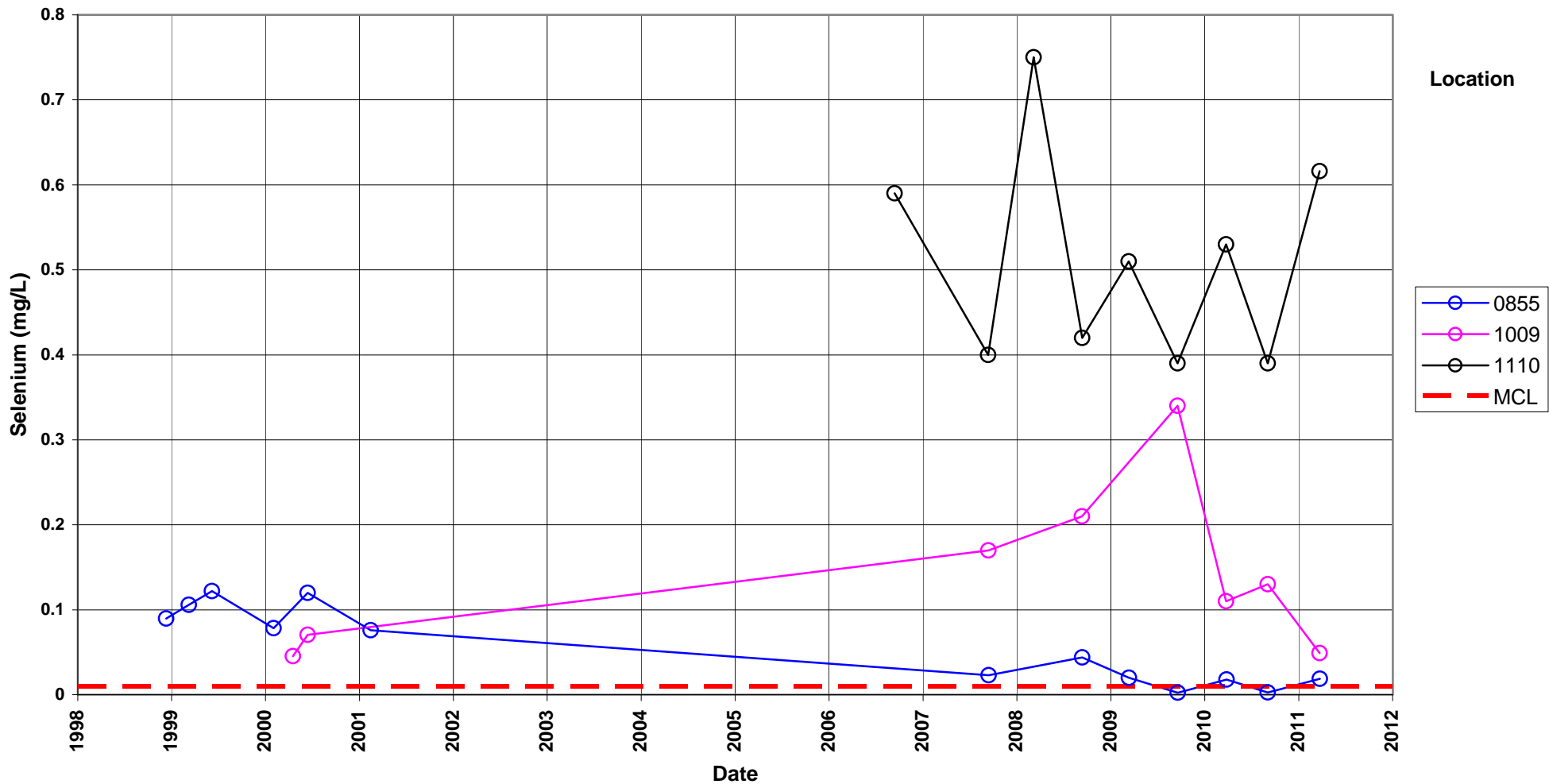
Shiprock Disposal Site (Floodplain)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



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

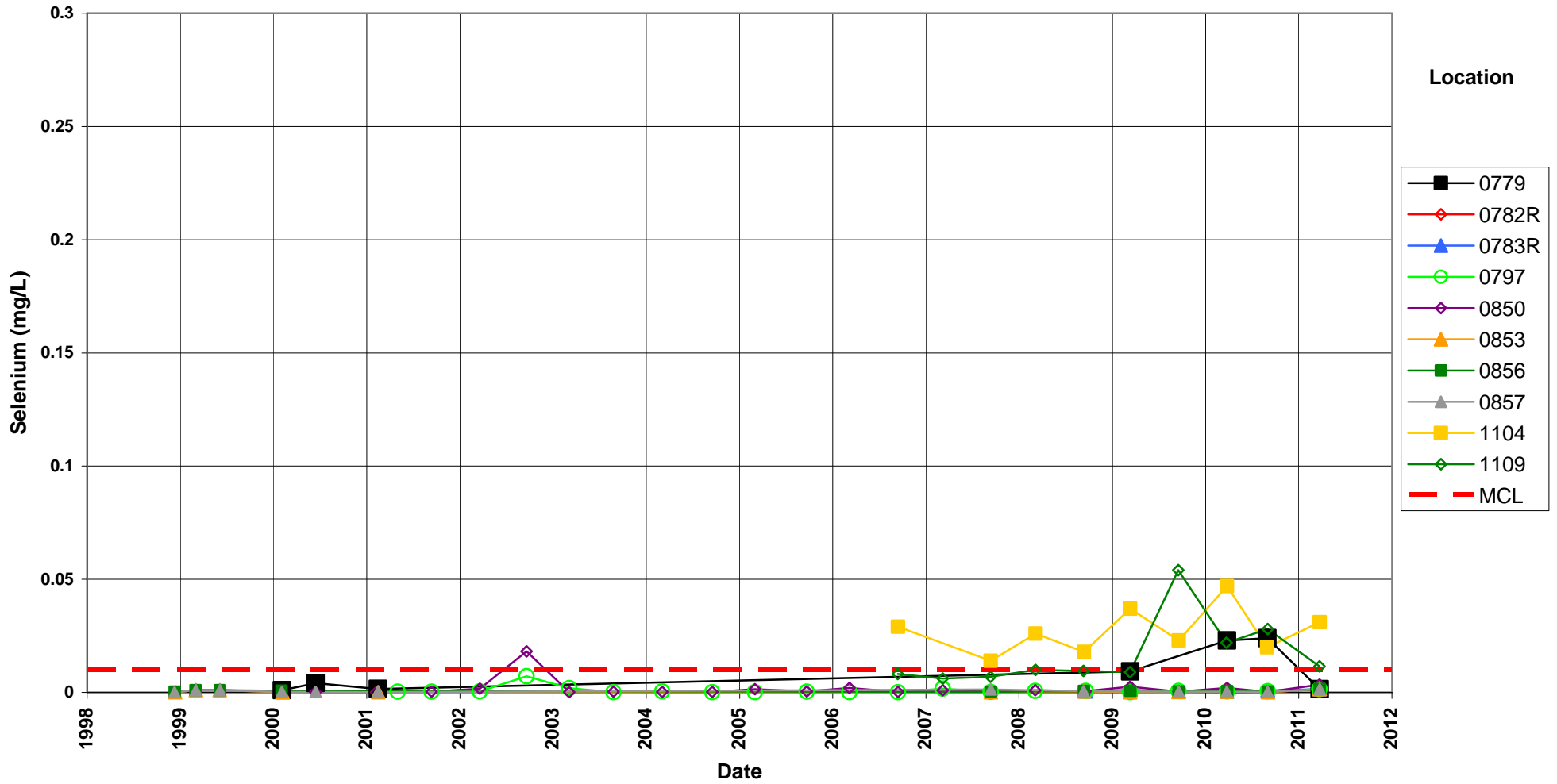


Shiprock Disposal Site (Floodplain)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



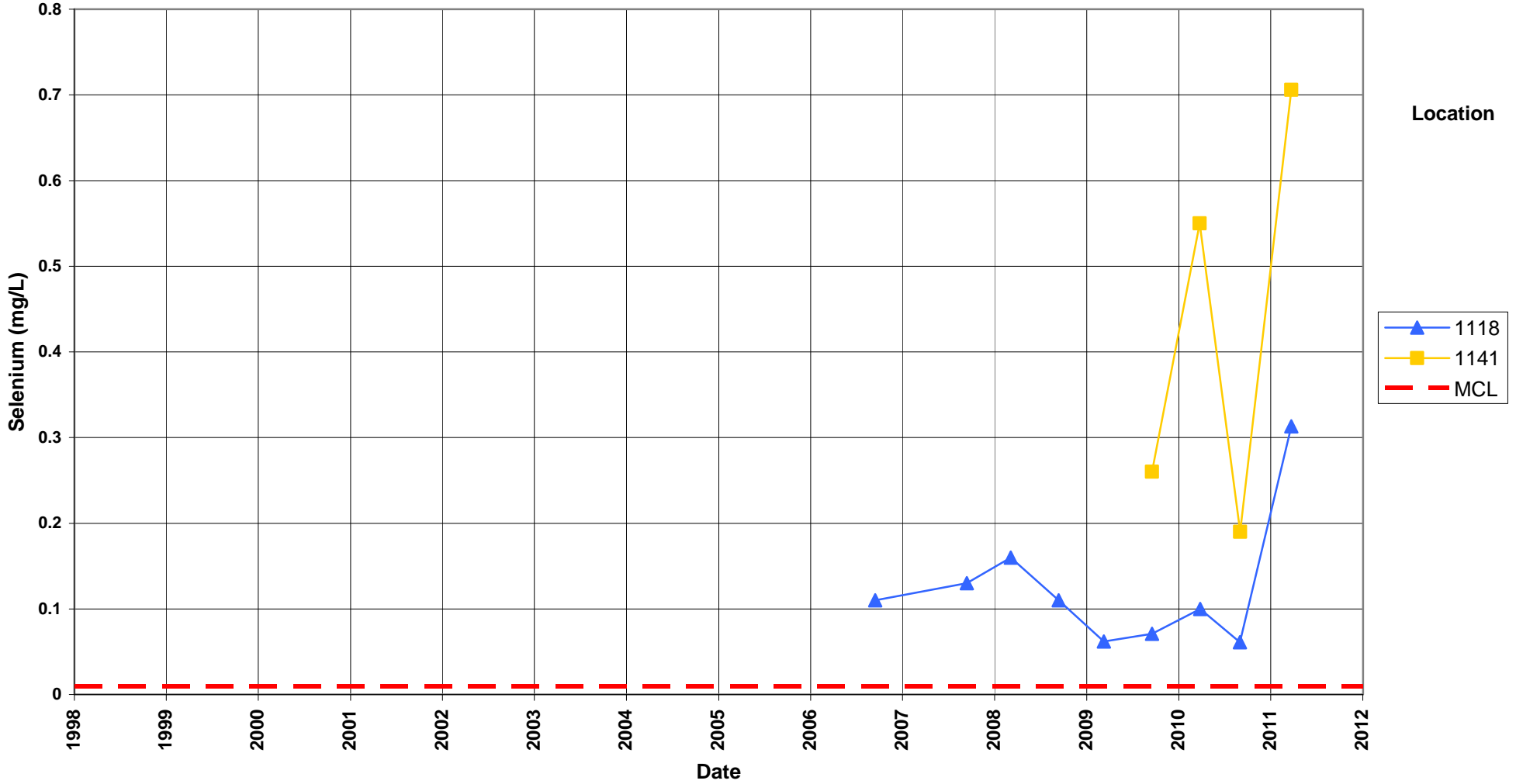
Shiprock Disposal Site (Floodplain) Selenium Concentration

Maximum Contaminant Level (MCL) = 0.01 mg/L



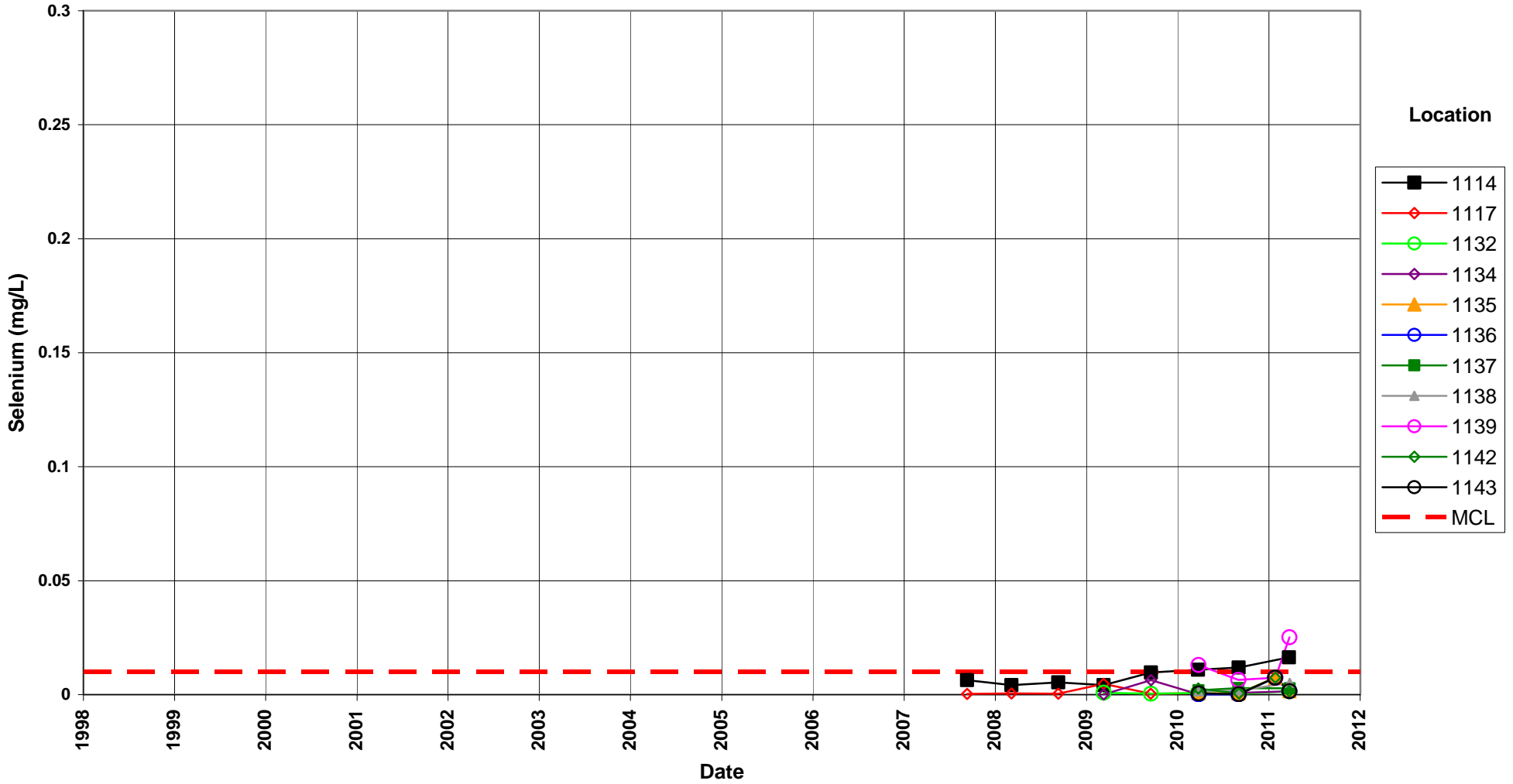
Shiprock Disposal Site (Floodplain) Selenium Concentration

Maximum Contaminant Level (MCL) = 0.01 mg/L

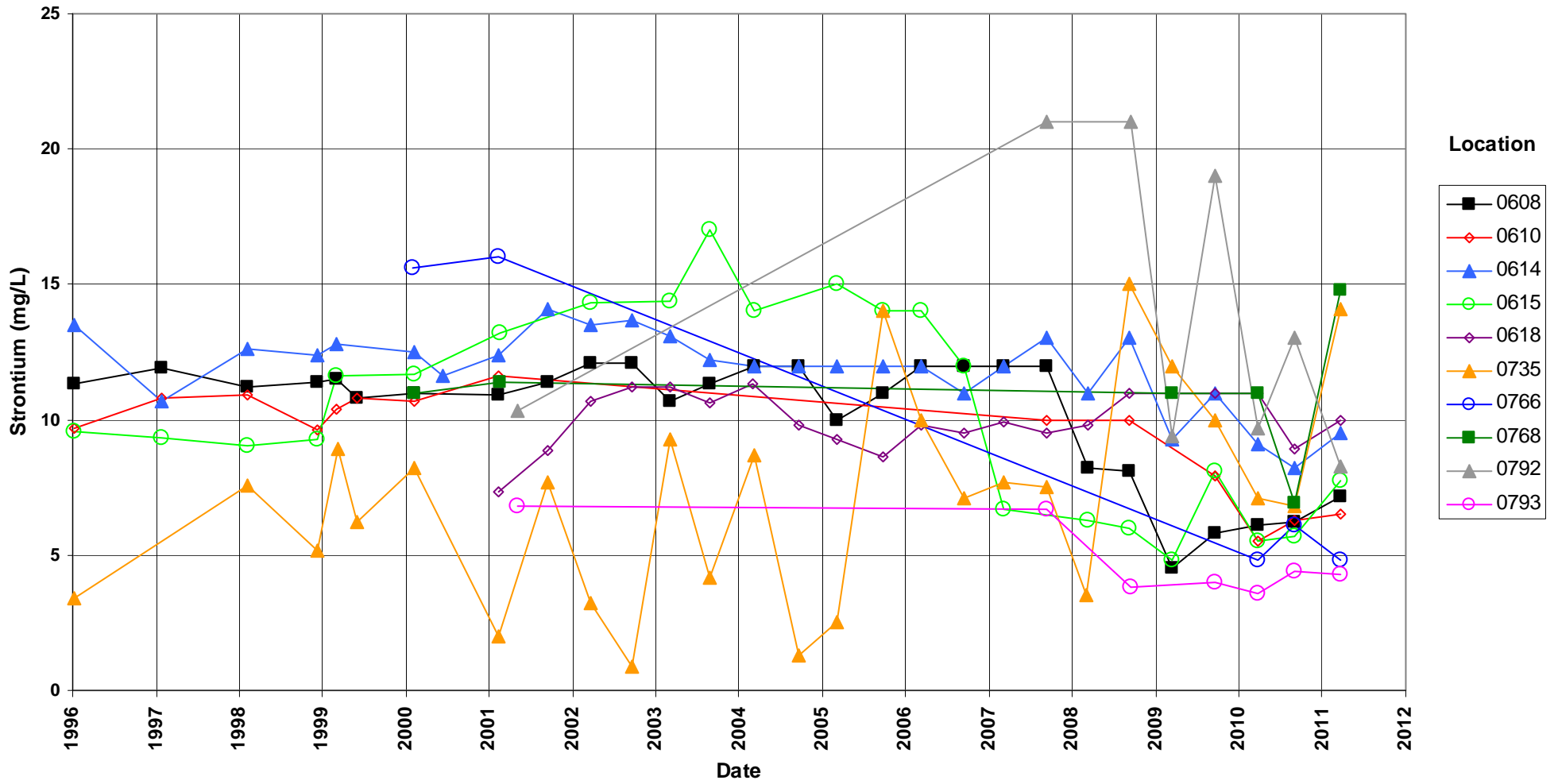


Shiprock Disposal Site (Floodplain) Selenium Concentration

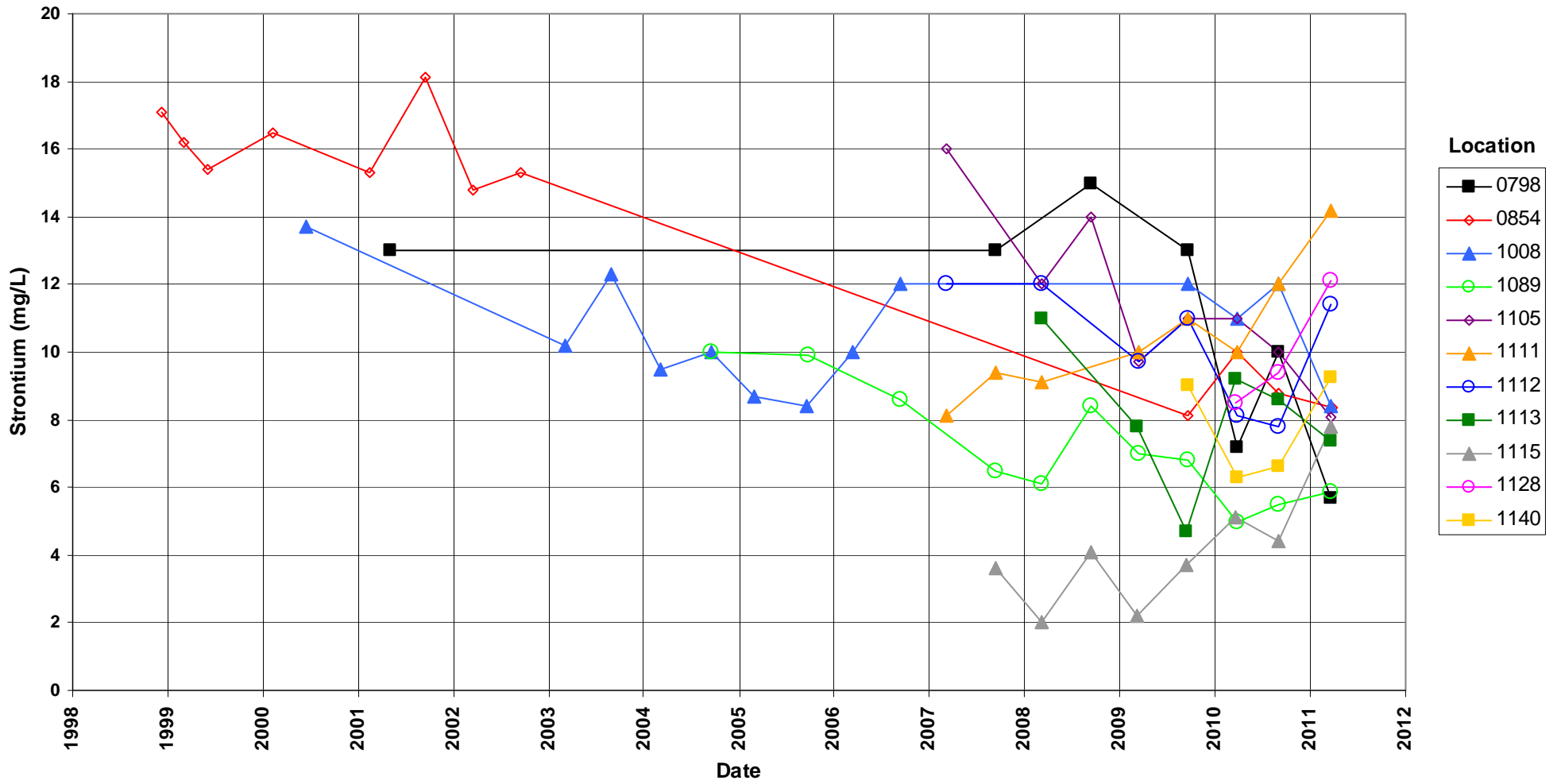
Maximum Contaminant Level (MCL) = 0.01 mg/L



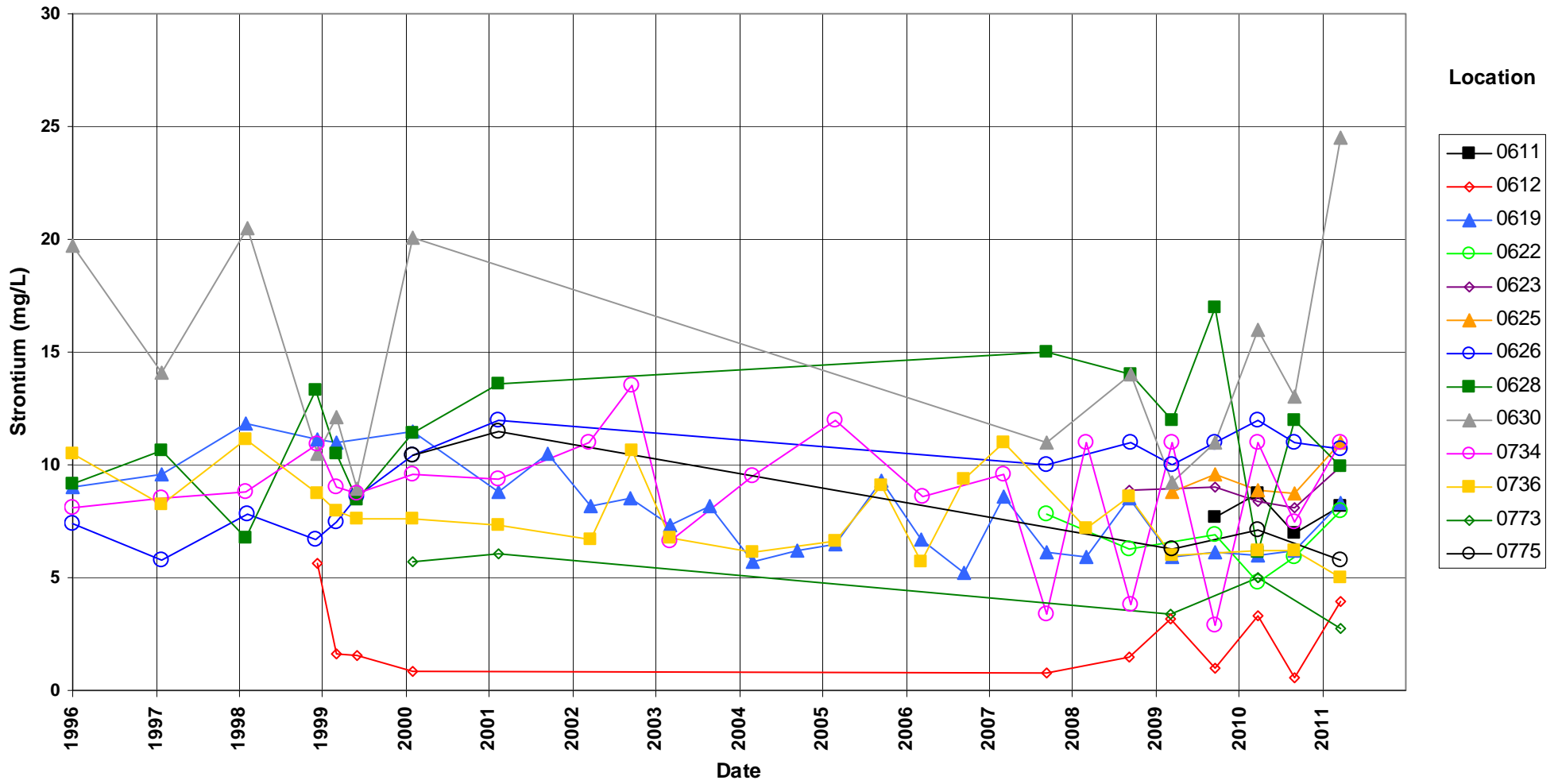
Shiprock Disposal Site (Floodplain) Strontium Concentration



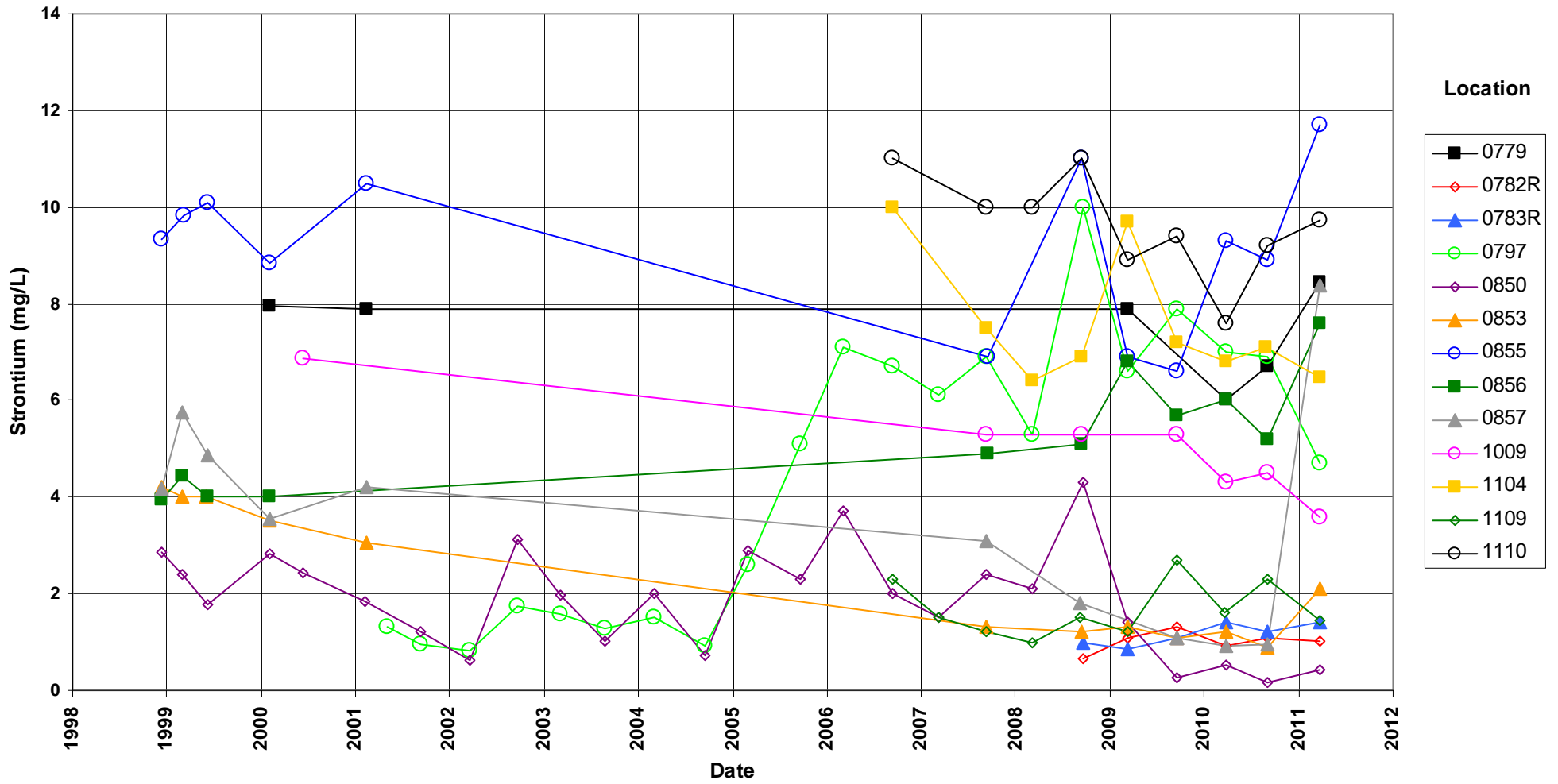
Shiprock Disposal Site (Floodplain) Strontium Concentration



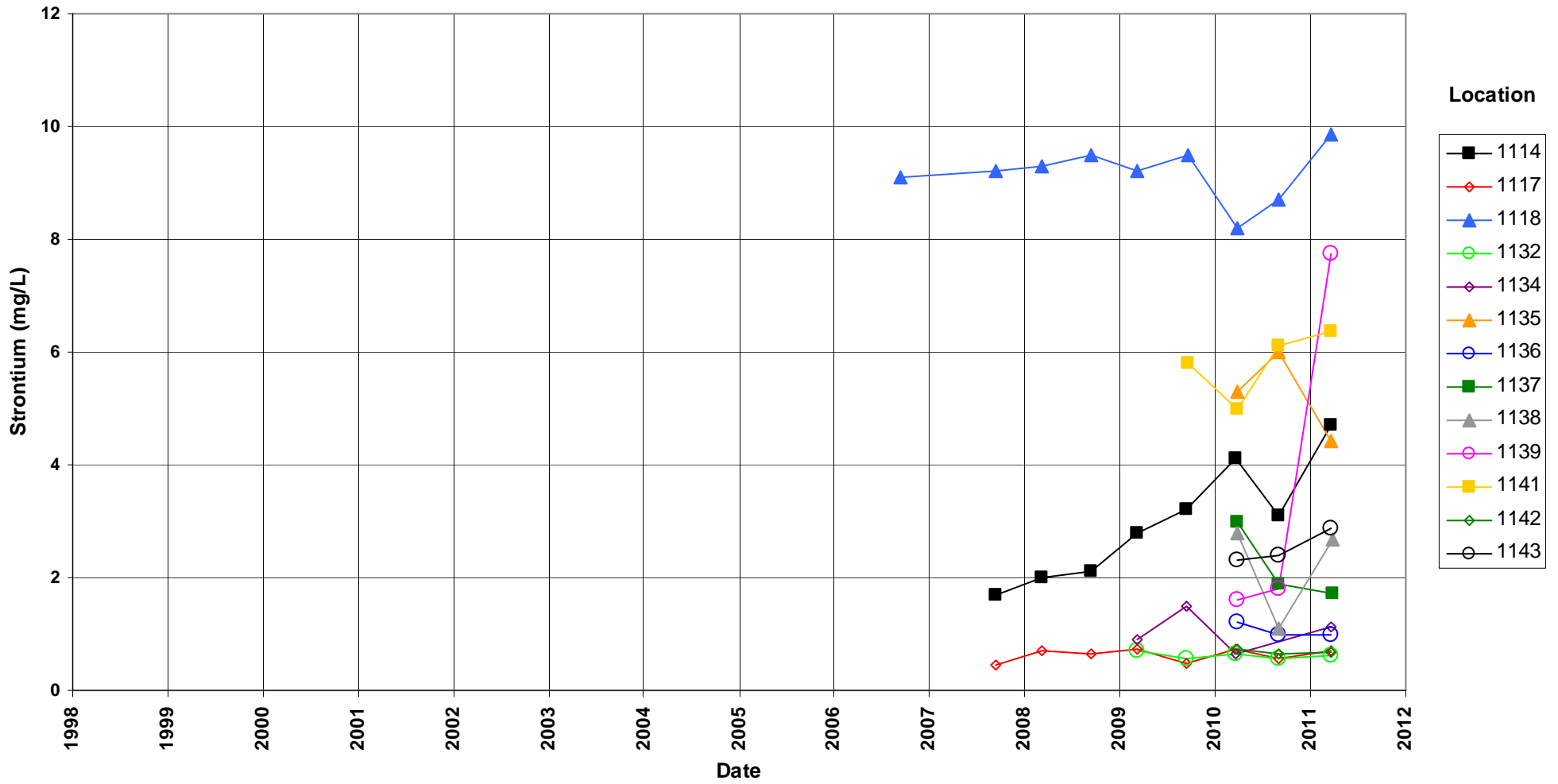
Shiprock Disposal Site (Floodplain) Strontium Concentration



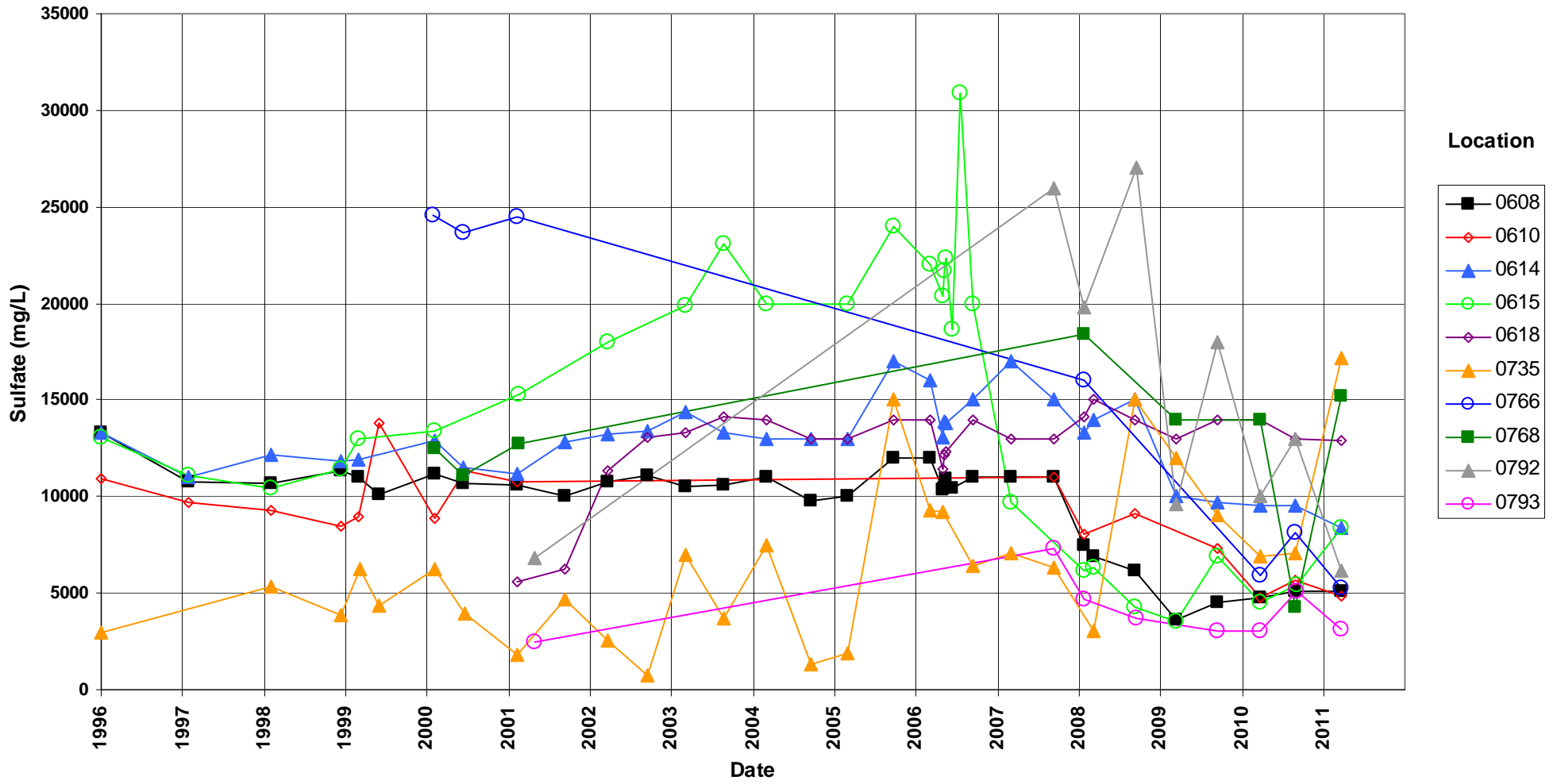
Shiprock Disposal Site (Floodplain) Strontium Concentration



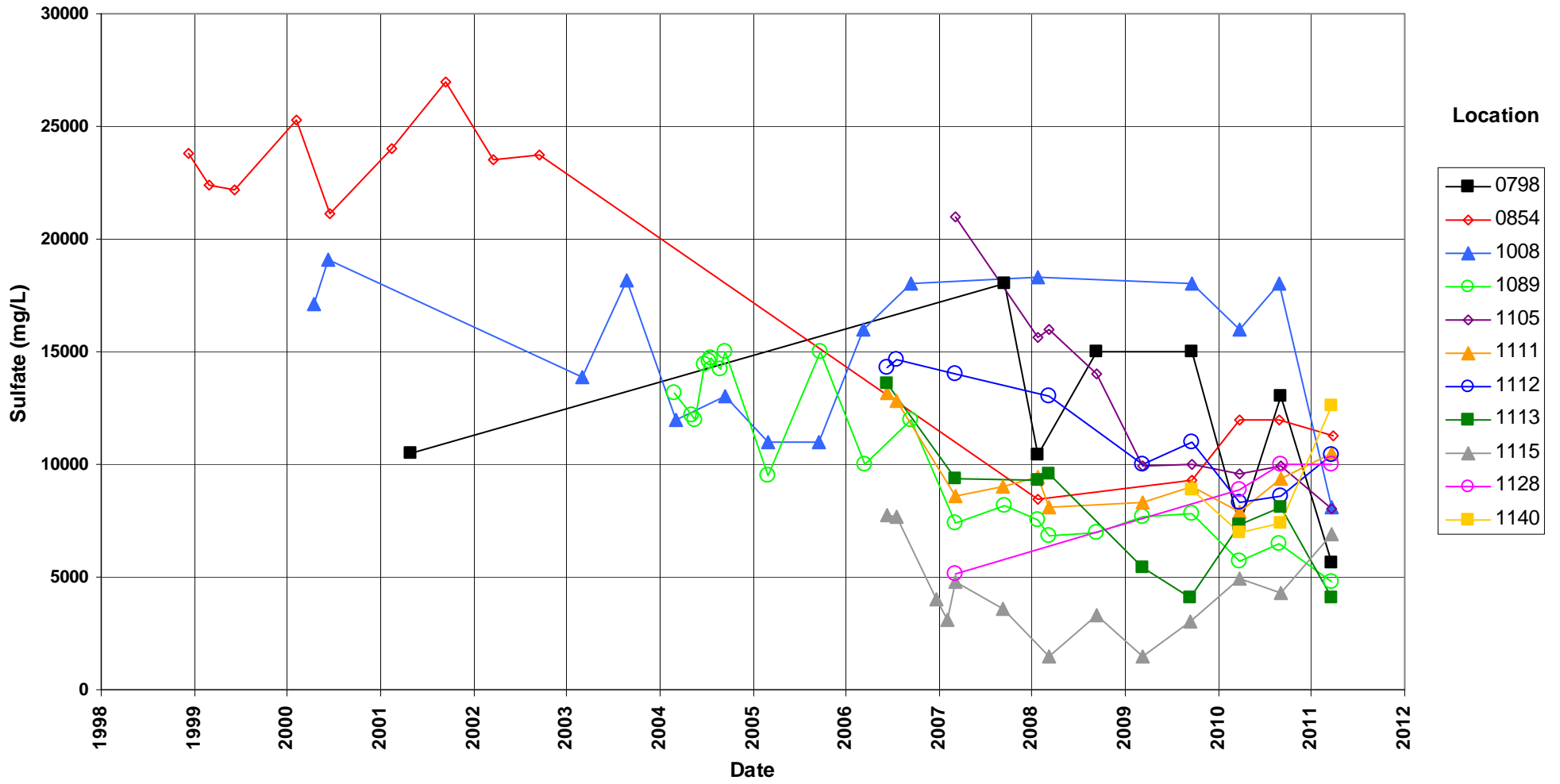
Shiprock Disposal Site (Floodplain) Strontium Concentration



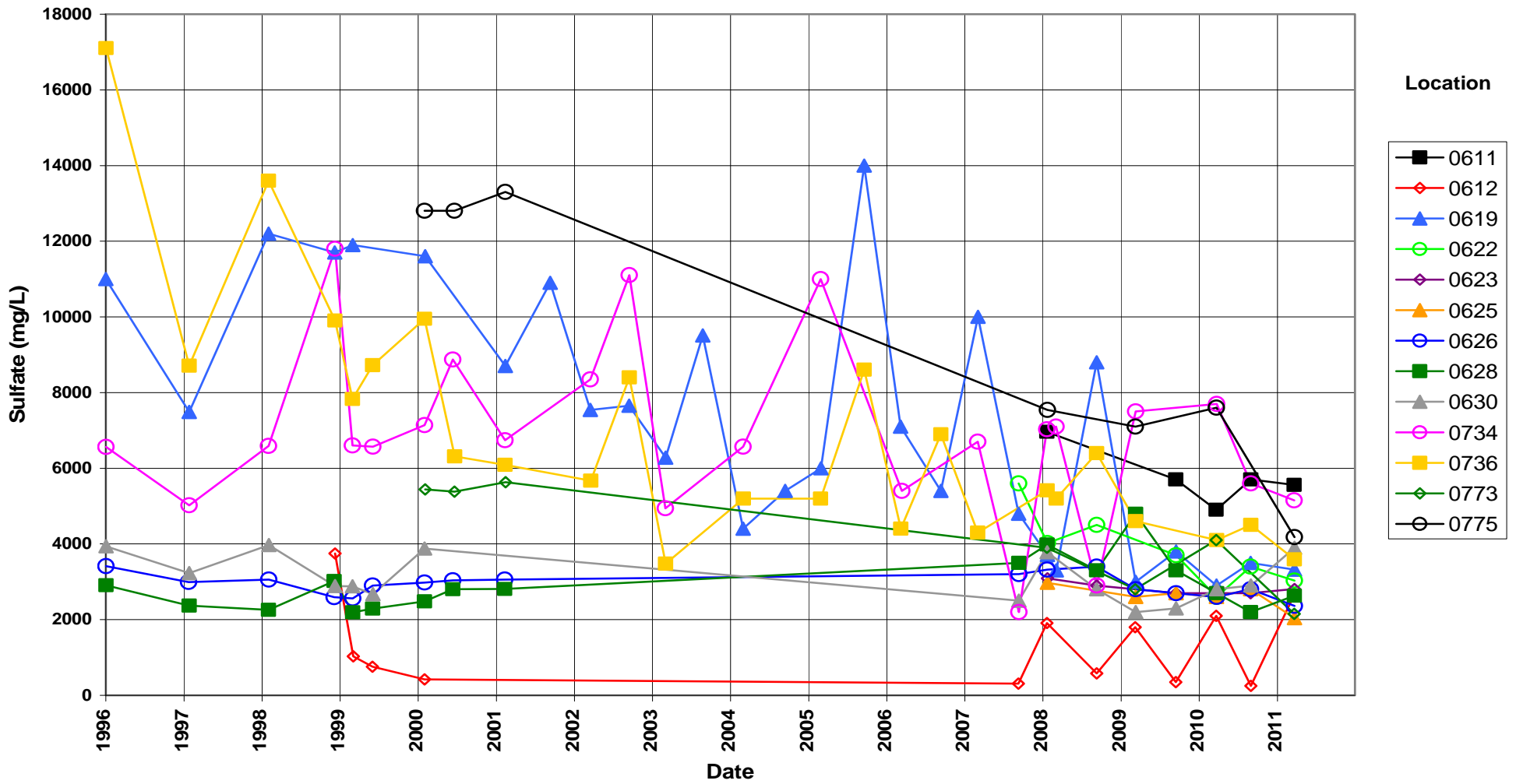
Shiprock Disposal Site (Floodplain) Sulfate Concentration



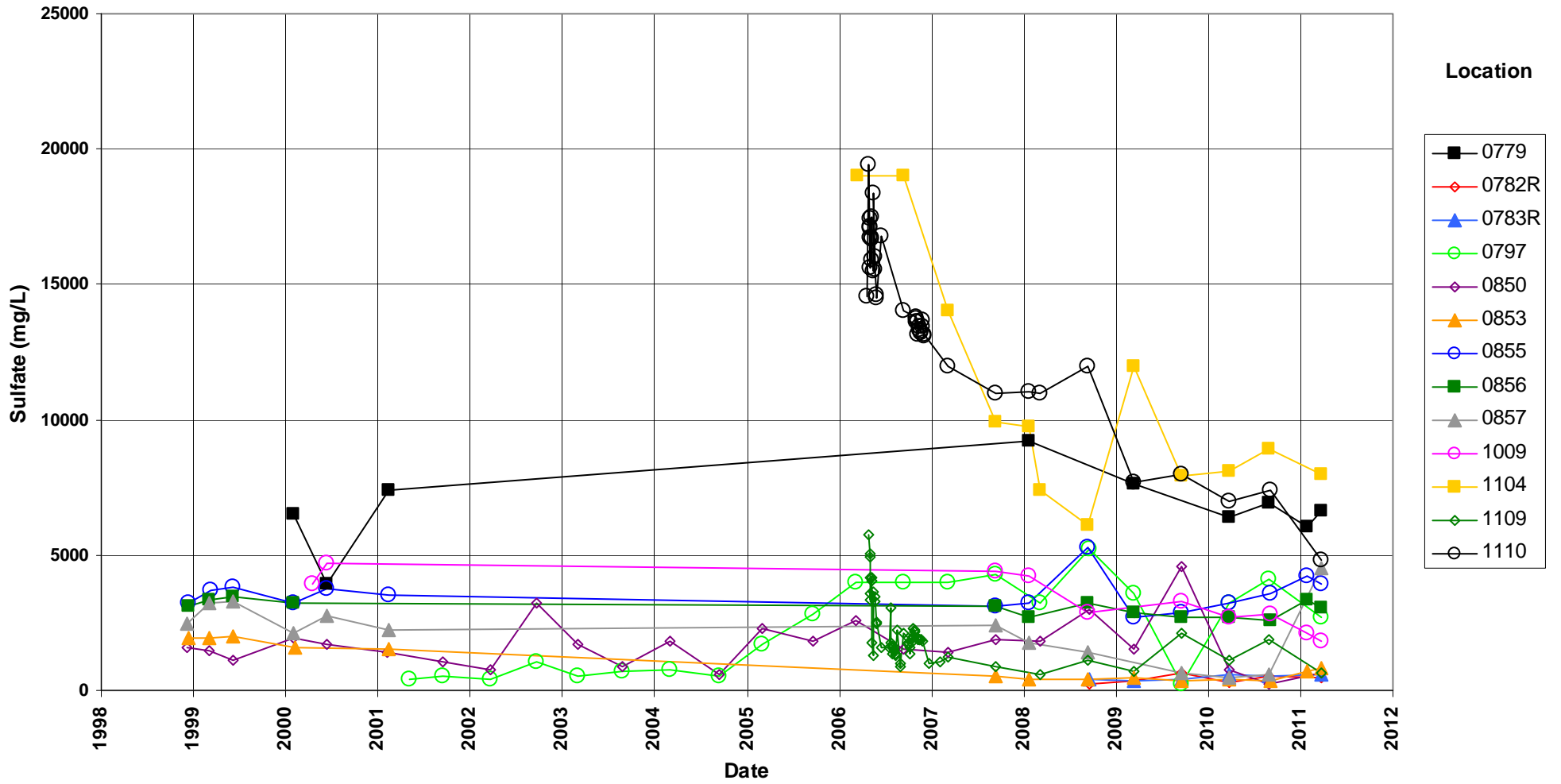
Shiprock Disposal Site (Floodplain) Sulfate Concentration



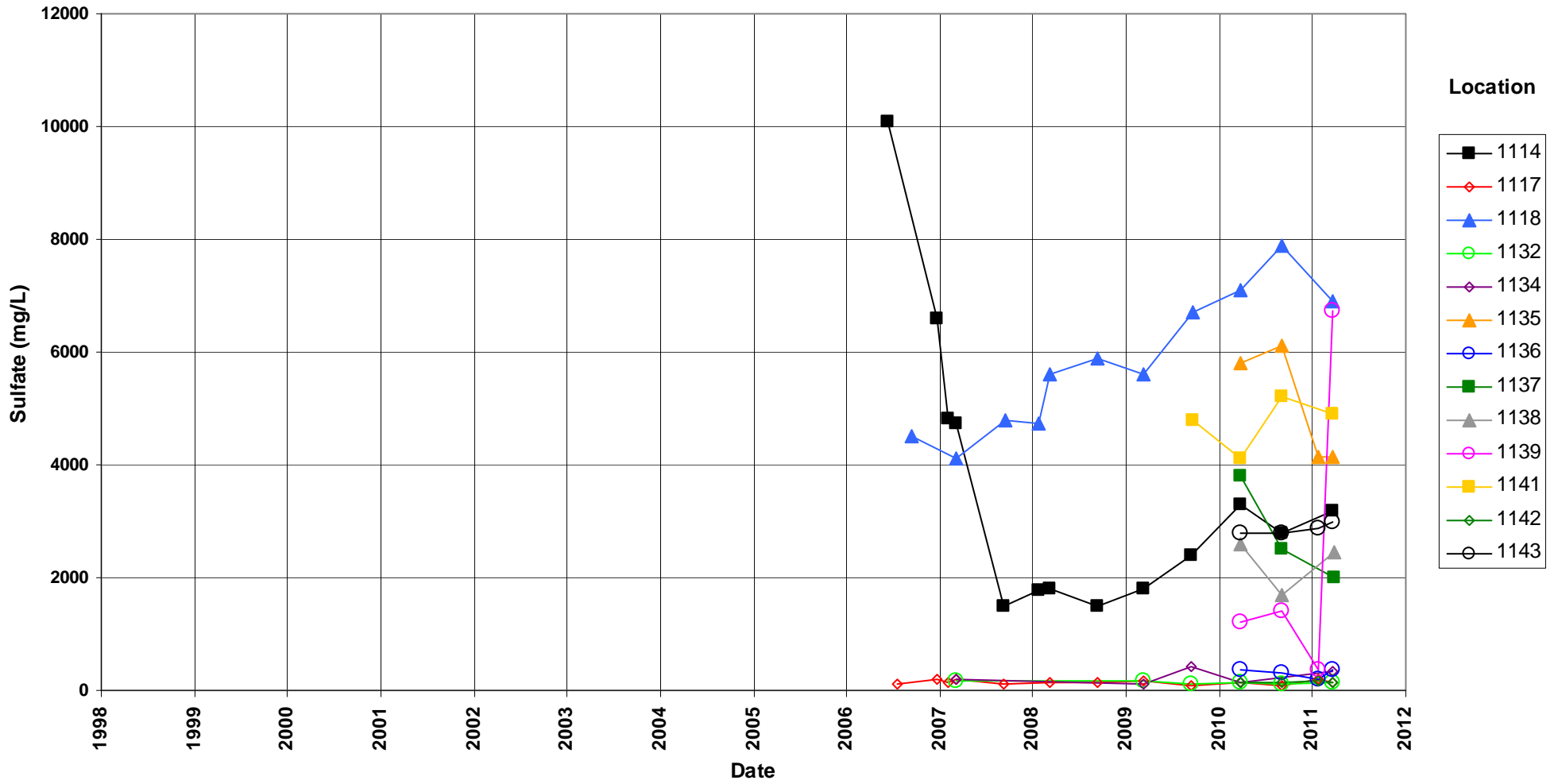
Shiprock Disposal Site (Floodplain) Sulfate Concentration



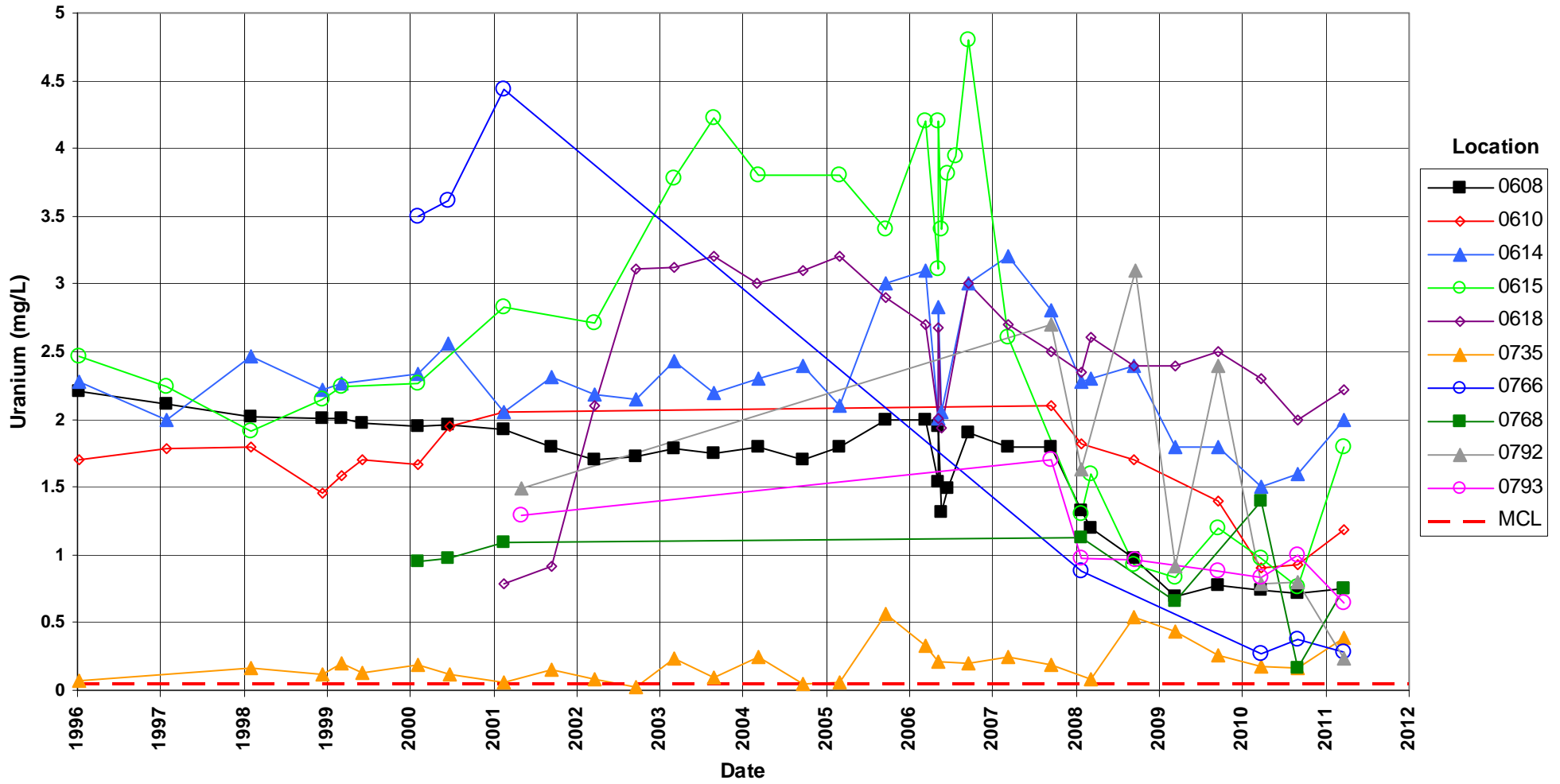
Shiprock Disposal Site (Floodplain) Sulfate Concentration



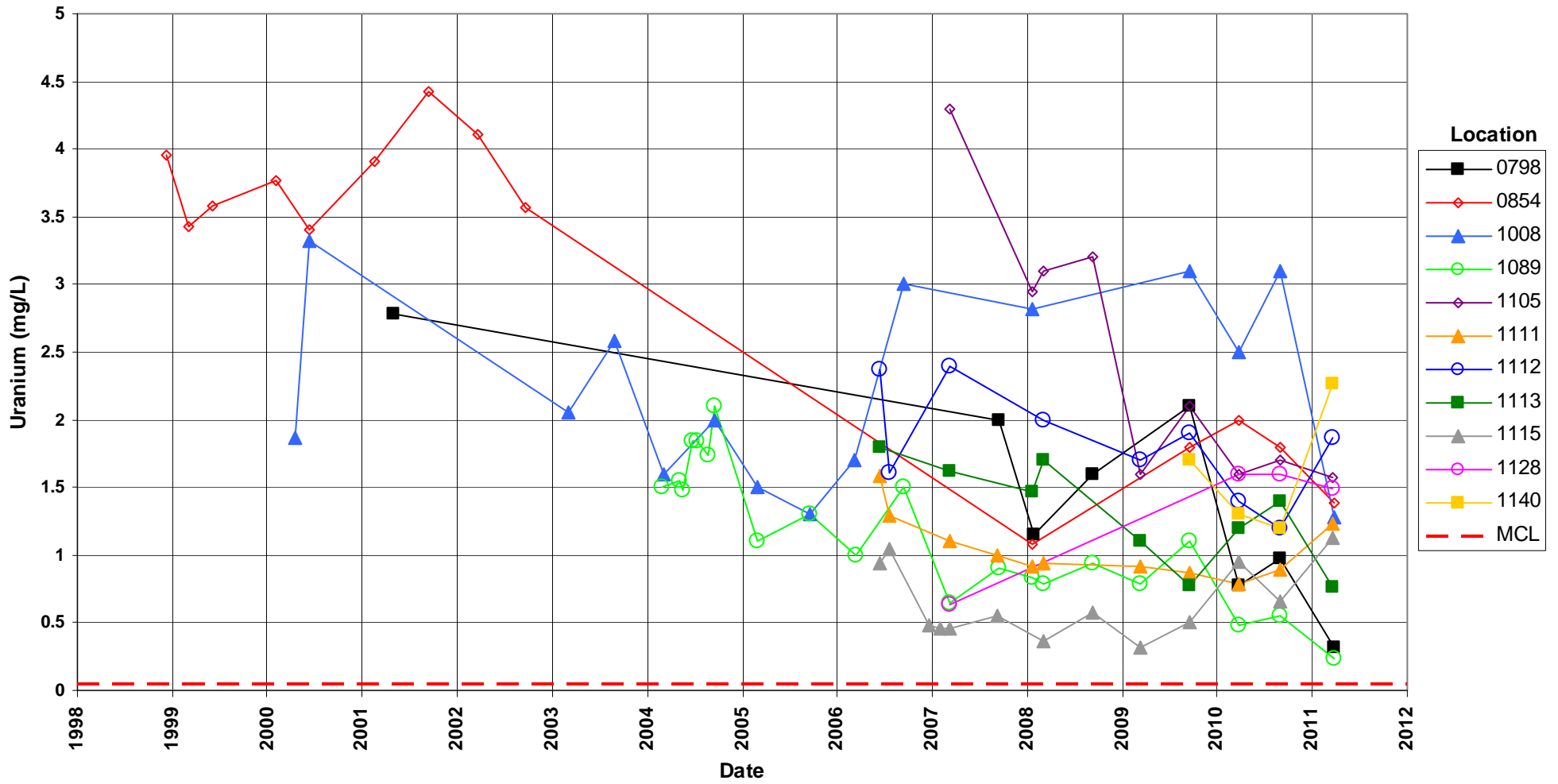
Shiprock Disposal Site (Floodplain) Sulfate Concentration



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

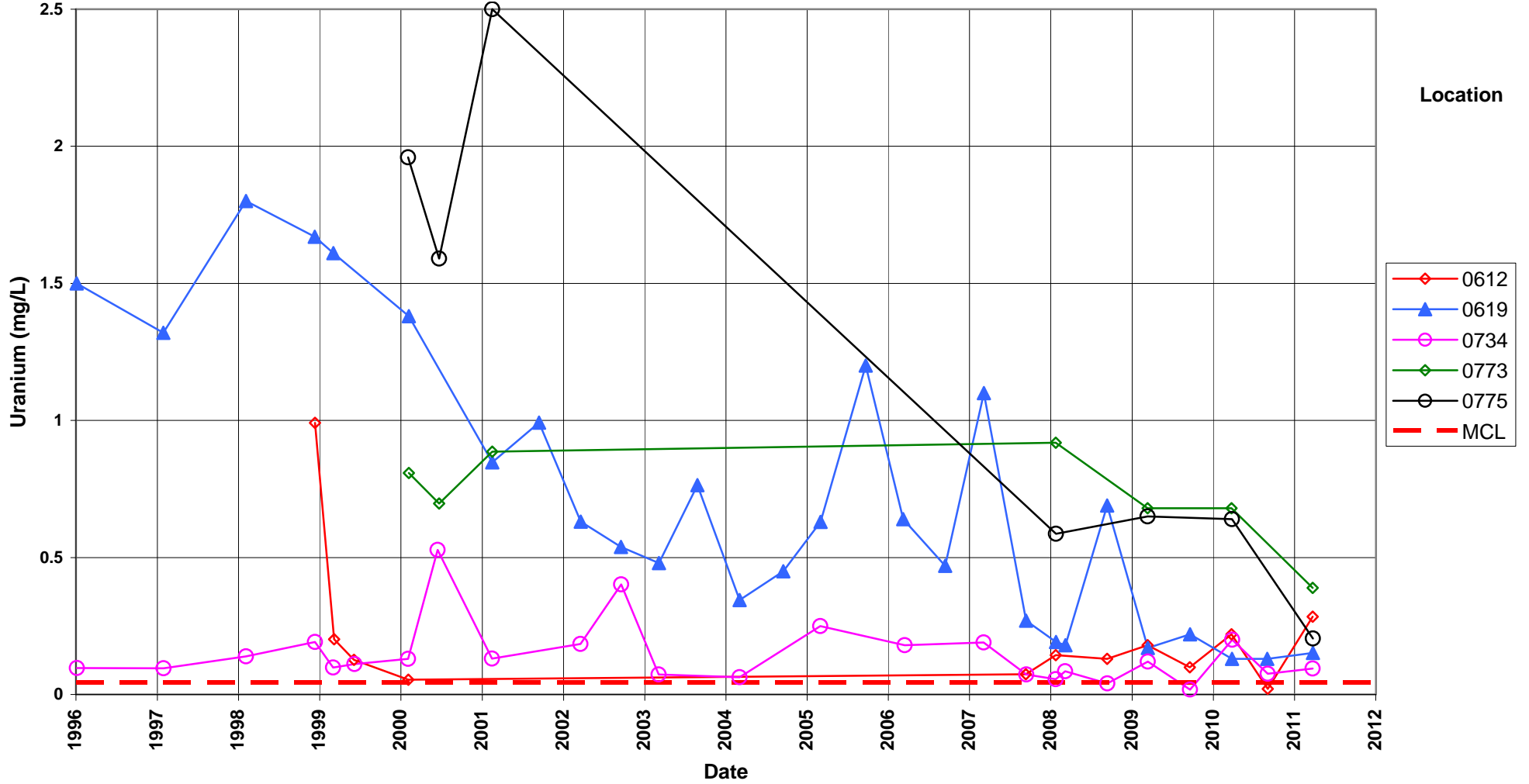


Shiprock Disposal Site (Floodplain)
Uranium Concentration
 Maximum Contaminant Level (MCL) = 0.044 mg/L

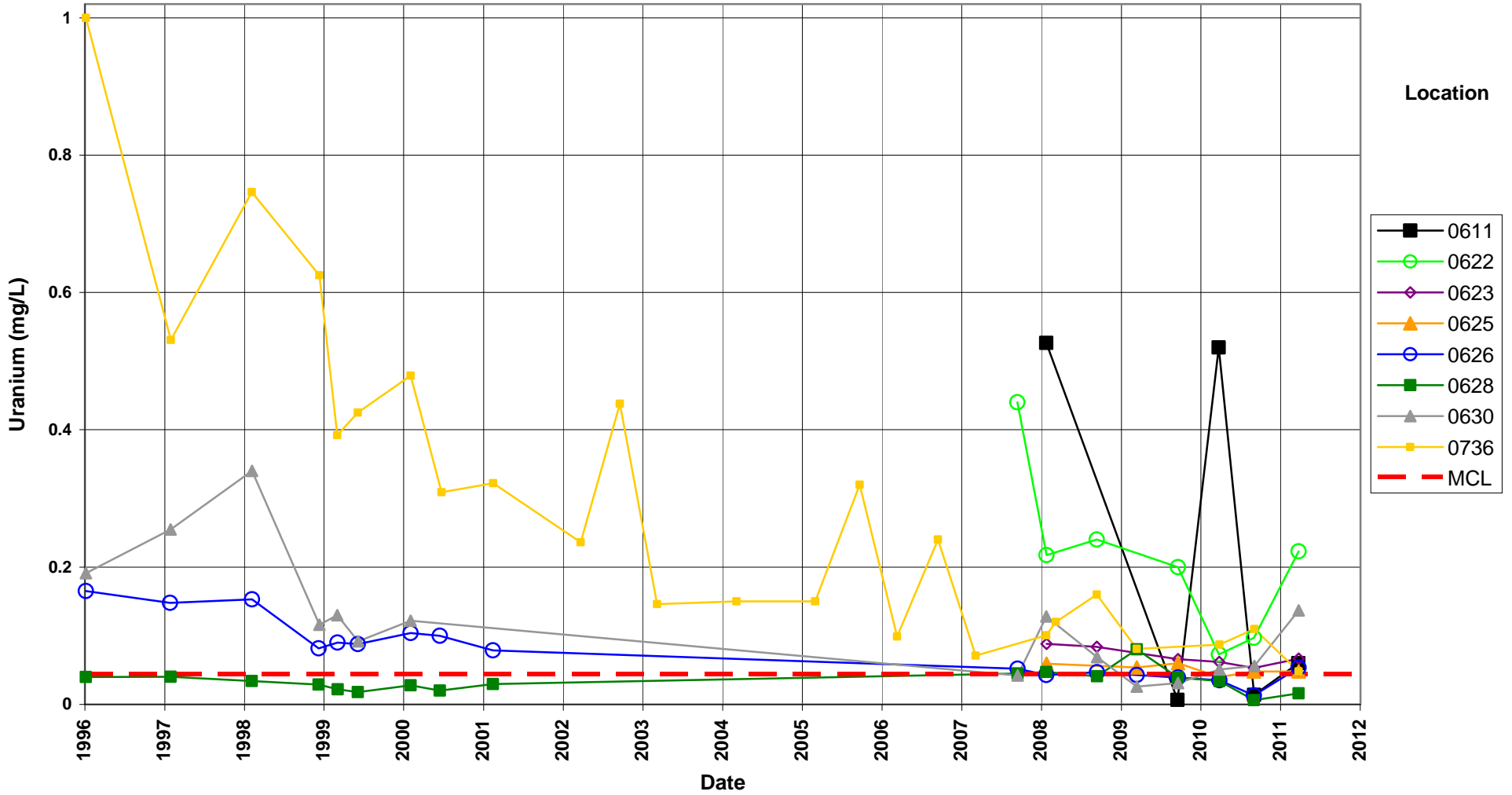


Shiprock Disposal Site (Floodplain) Uranium Concentration

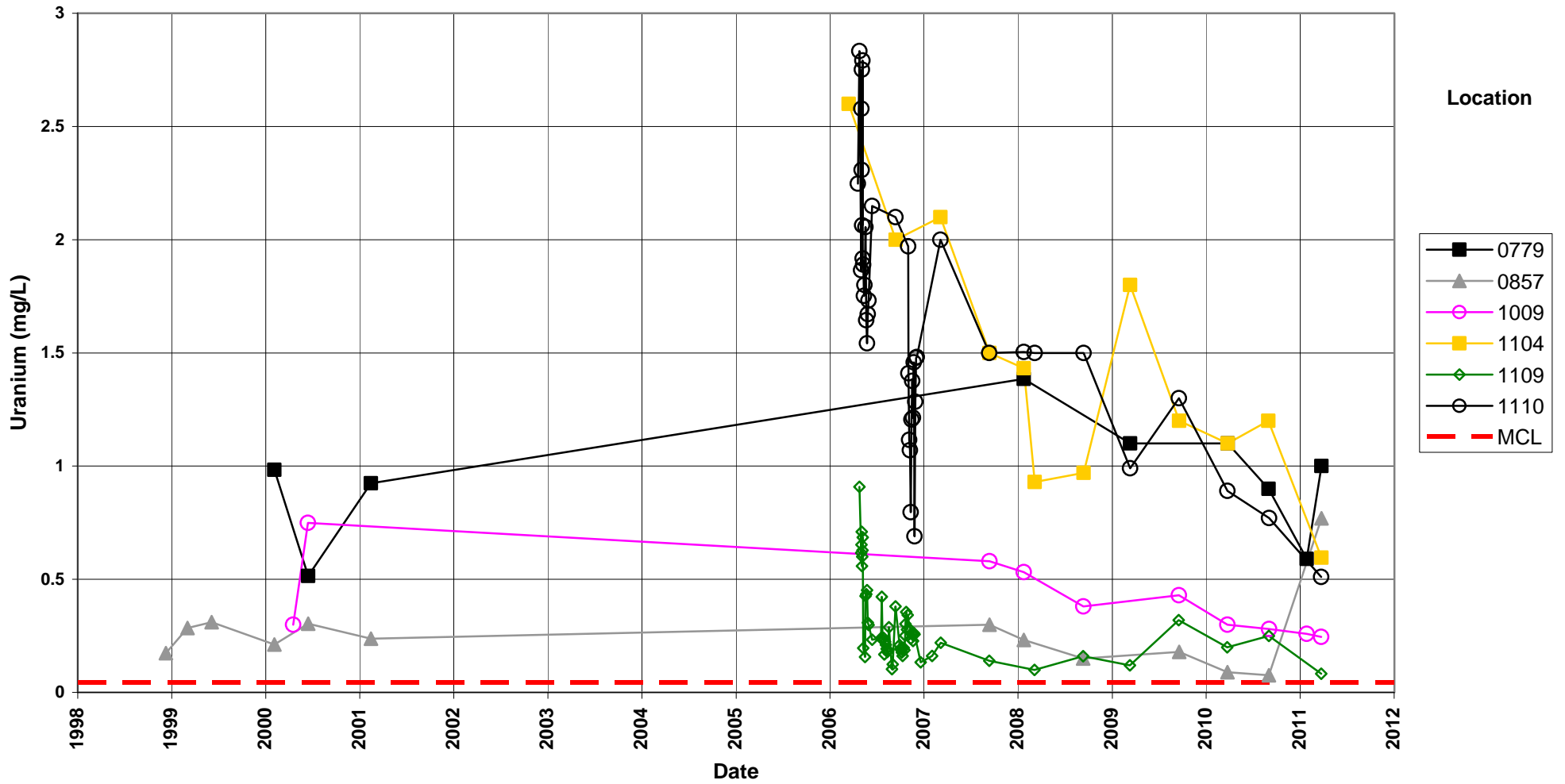
Maximum Contaminant Level (MCL) = 0.044 mg/L



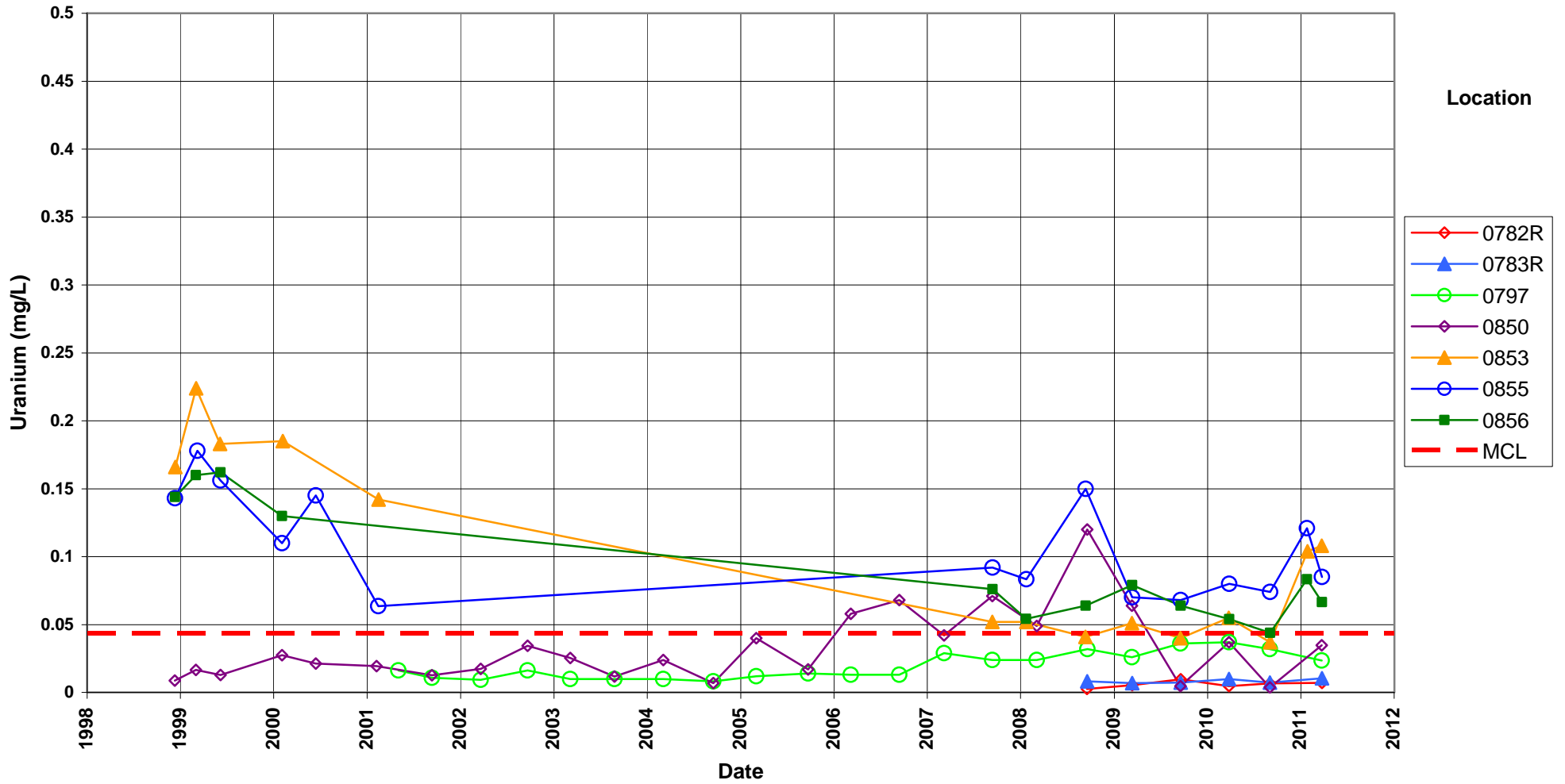
Shiprock Disposal Site (Floodplain)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



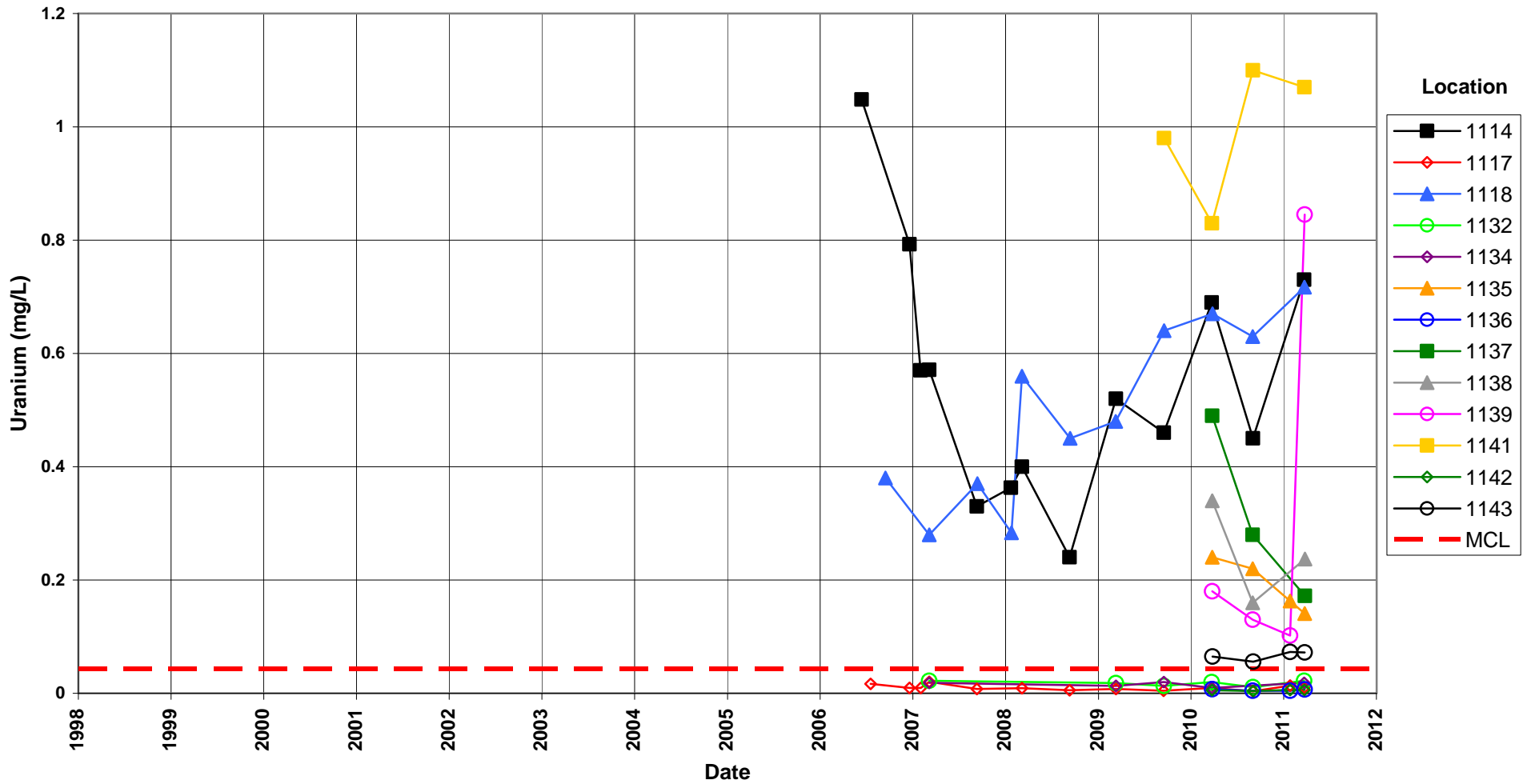
Shiprock Disposal Site (Floodplain)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



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



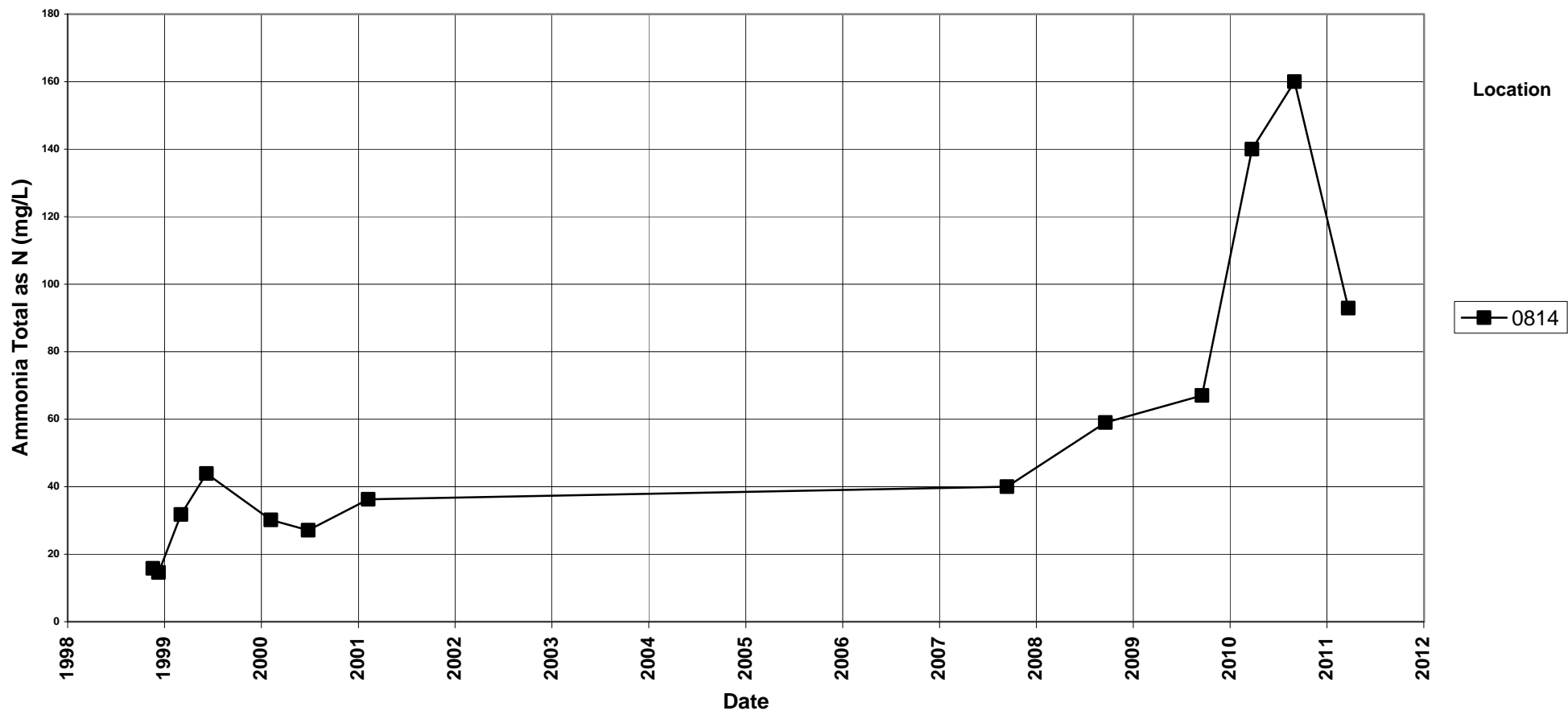
Shiprock Disposal Site (Floodplain)
Uranium Concentration
 Maximum Contaminant Level (MCL) = 0.044 mg/L



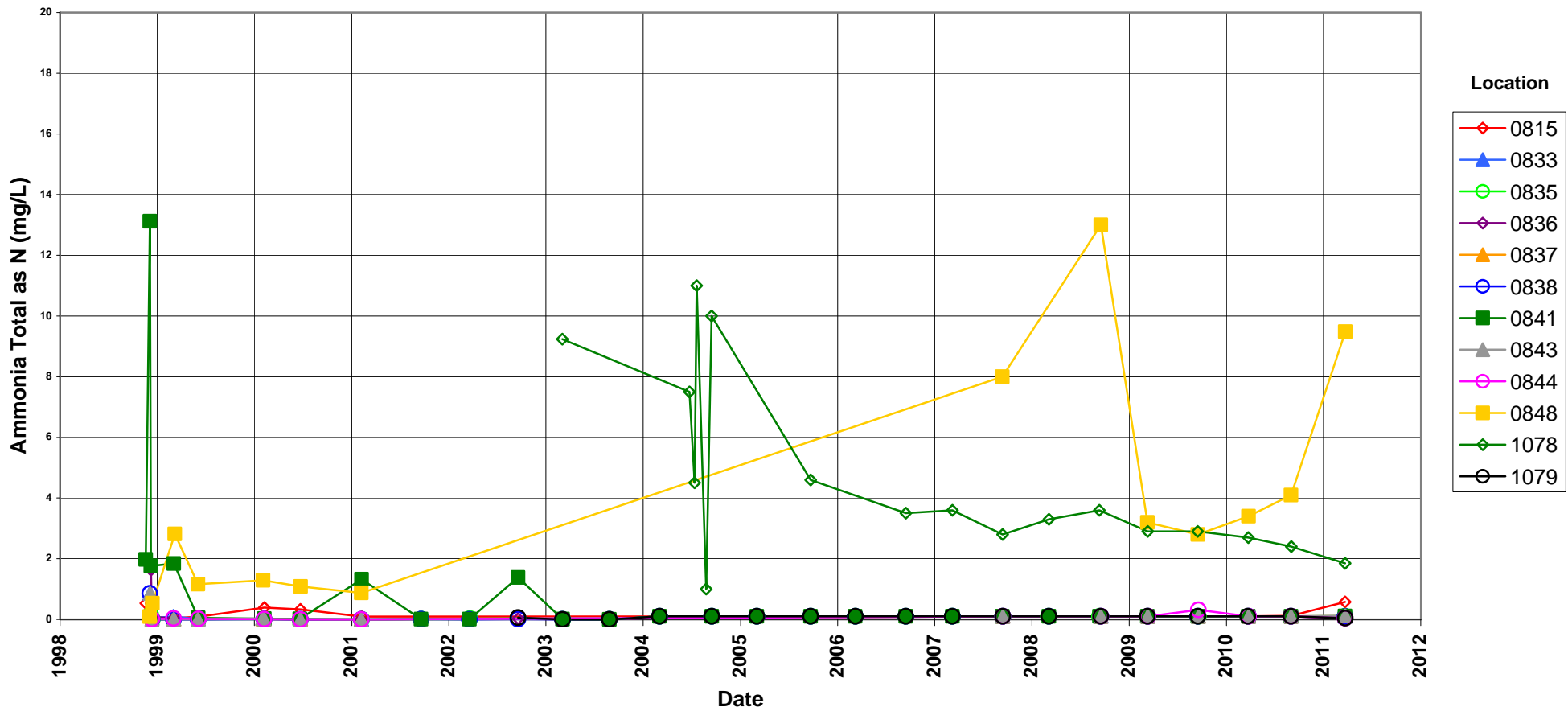
**Time-Concentration Graphs
West Terrace Groundwater Locations**

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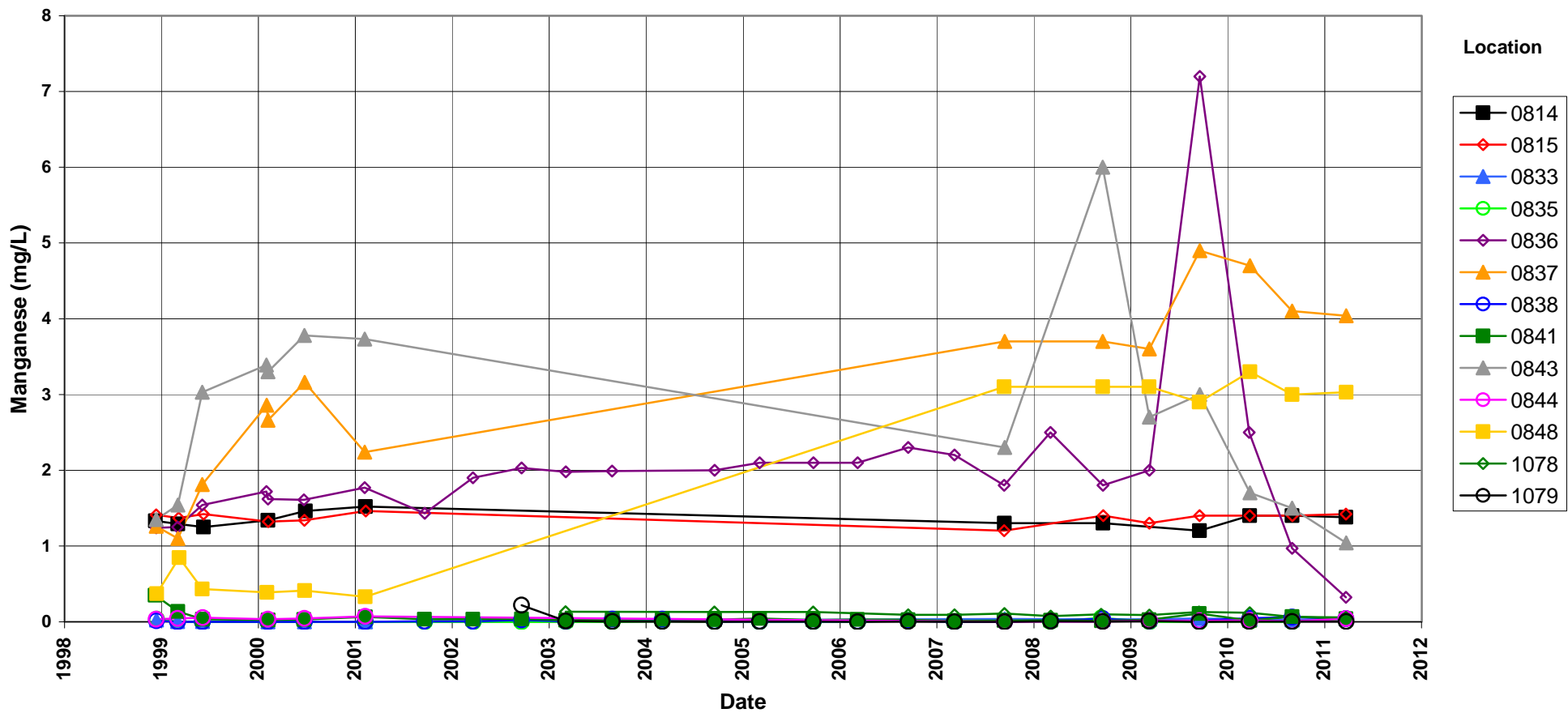
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



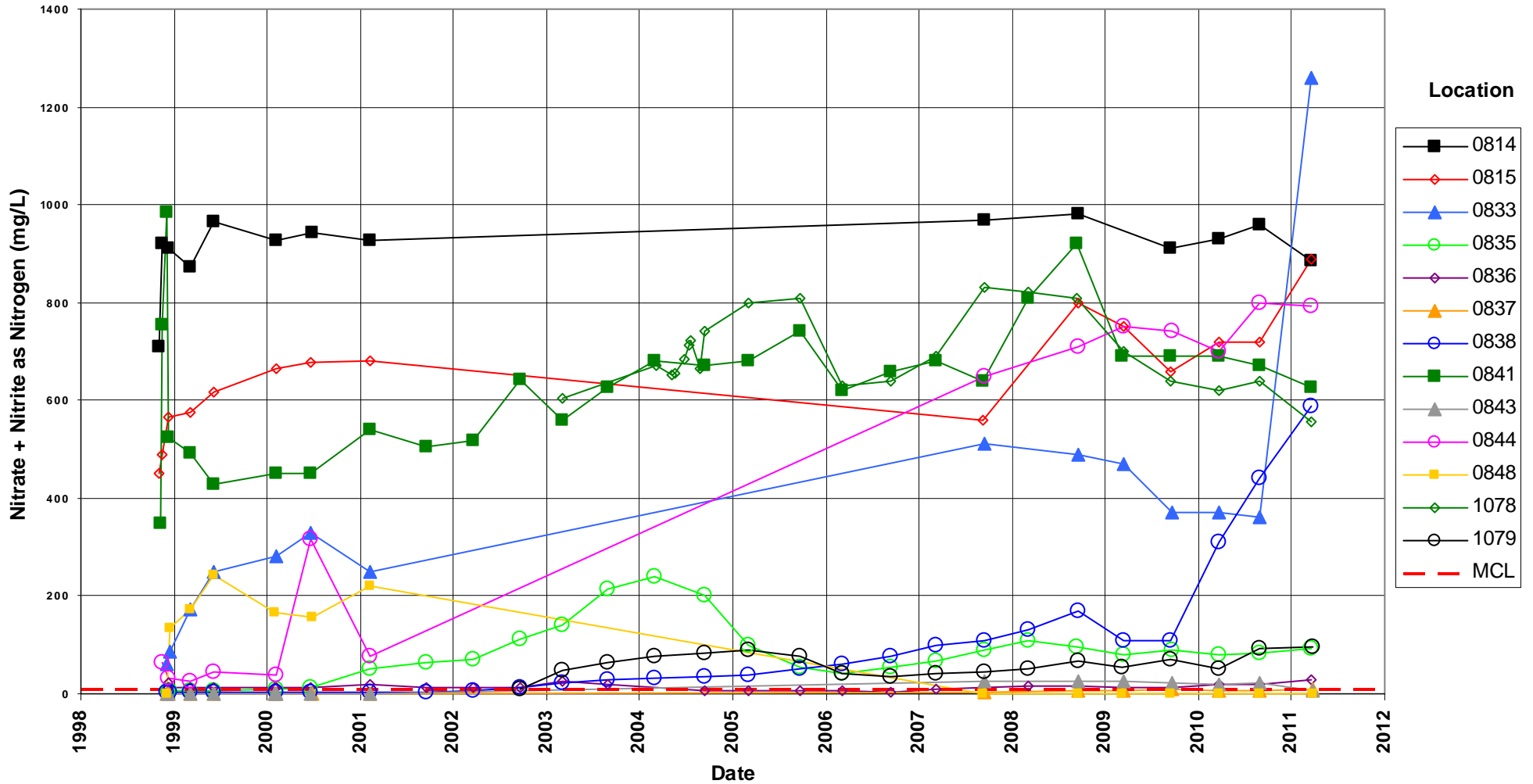
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



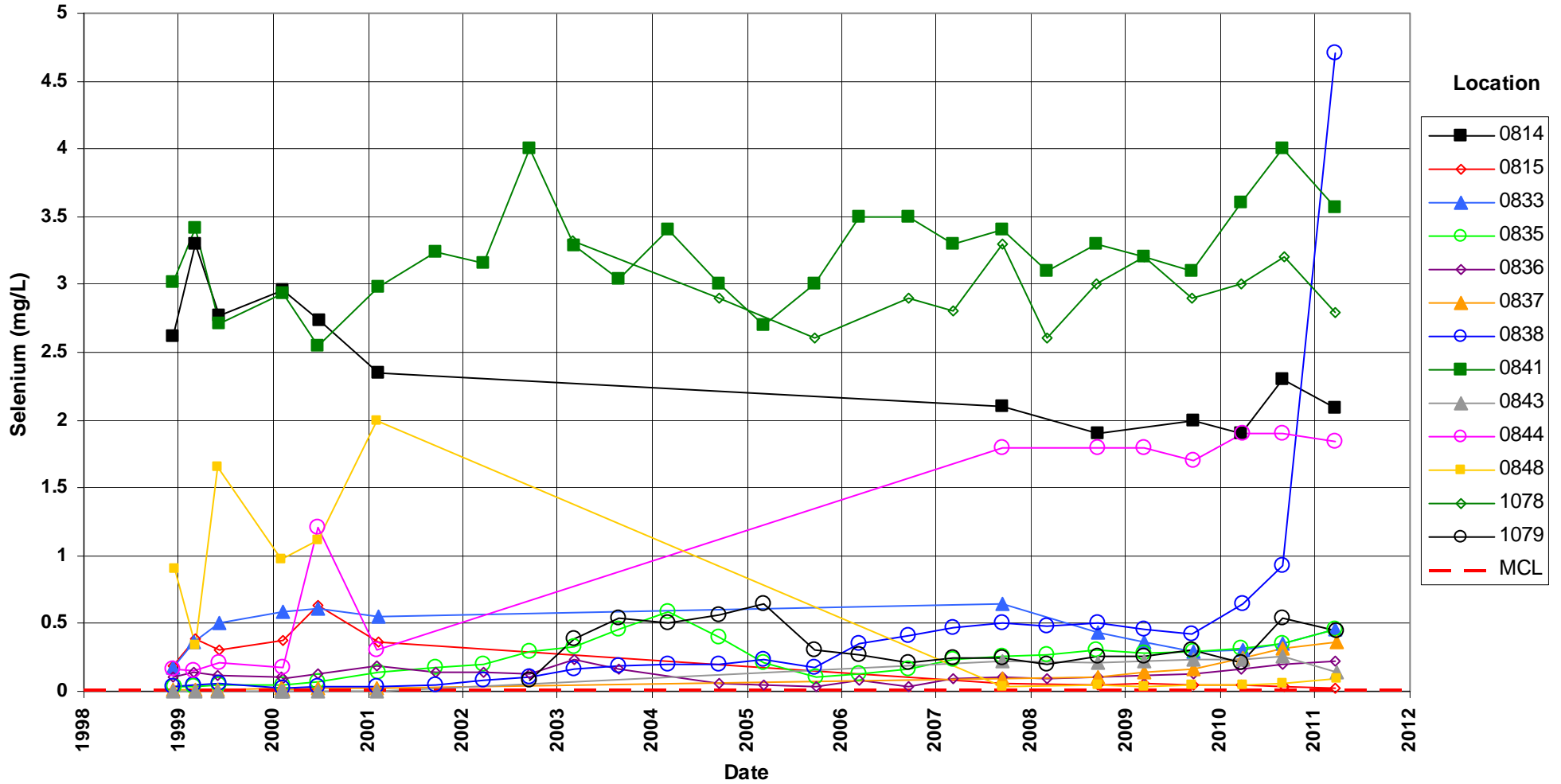
Shiprock Disposal Site (Terrace) Manganese Concentration



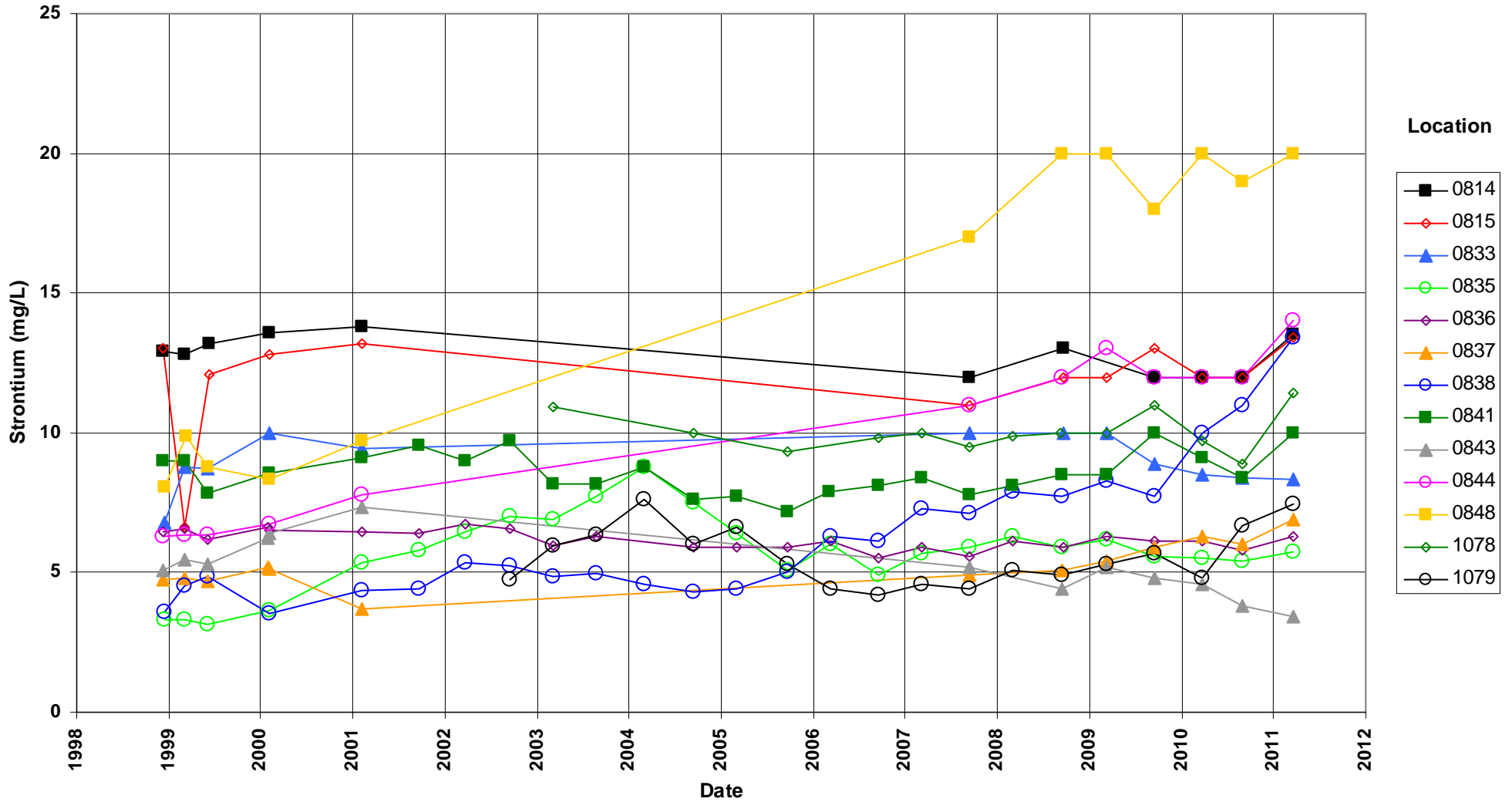
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



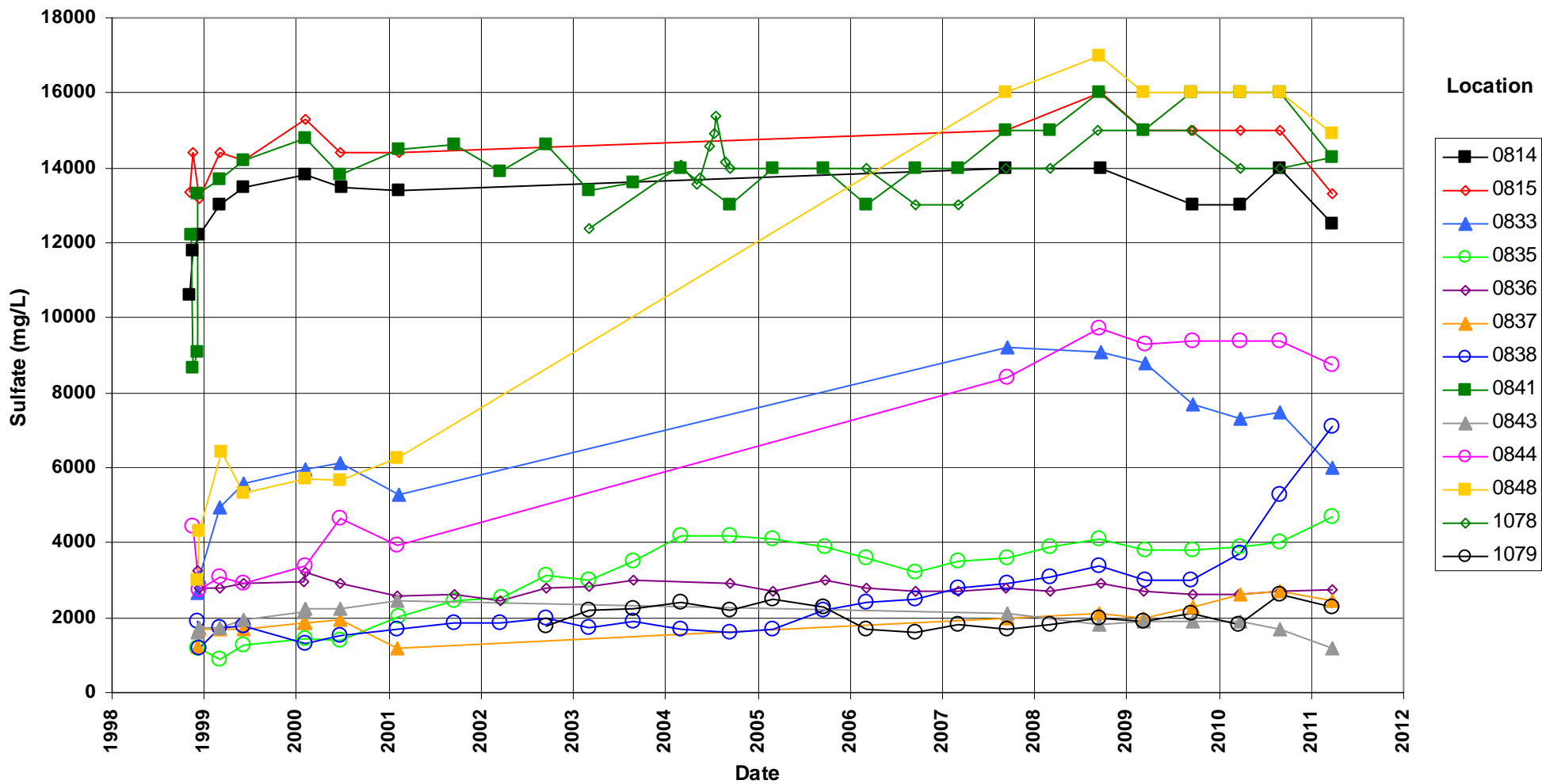
Shiprock Disposal Site (Terrace)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



Shiprock Disposal Site (Terrace) Strontium Concentration

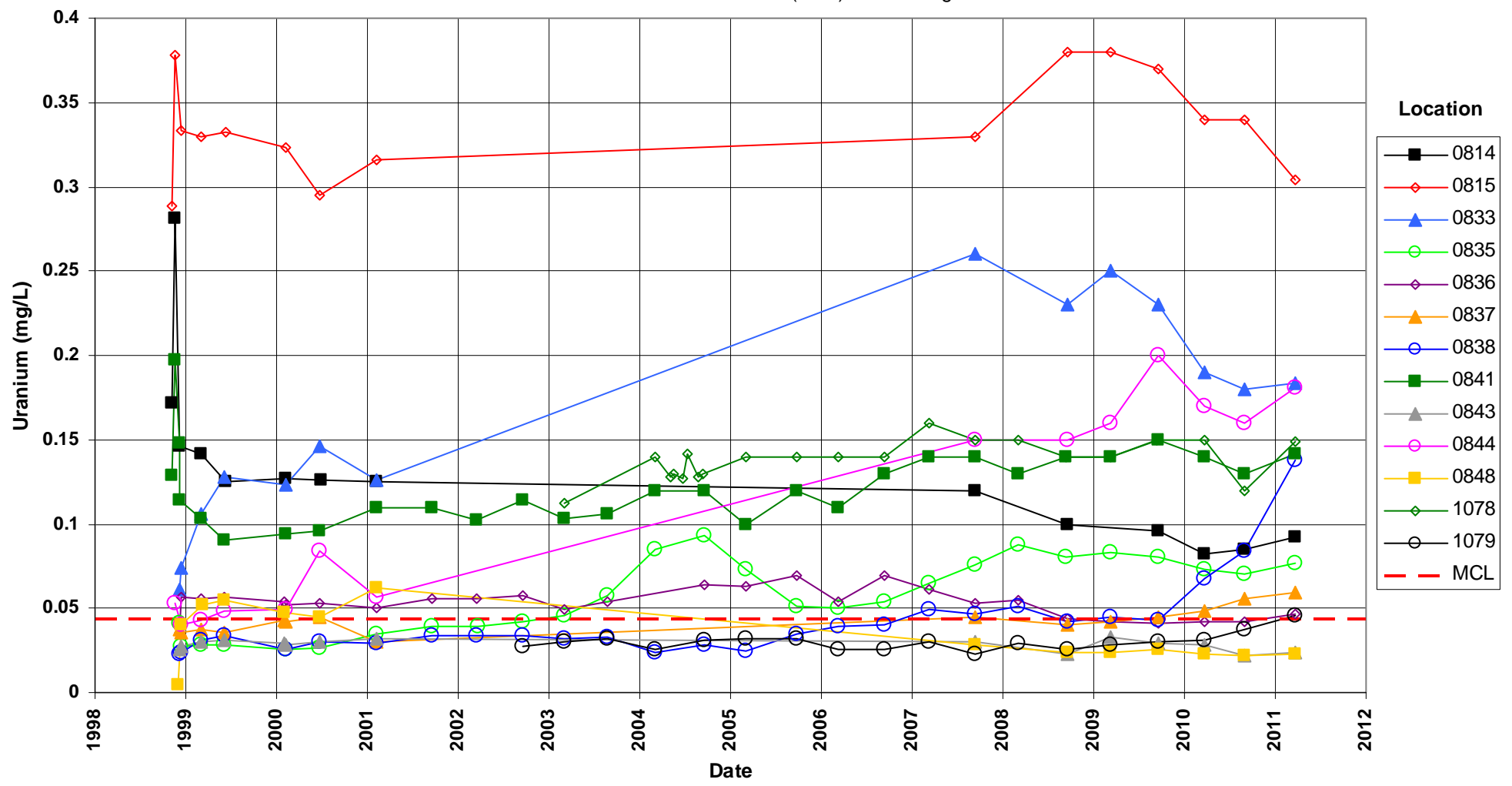


Shiprock Disposal Site (Terrace) Sulfate Concentration



Shiprock Disposal Site (Terrace) Uranium Concentration

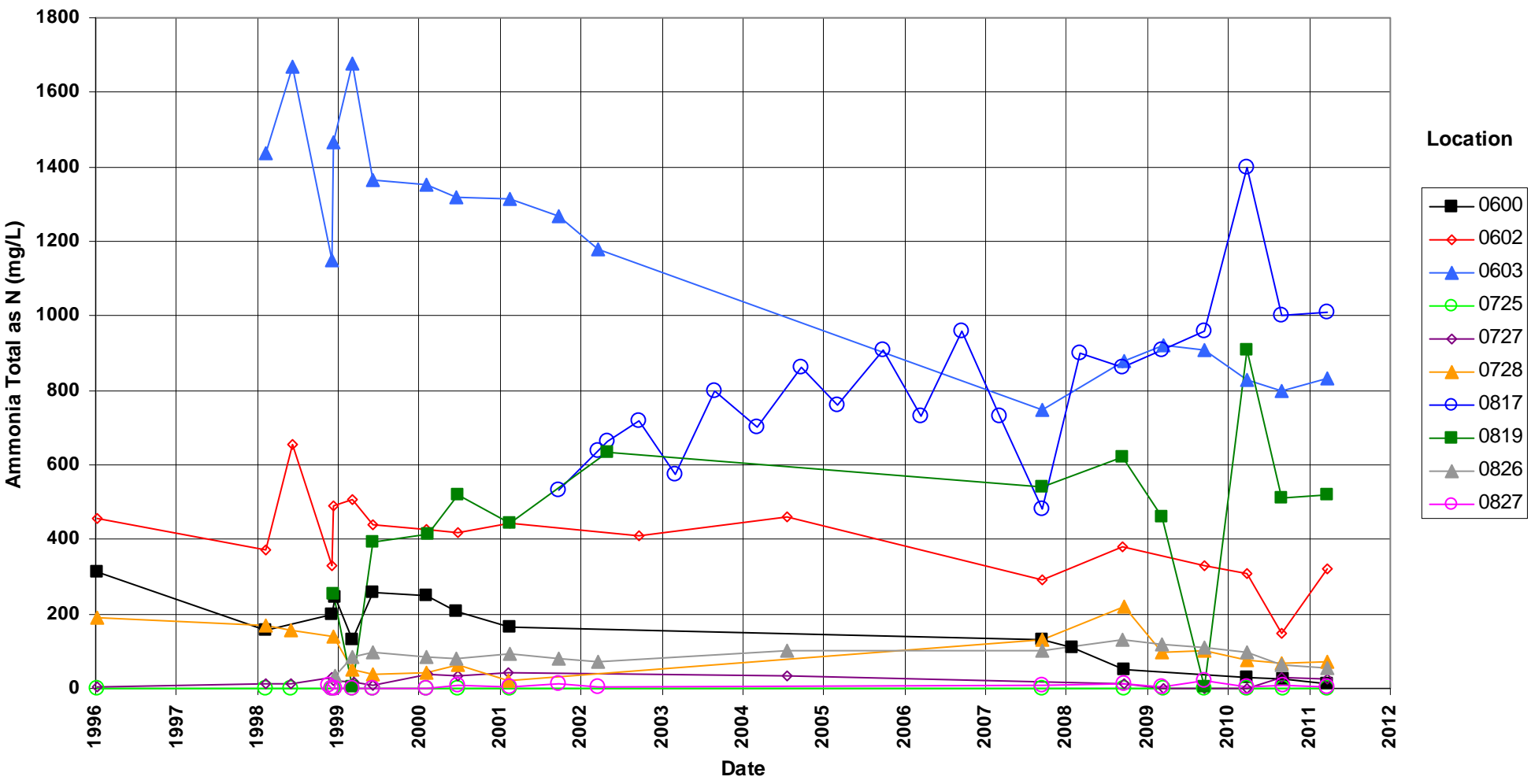
Maximum Contaminant Level (MCL) = 0.044 mg/L



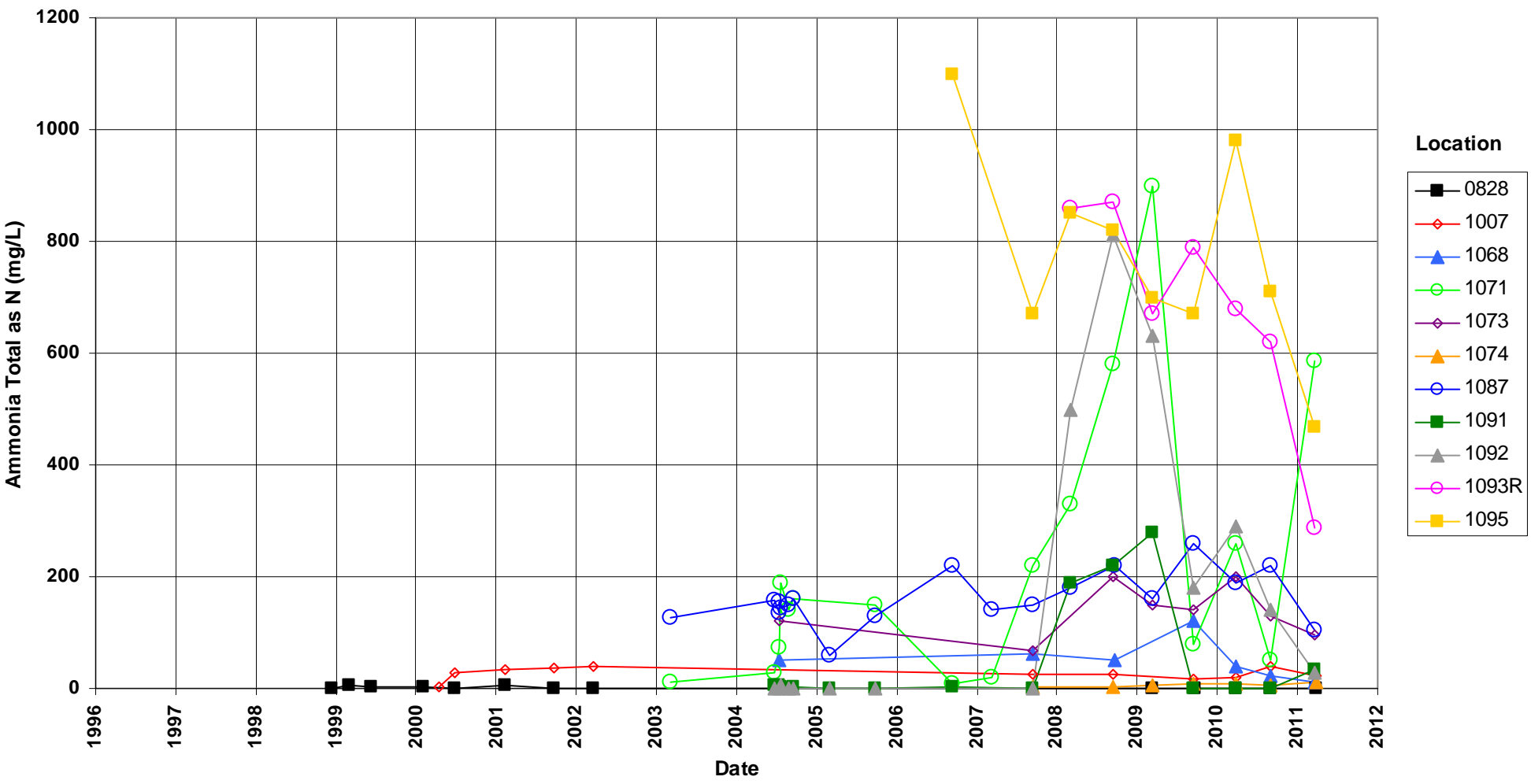
**Time-Concentration Graphs
East Terrace Groundwater Locations**

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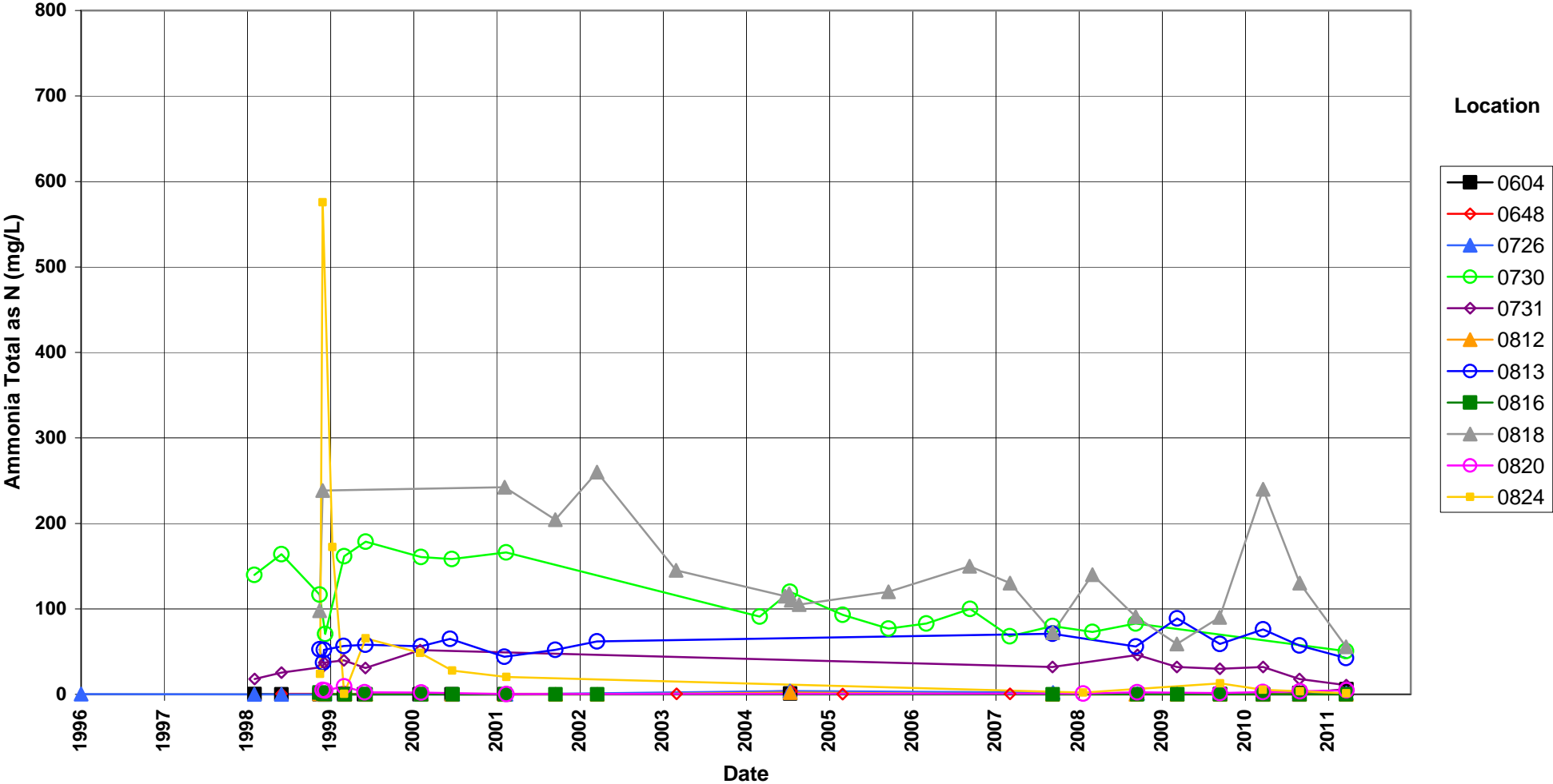
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



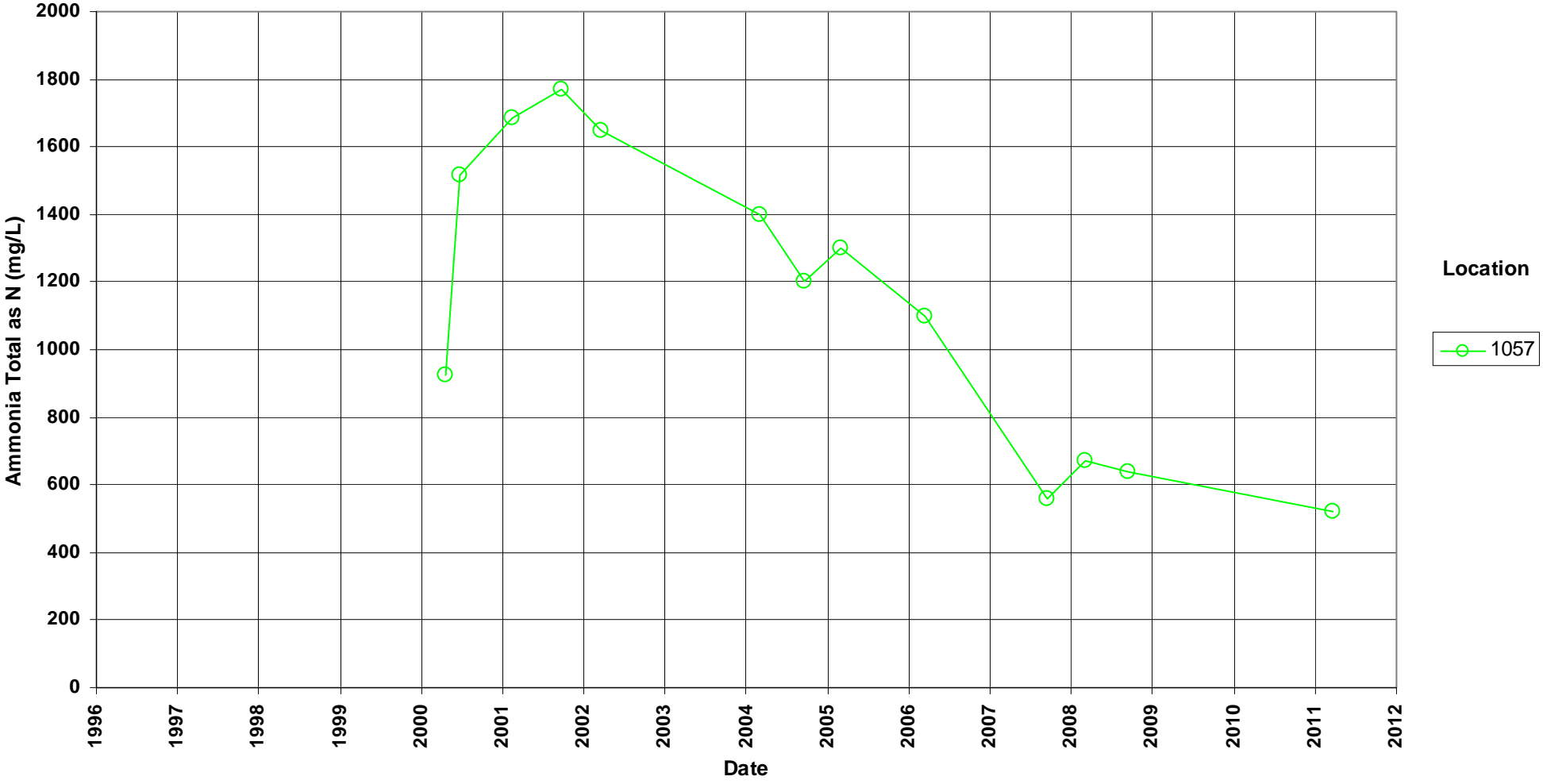
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



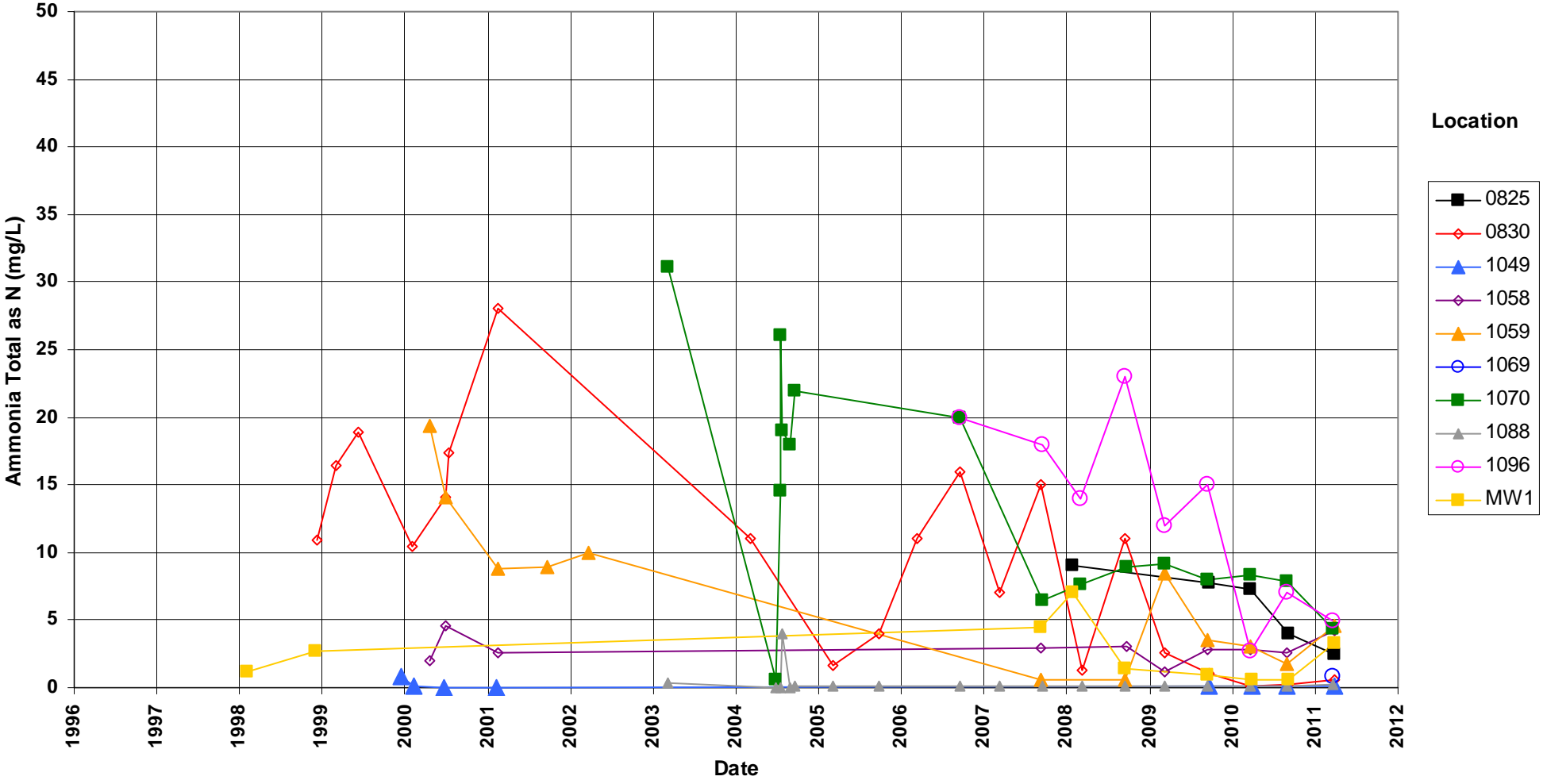
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



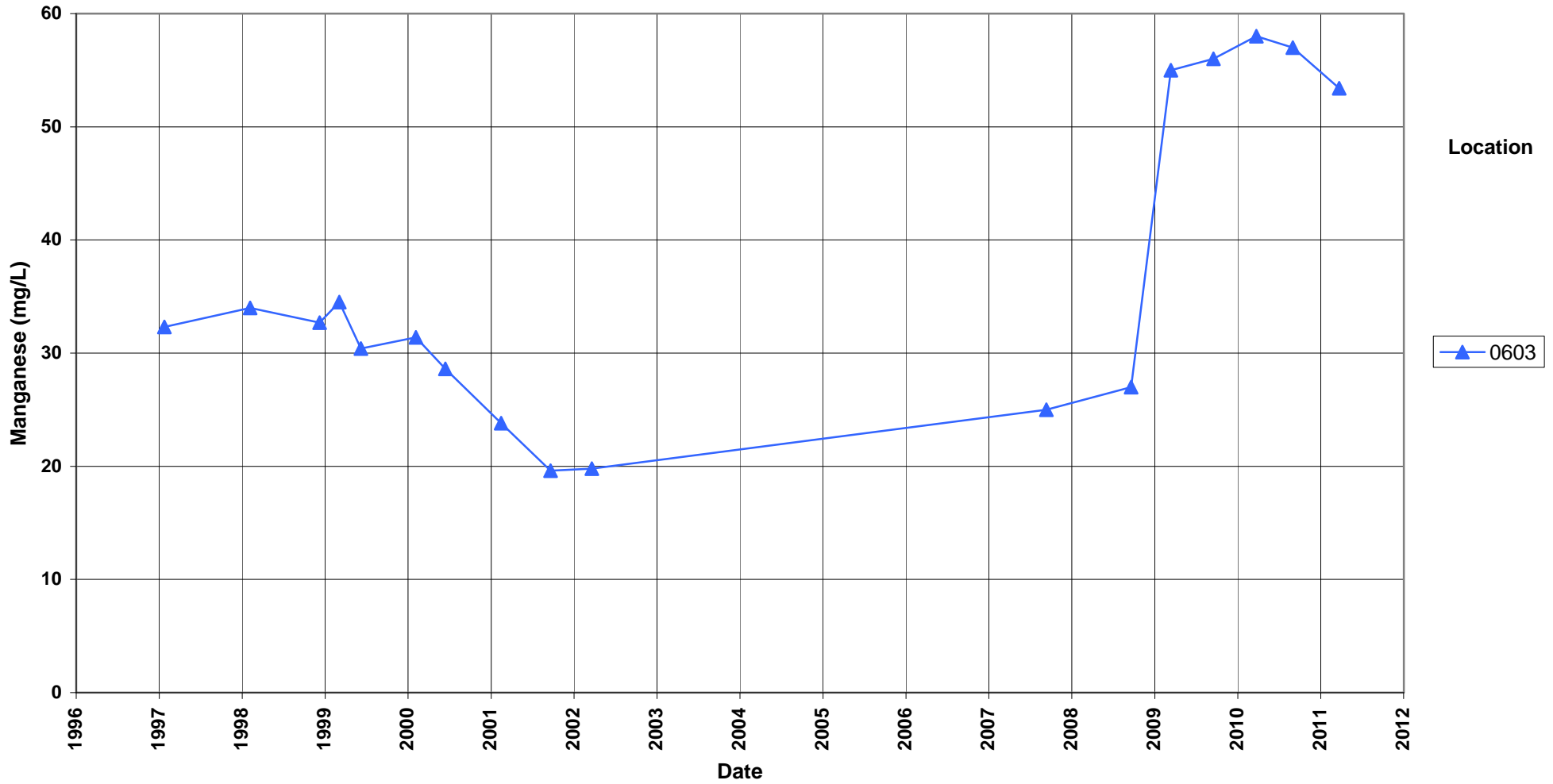
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



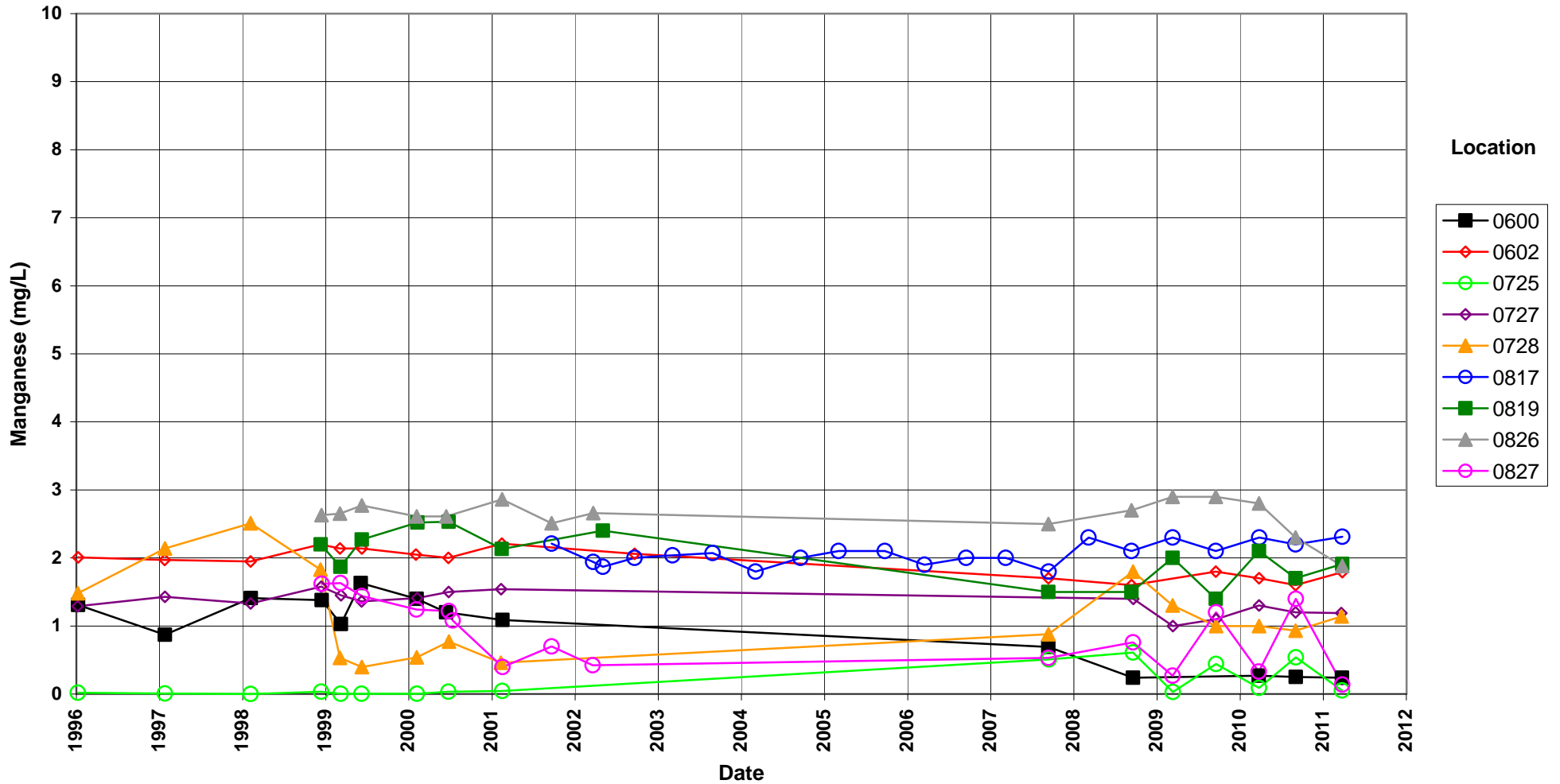
Shiprock Disposal Site (Terrace) Ammonia Total as N Concentration



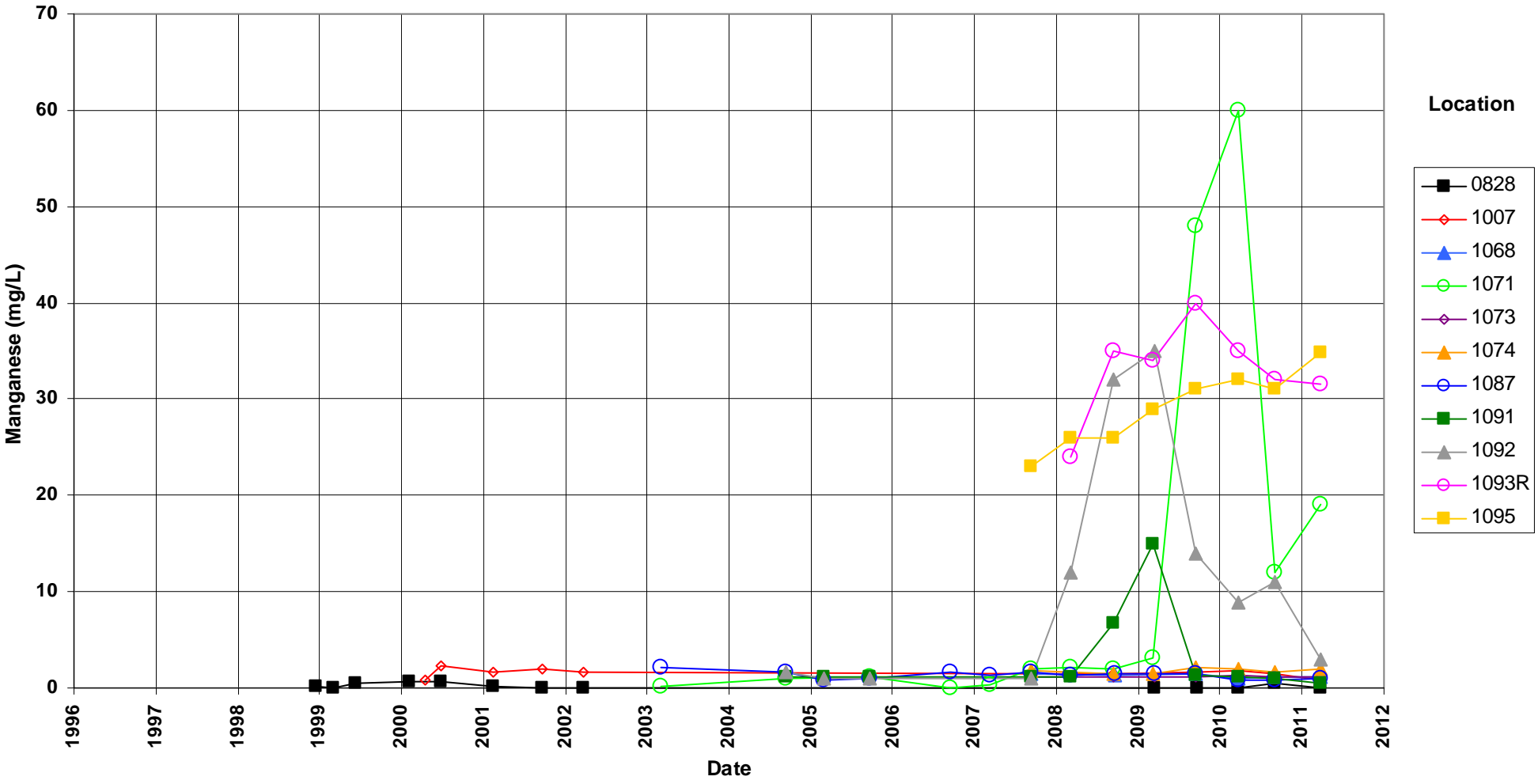
Shiprock Disposal Site (Terrace) Manganese Concentration



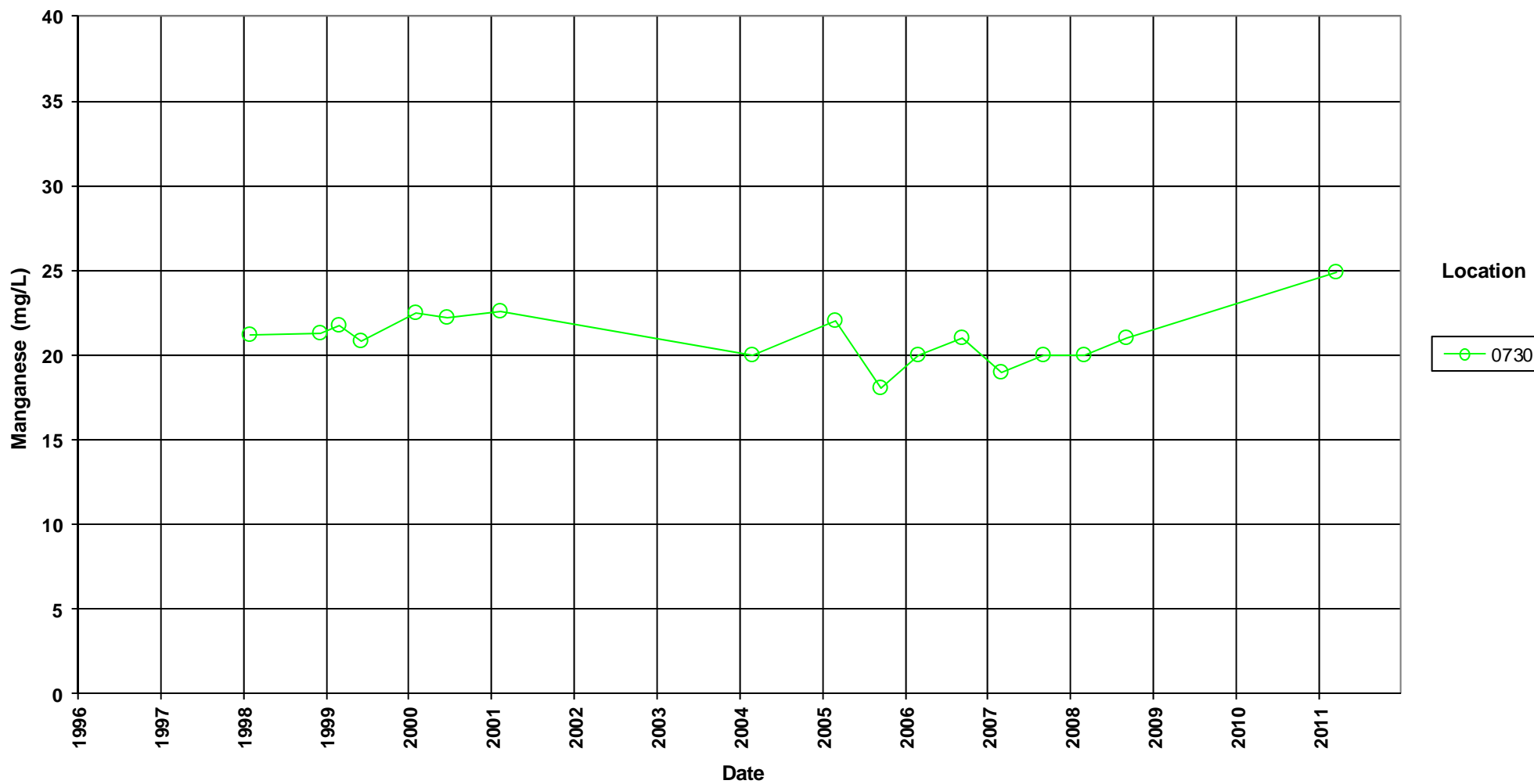
Shiprock Disposal Site (Terrace) Manganese Concentration



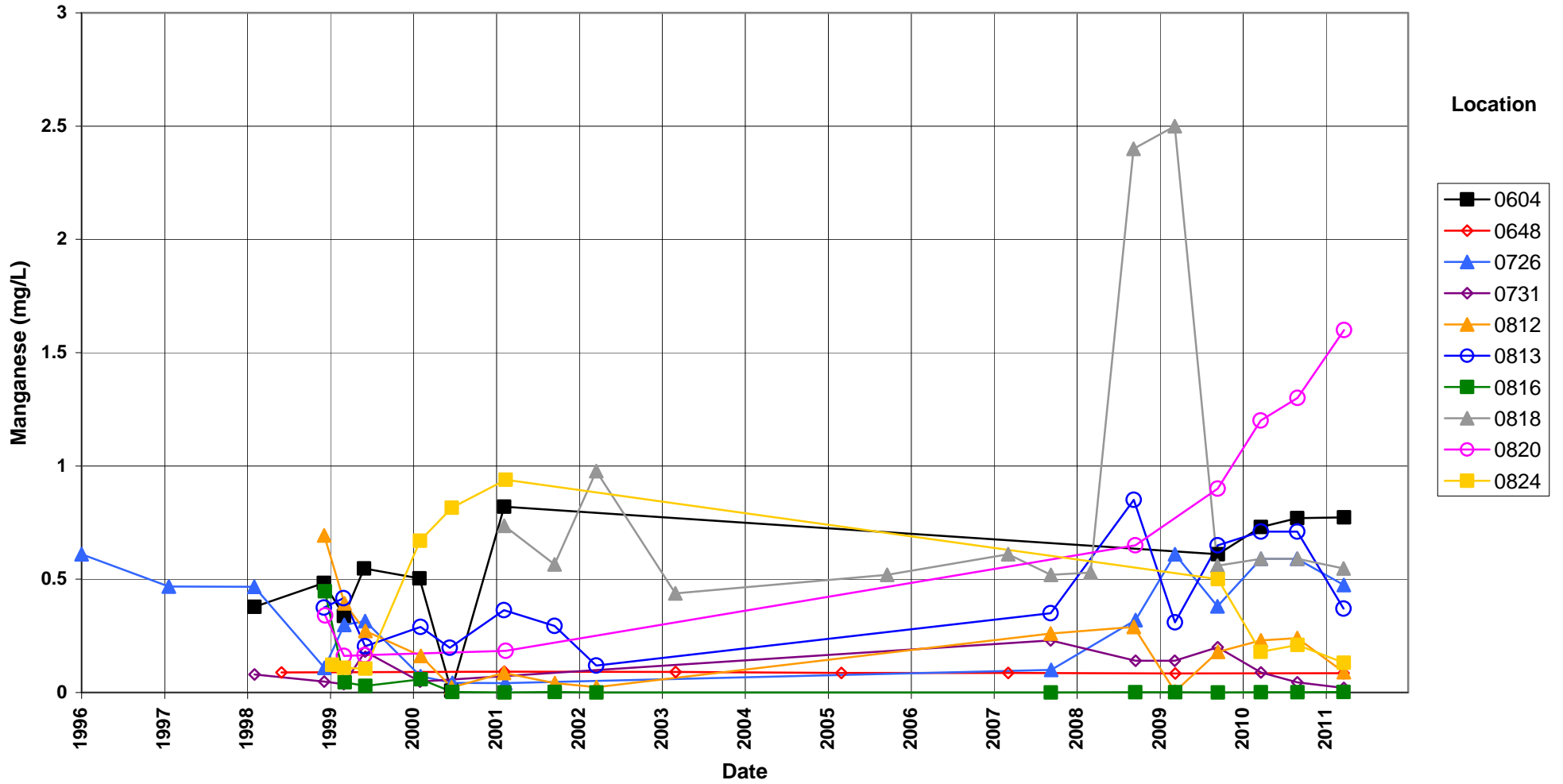
Shiprock Disposal Site (Terrace) Manganese Concentration



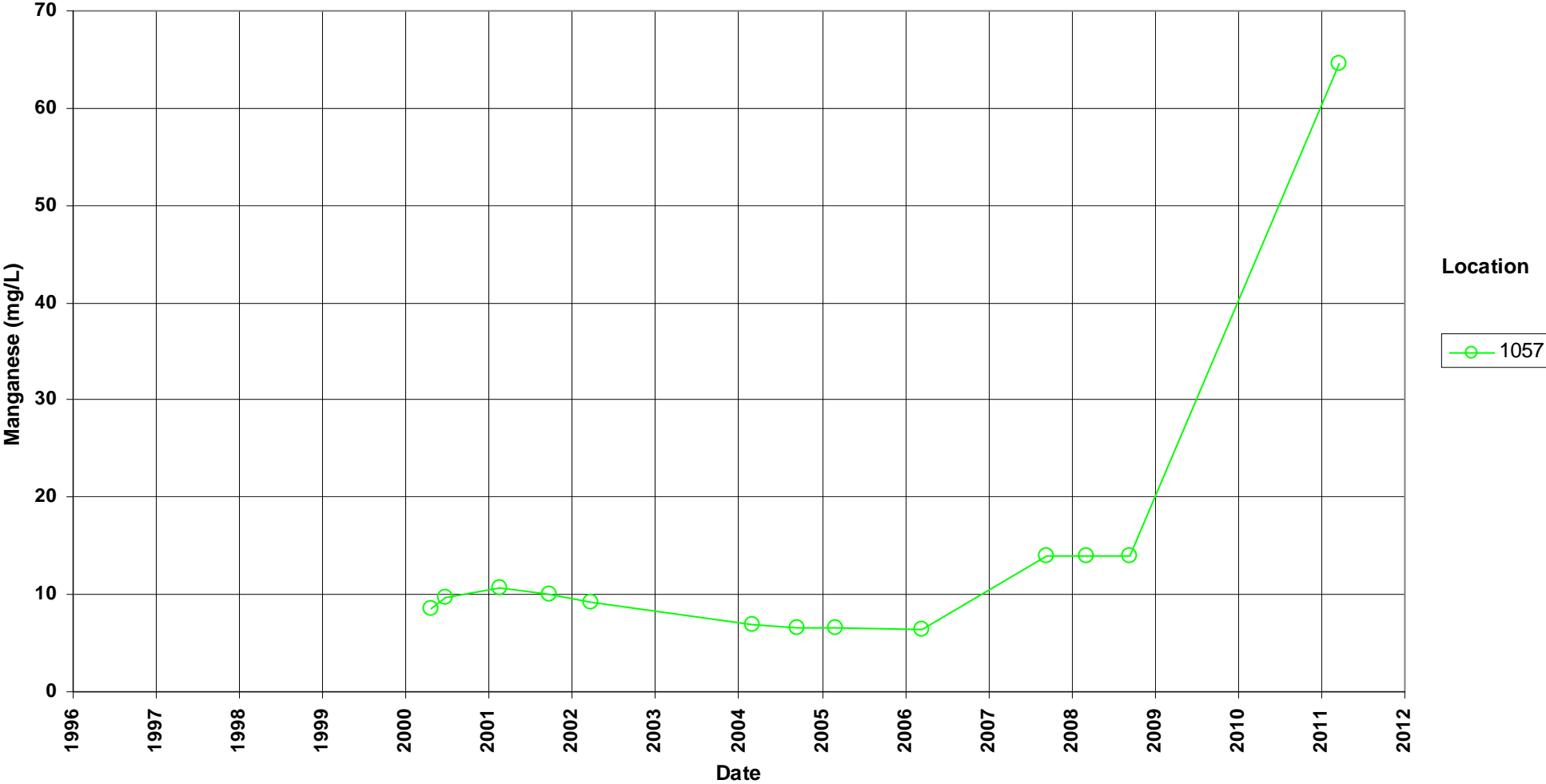
Shiprock Disposal Site (Terrace) Manganese Concentration



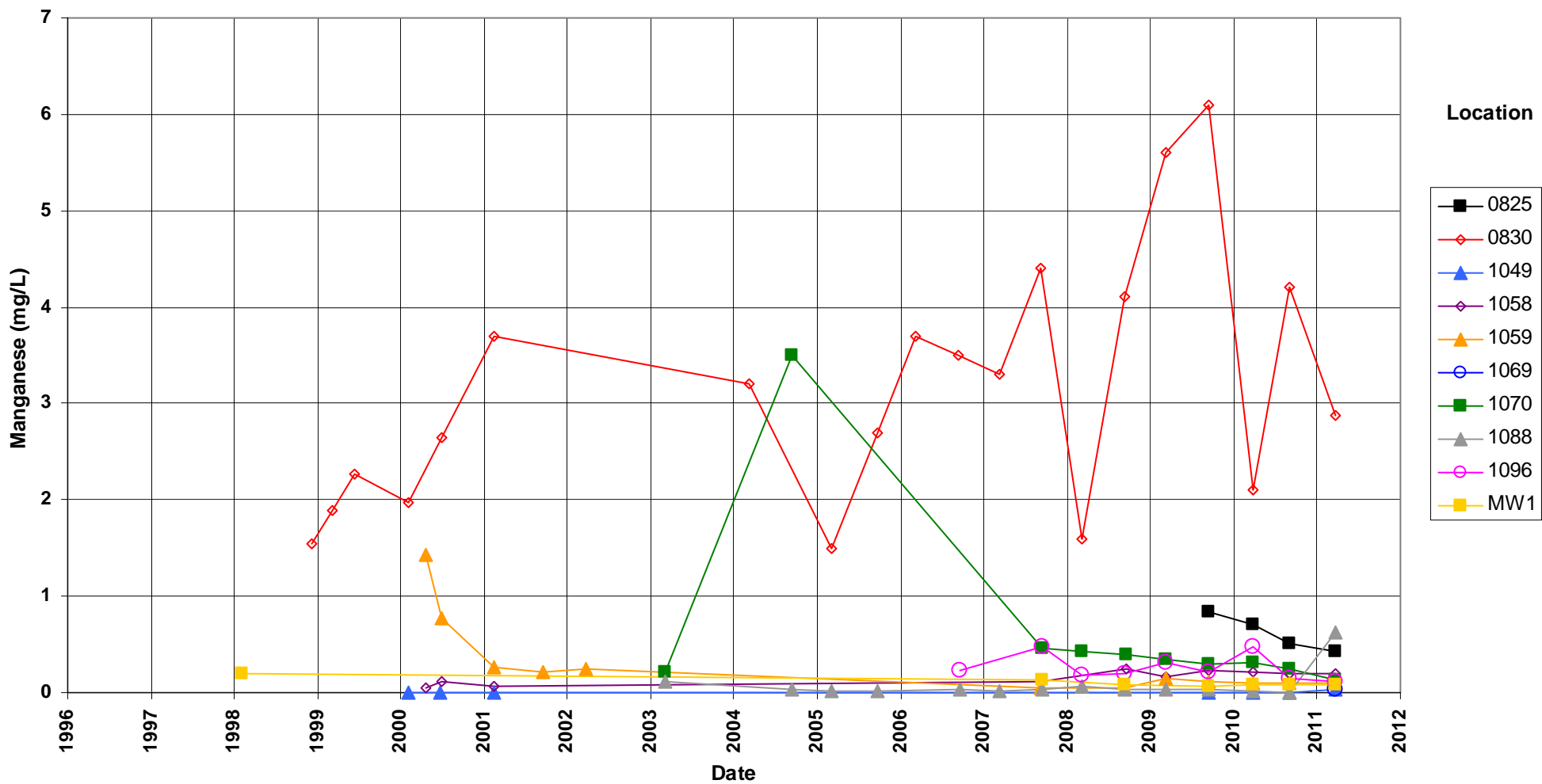
Shiprock Disposal Site (Terrace) Manganese Concentration



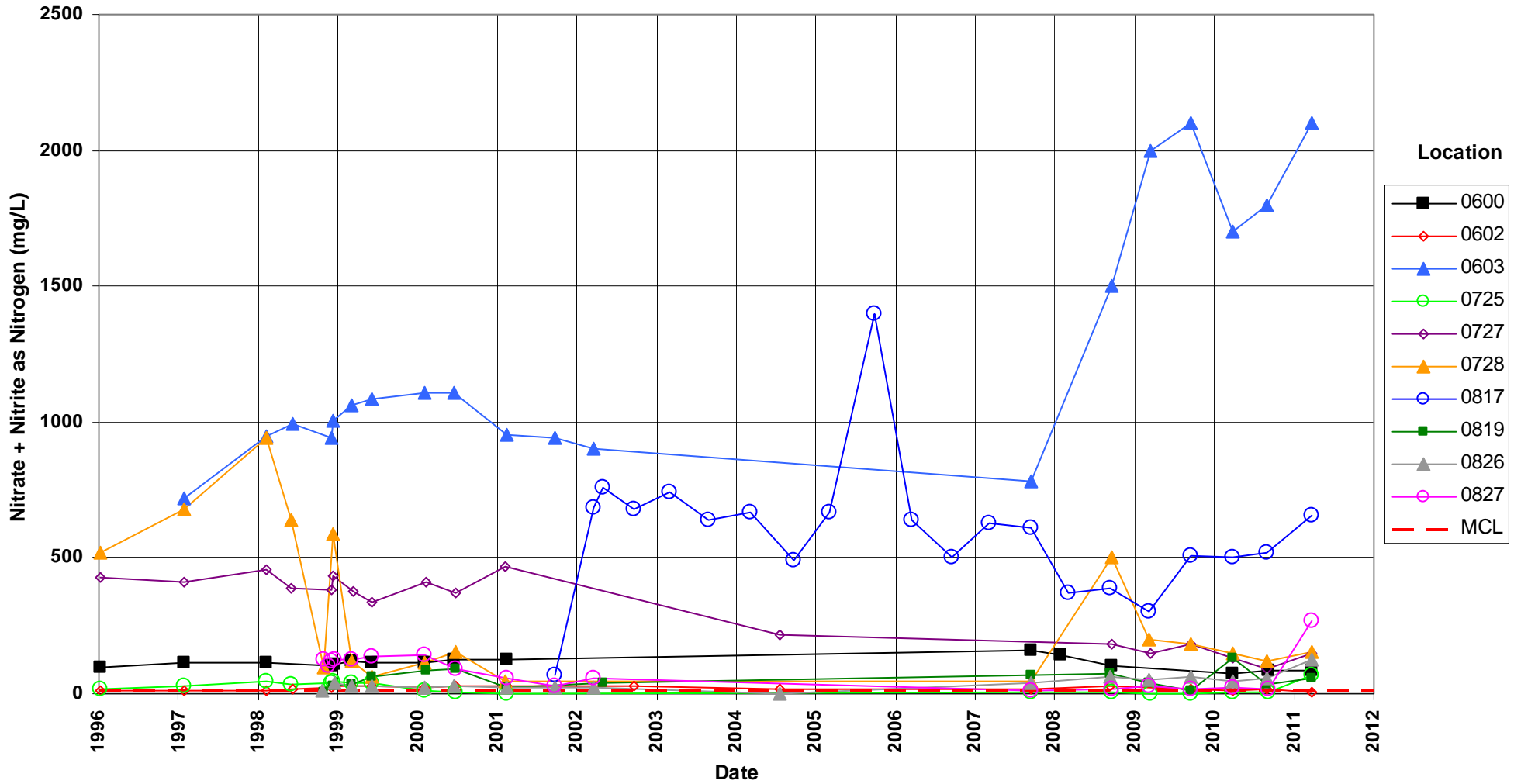
Shiprock Disposal Site (Terrace) Manganese Concentration



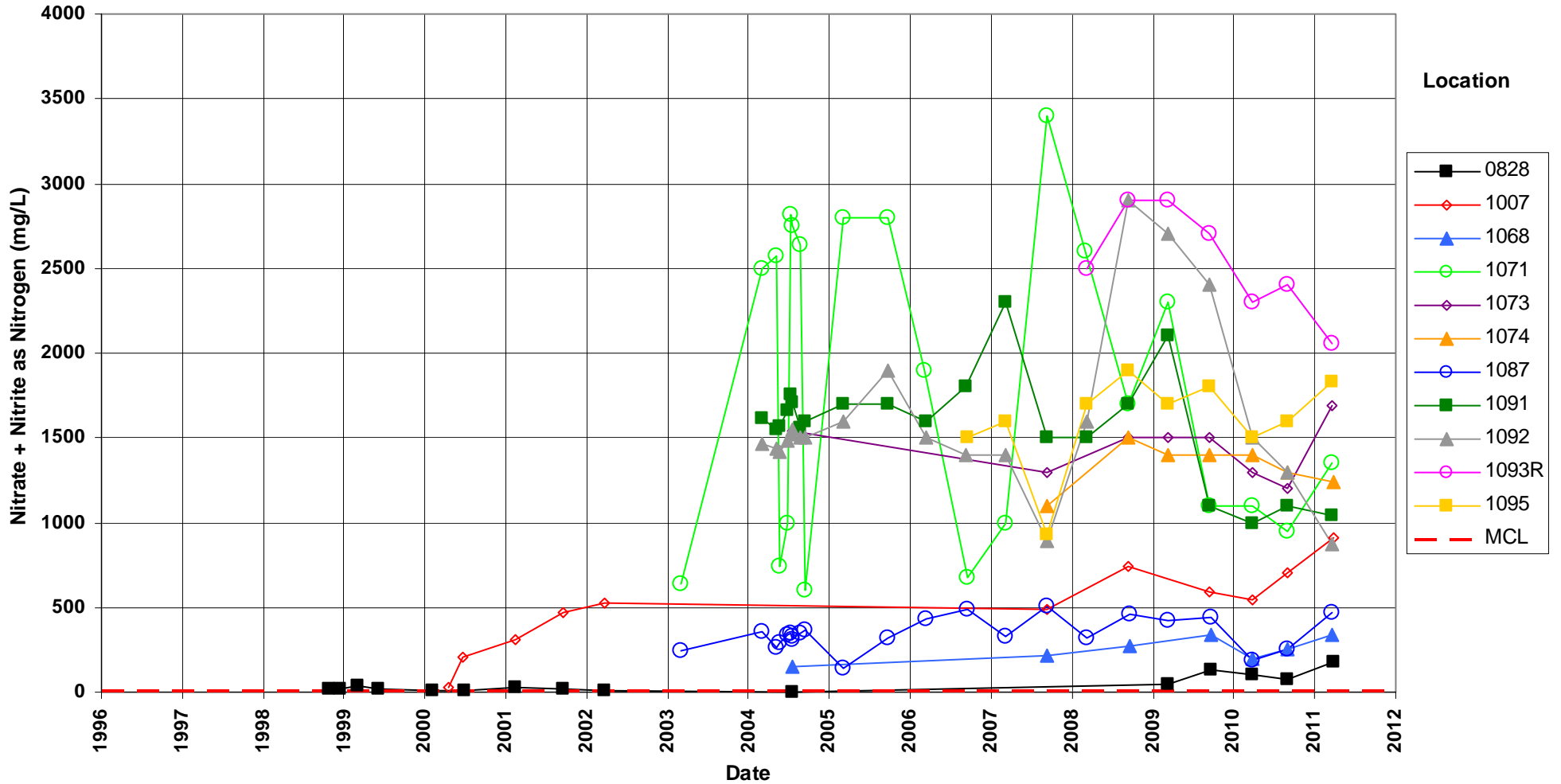
Shiprock Disposal Site (Terrace) Manganese Concentration



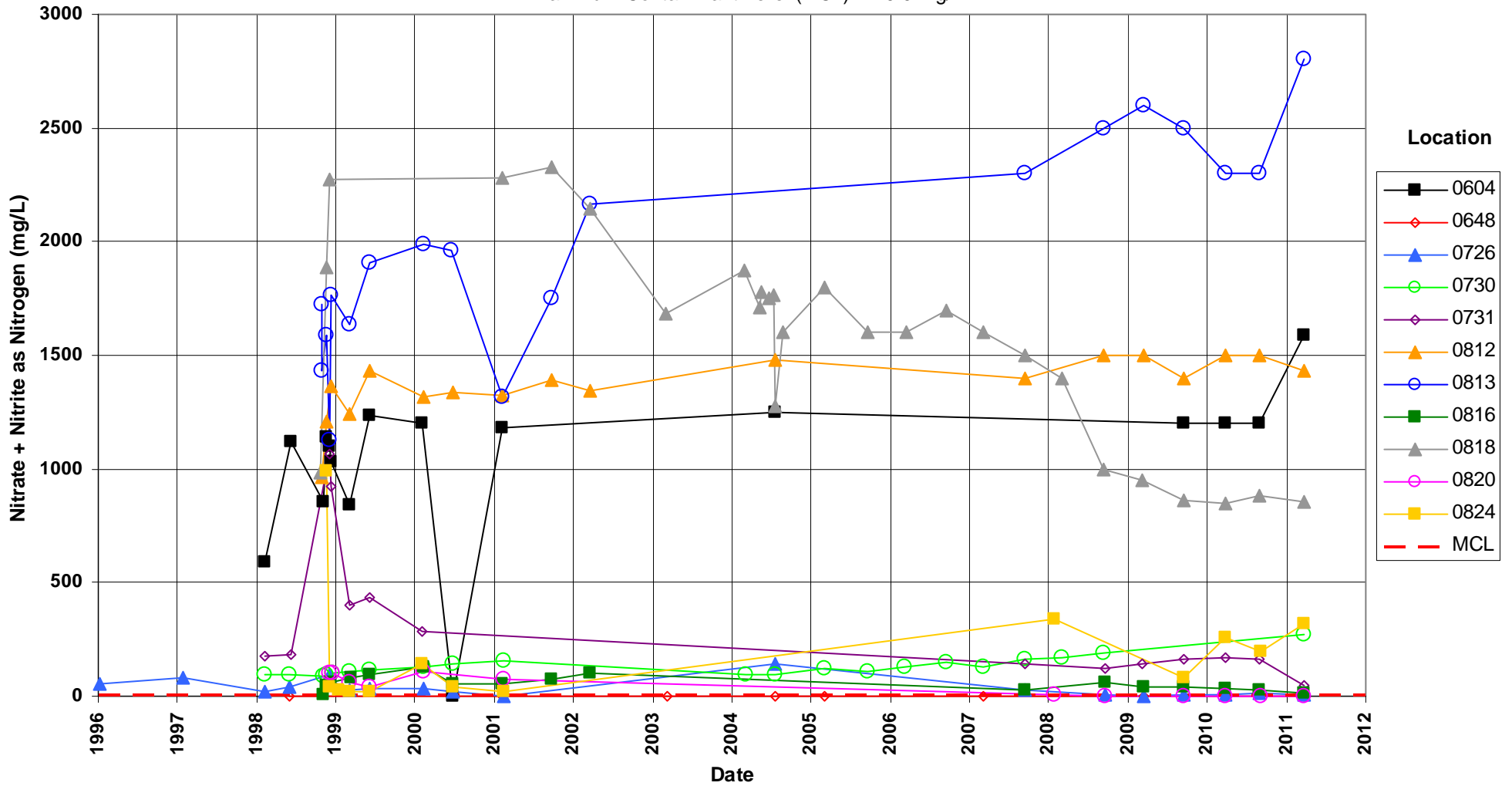
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



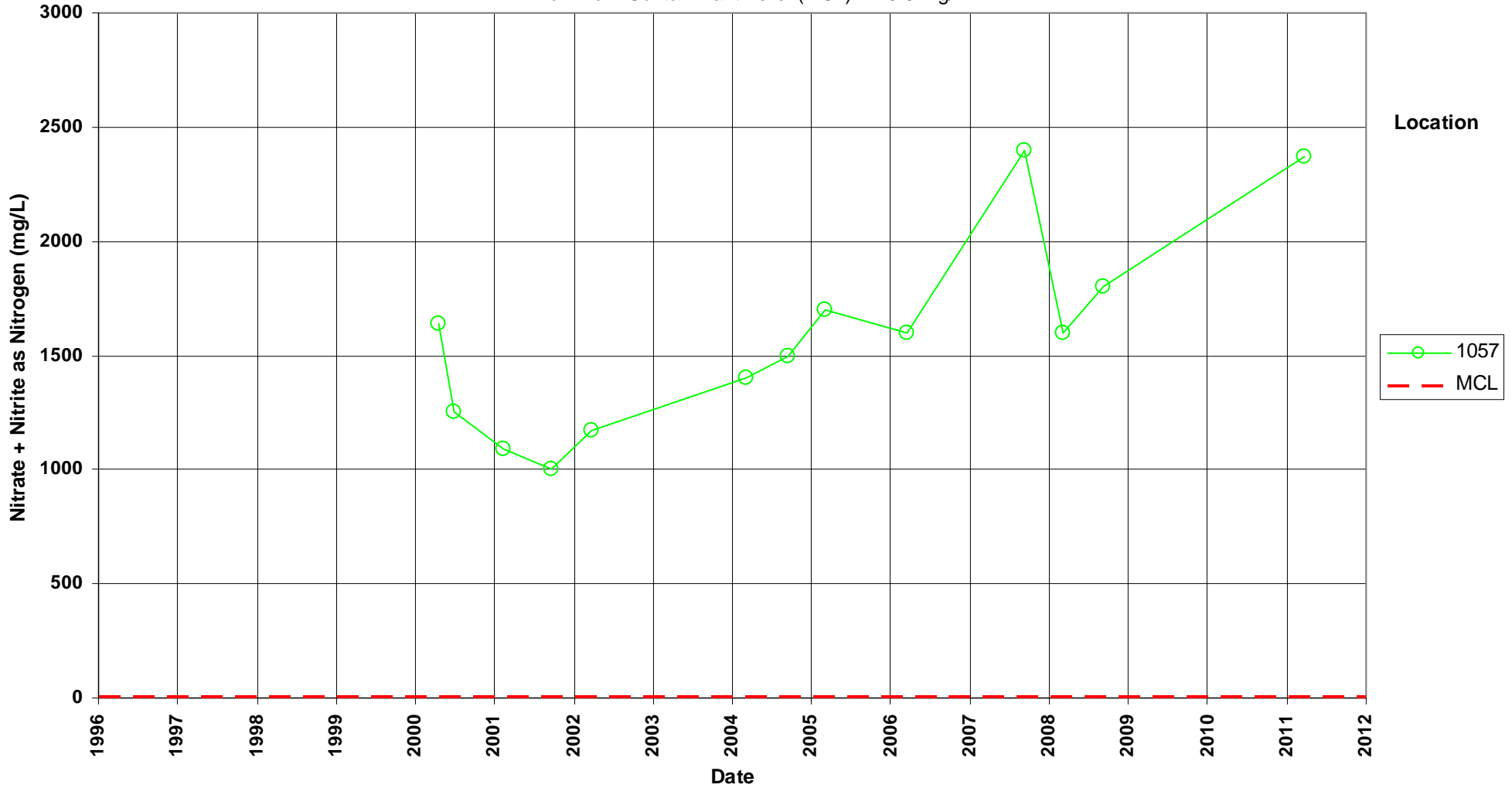
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



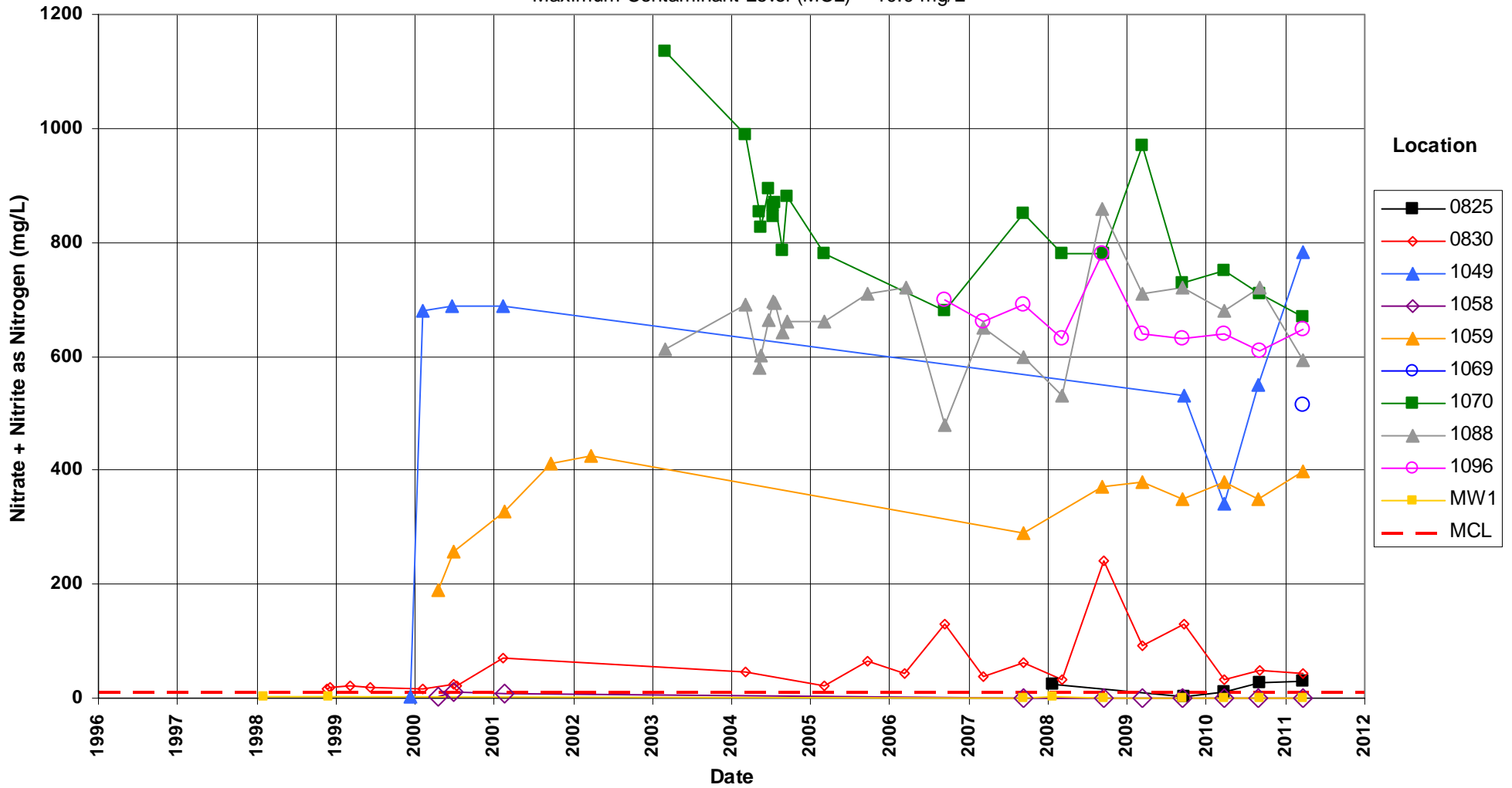
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



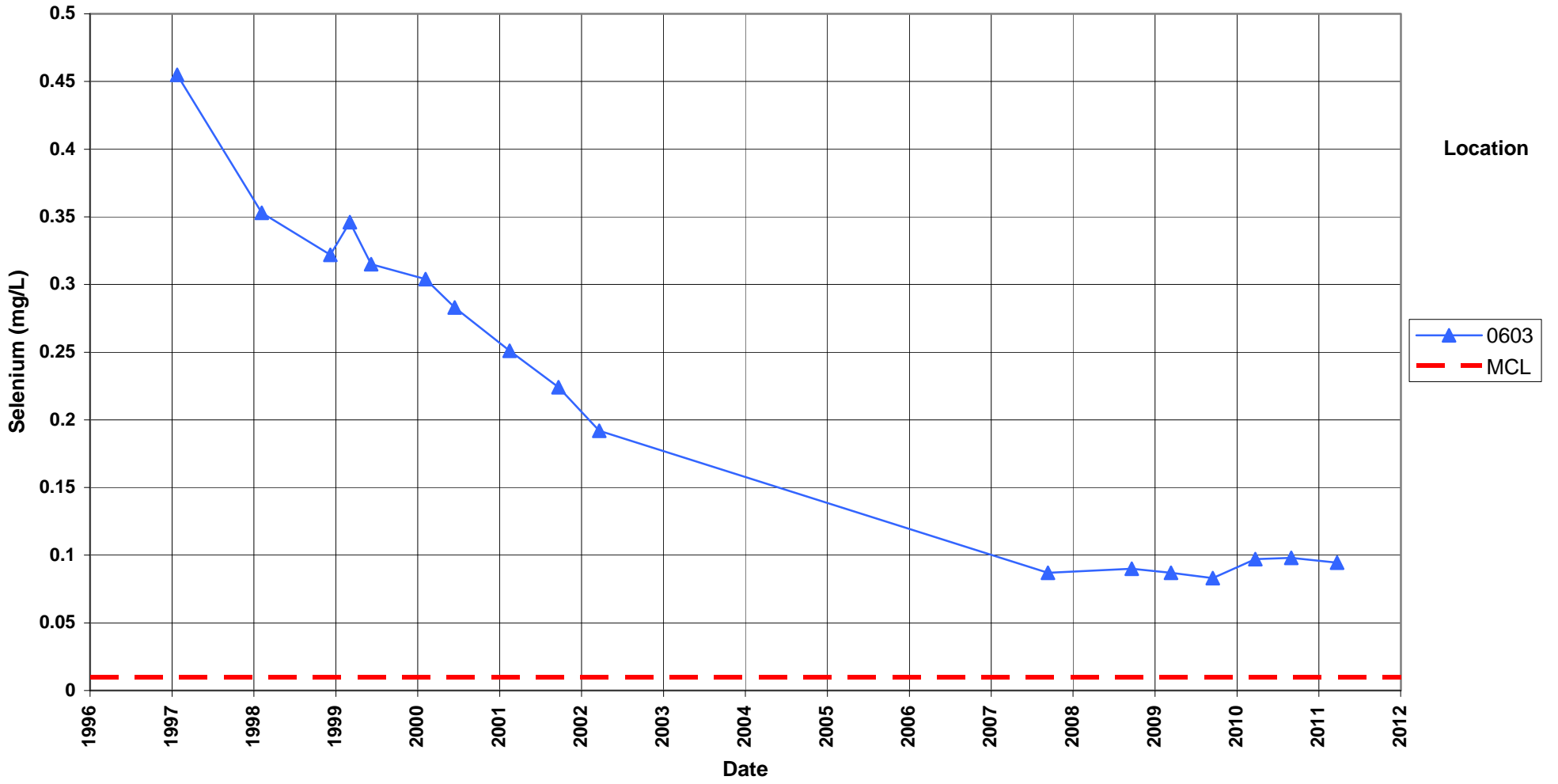
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
Maximum Contaminant Level (MCL) = 10.0 mg/L



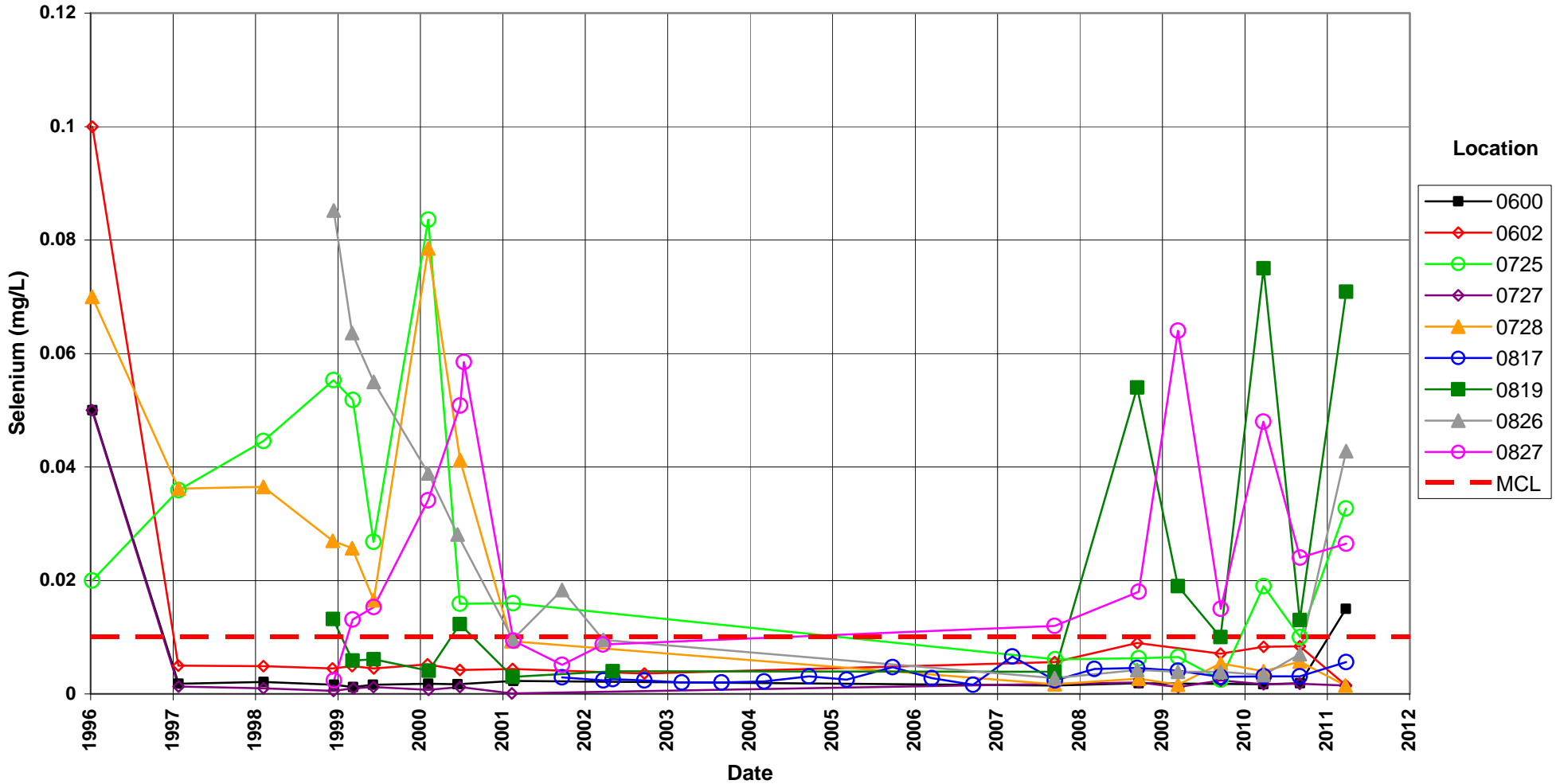
Shiprock Disposal Site (Terrace)
Nitrate + Nitrite as Nitrogen Concentration
 Maximum Contaminant Level (MCL) = 10.0 mg/L



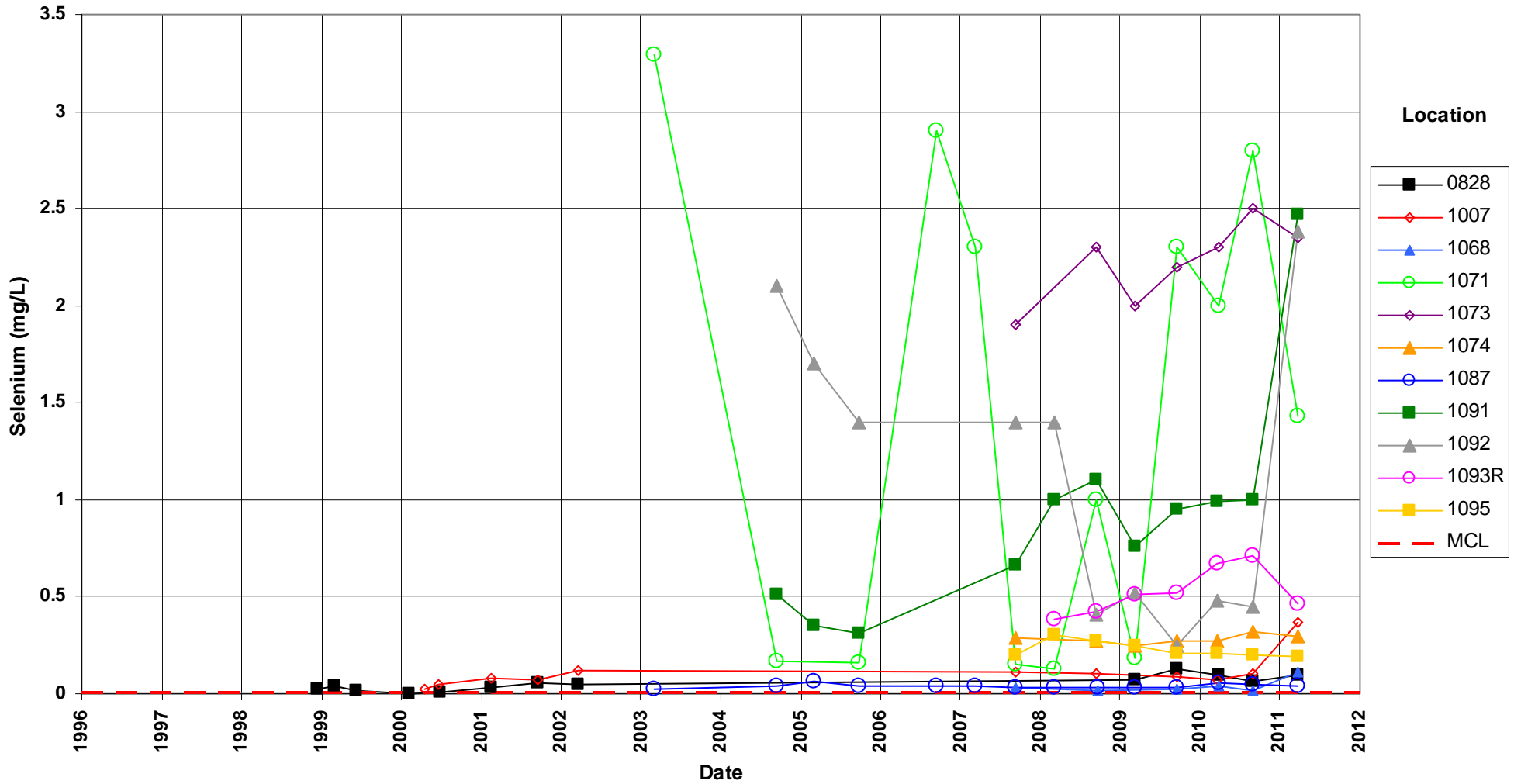
Shiprock Disposal Site (Terrace)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



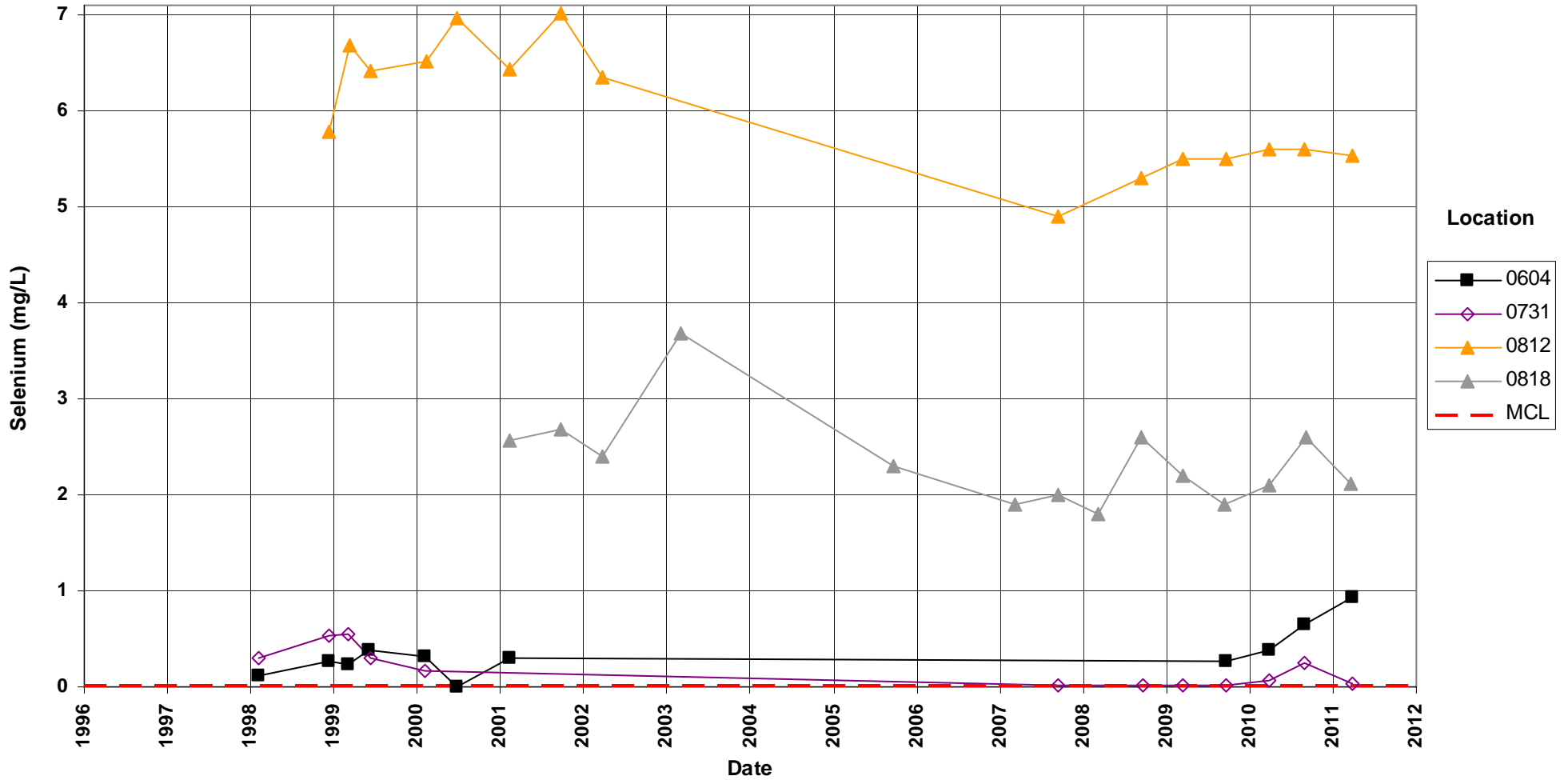
Shiprock Disposal Site (Terrace)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



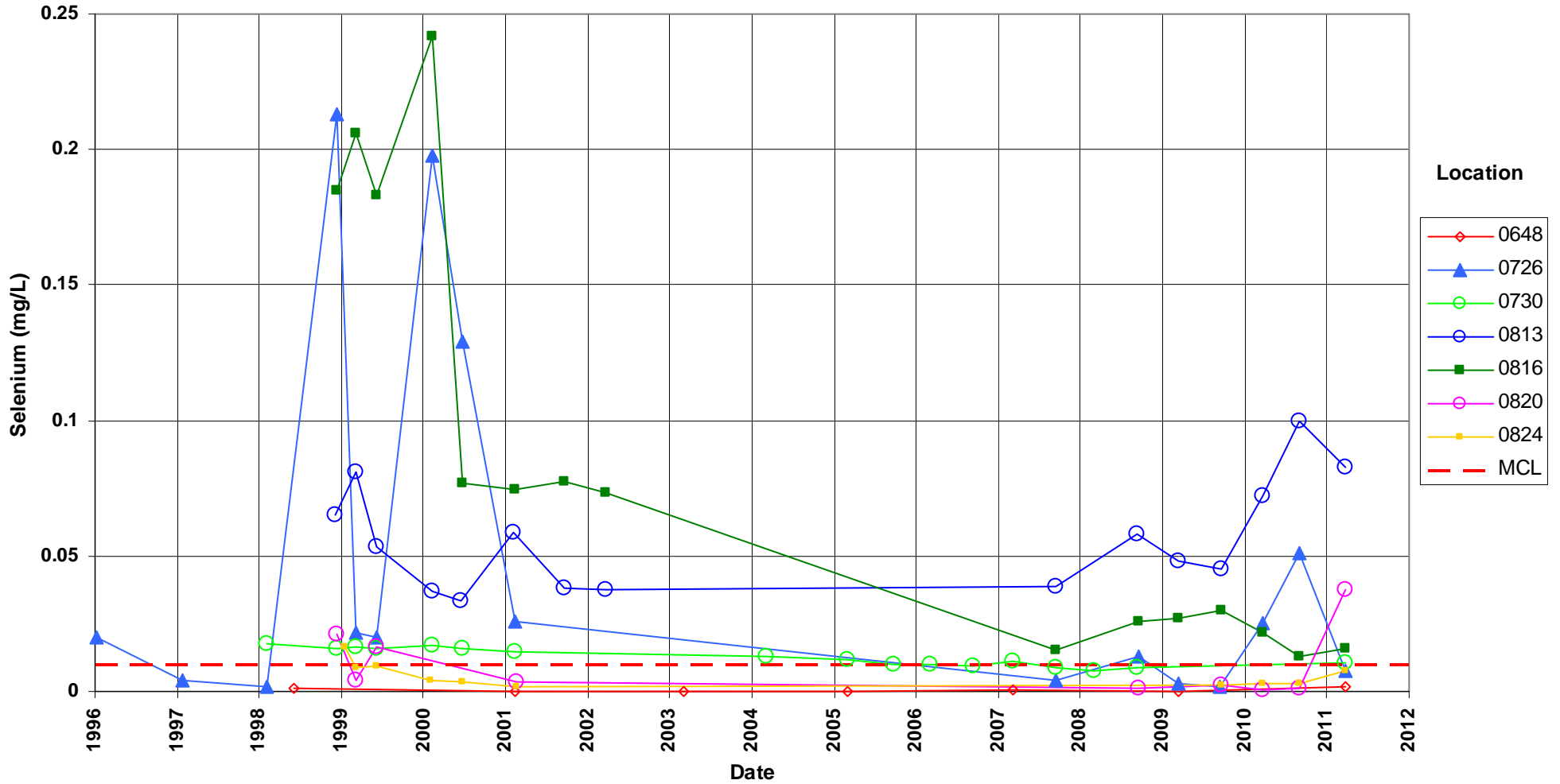
Shiprock Disposal Site (Terrace)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



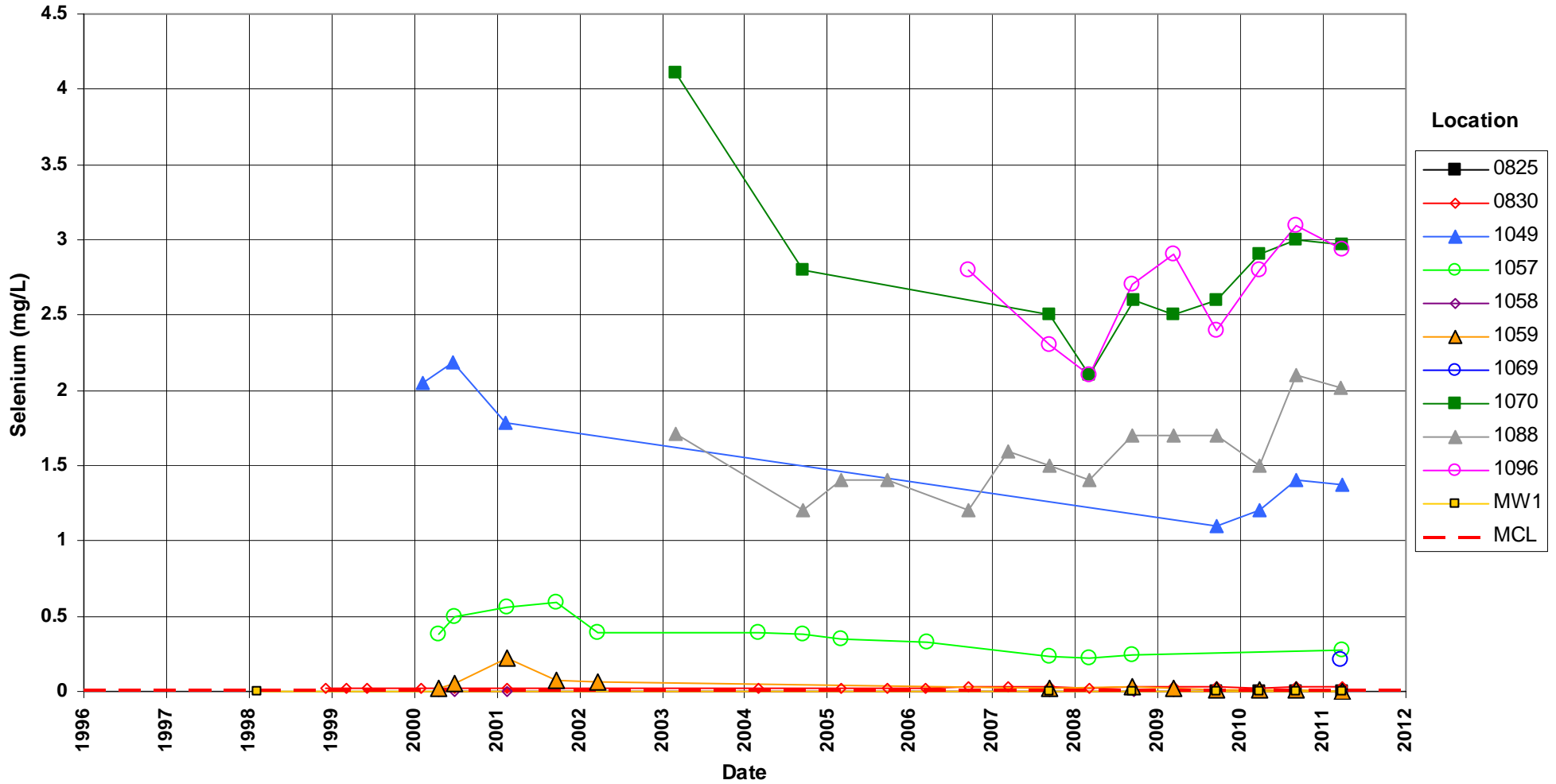
Shiprock Disposal Site (Terrace)
Selenium Concentration
Maximum Contaminant Level (MCL) = 0.01 mg/L



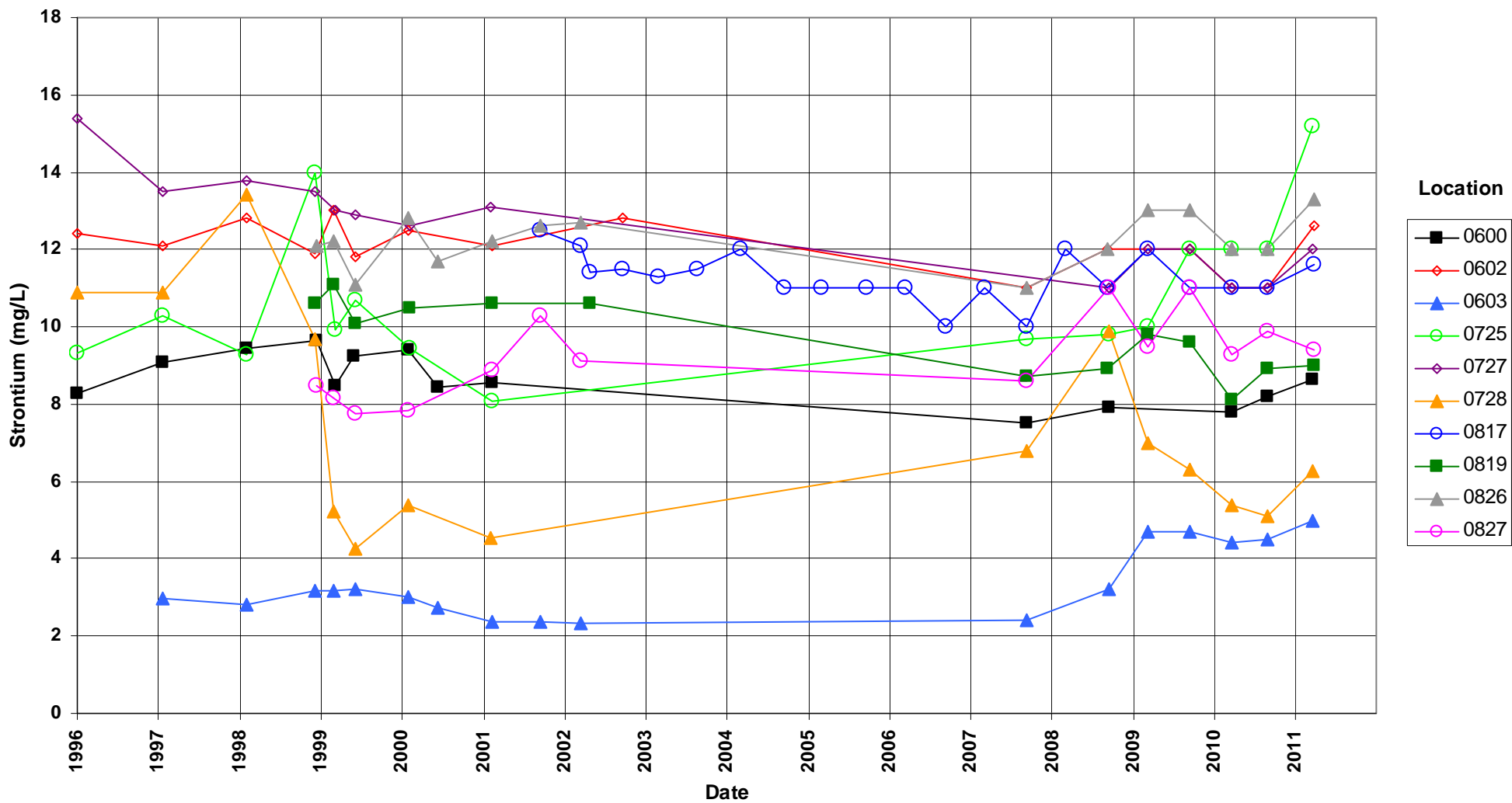
Shiprock Disposal Site (Terrace)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



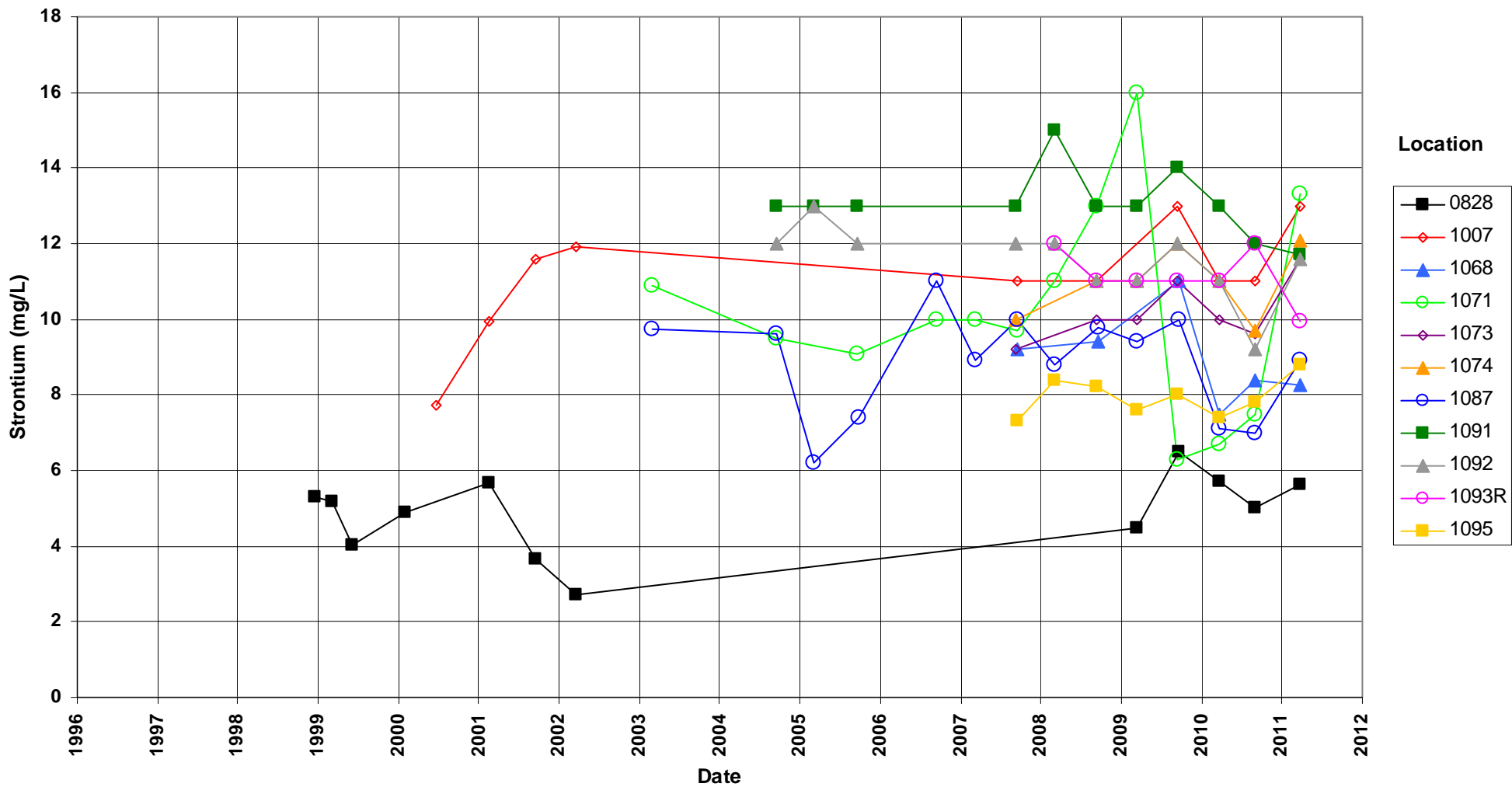
Shiprock Disposal Site (Terrace)
Selenium Concentration
 Maximum Contaminant Level (MCL) = 0.01 mg/L



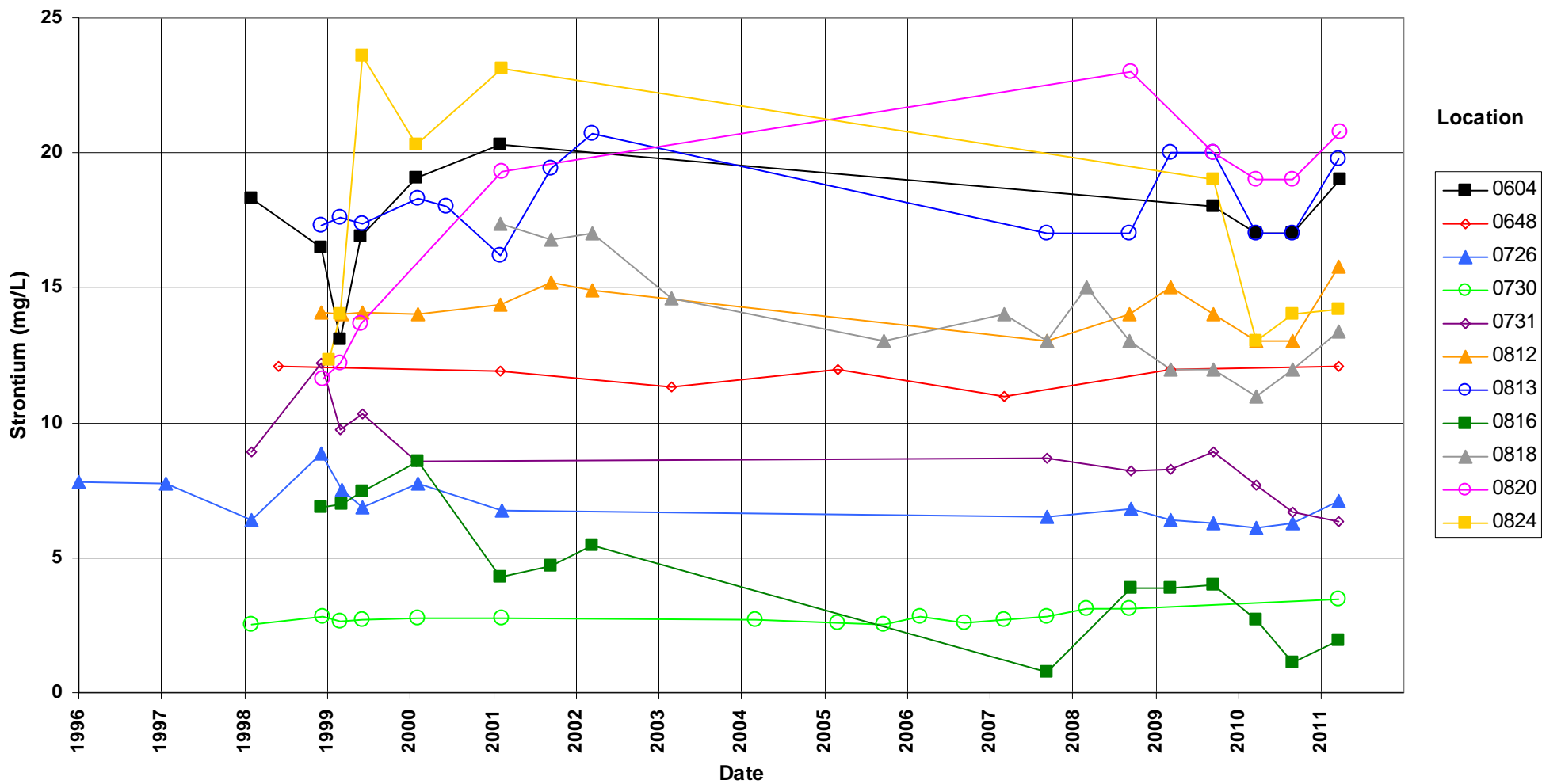
Shiprock Disposal Site (Terrace) Strontium Concentration



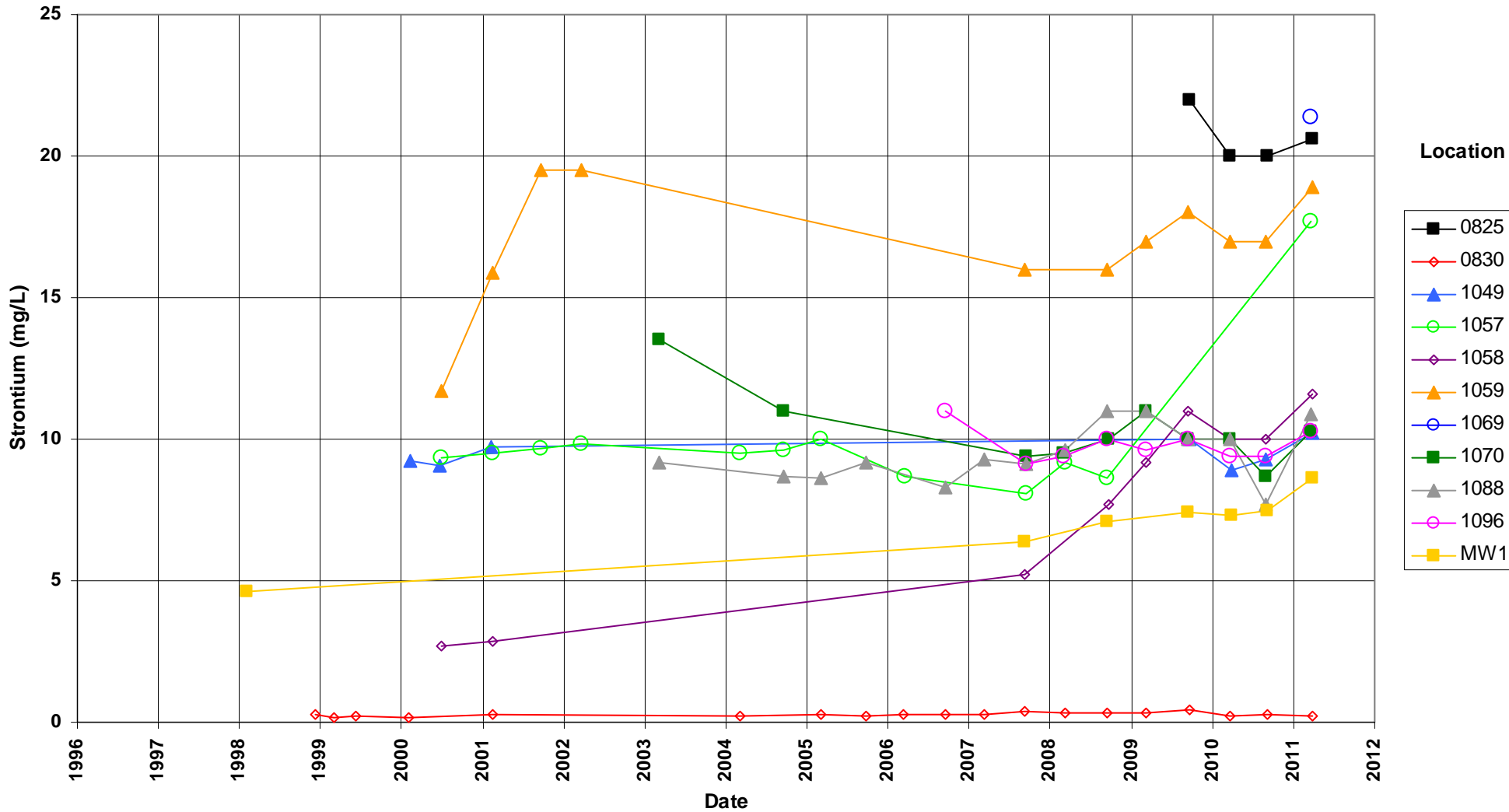
Shiprock Disposal Site (Terrace) Strontium Concentration



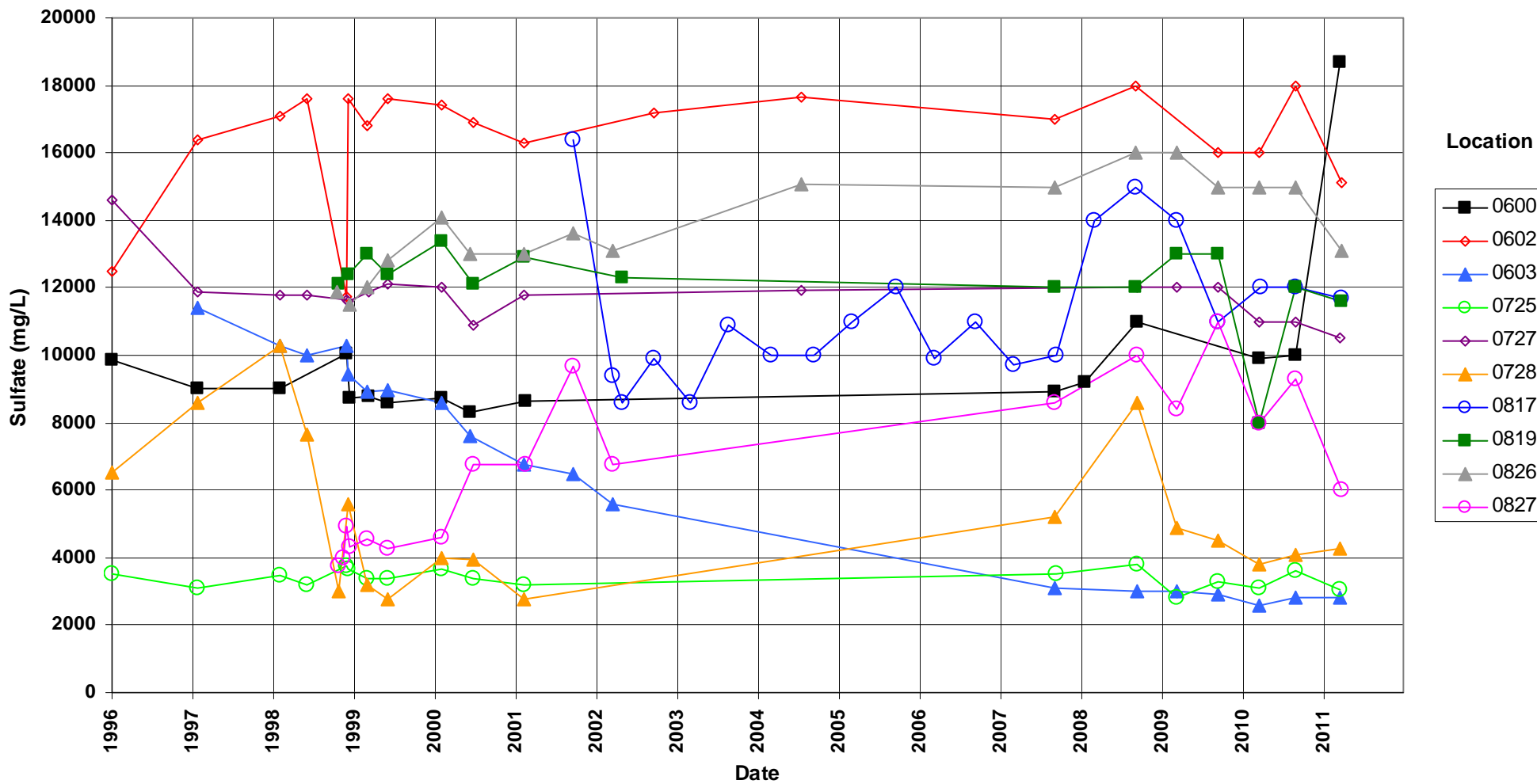
Shiprock Disposal Site (Terrace) Strontium Concentration



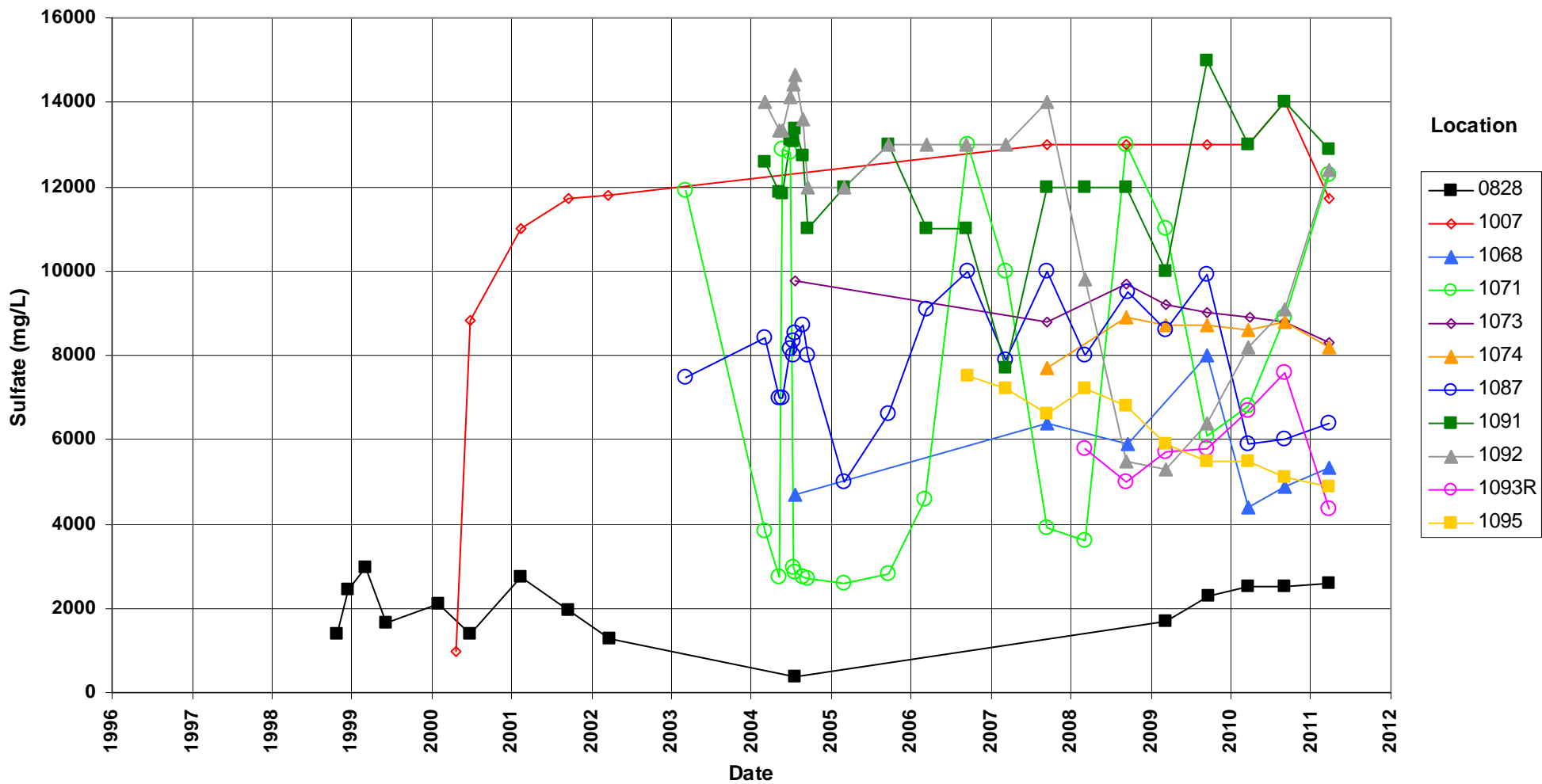
Shiprock Disposal Site (Terrace) Strontium Concentration



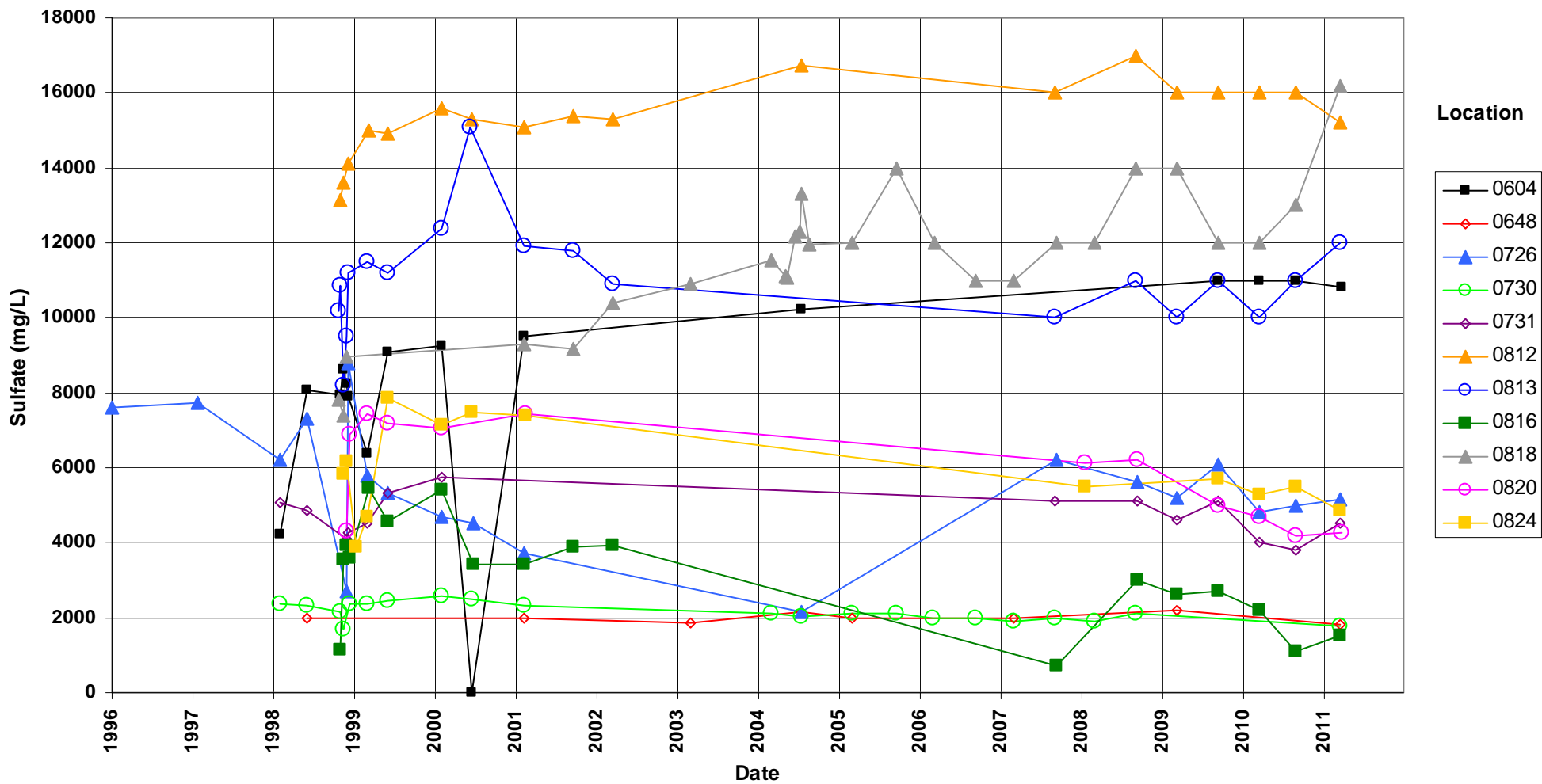
Shiprock Disposal Site (Terrace) Sulfate Concentration



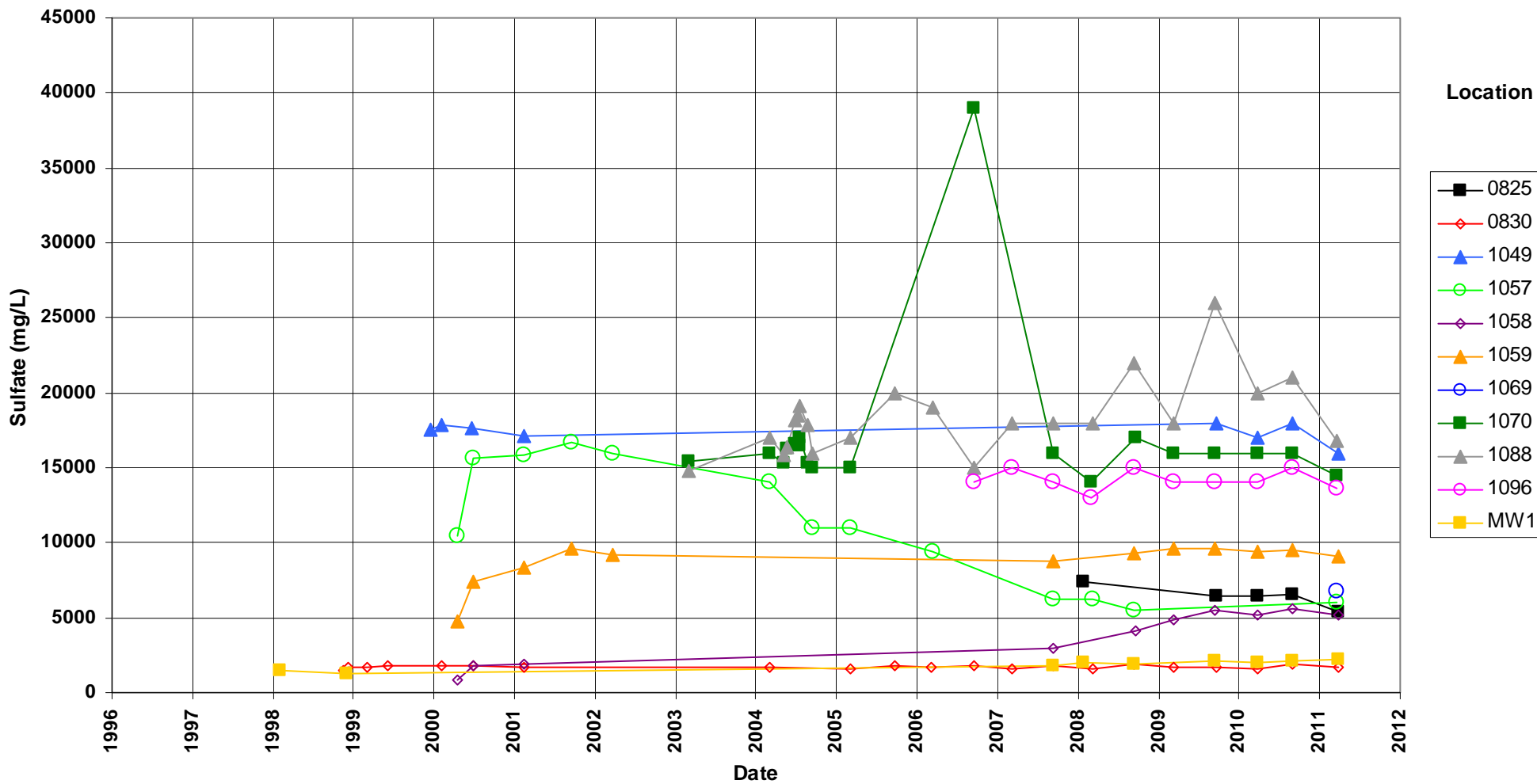
Shiprock Disposal Site (Terrace) Sulfate Concentration



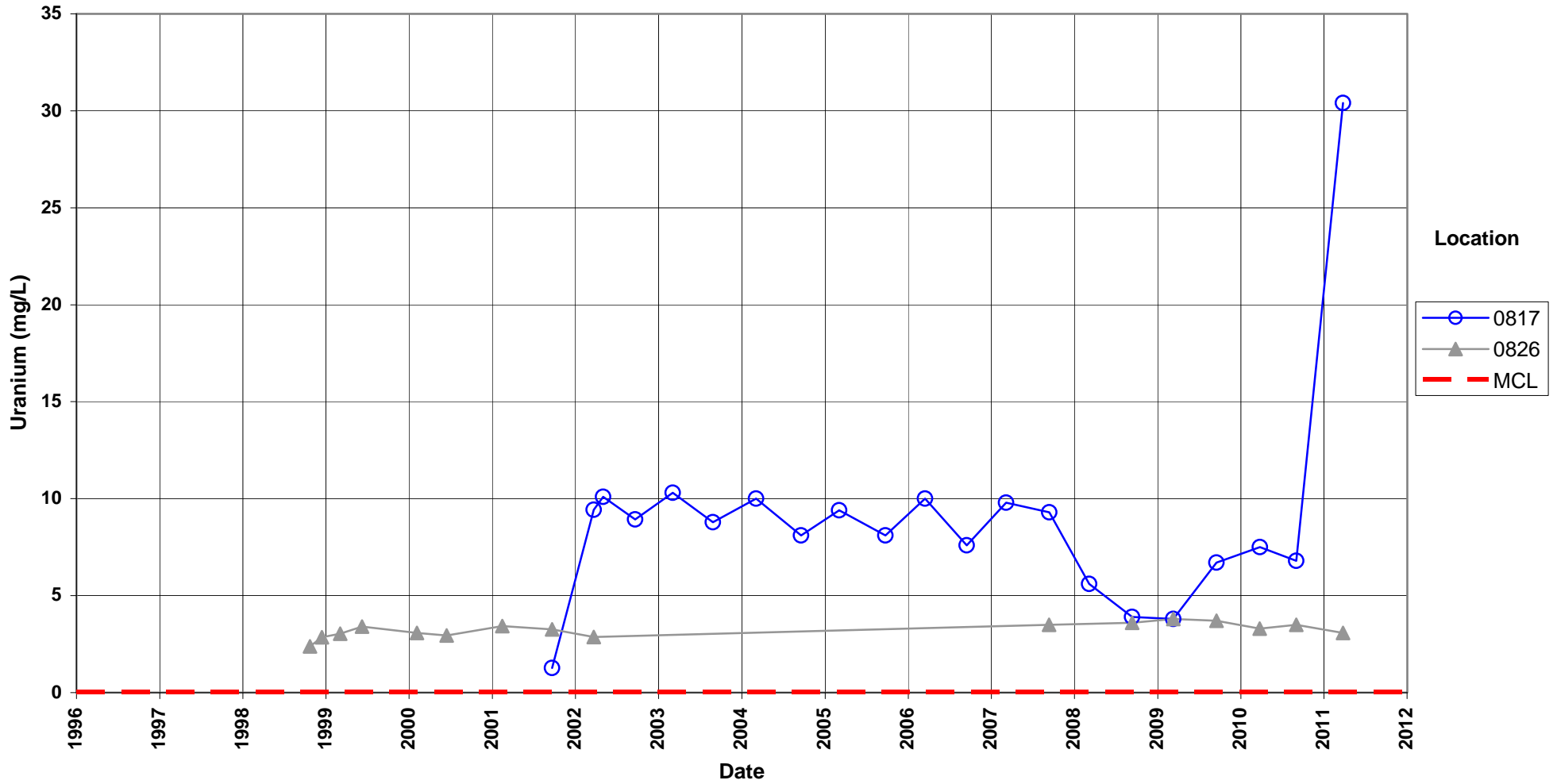
Shiprock Disposal Site (Terrace) Sulfate Concentration



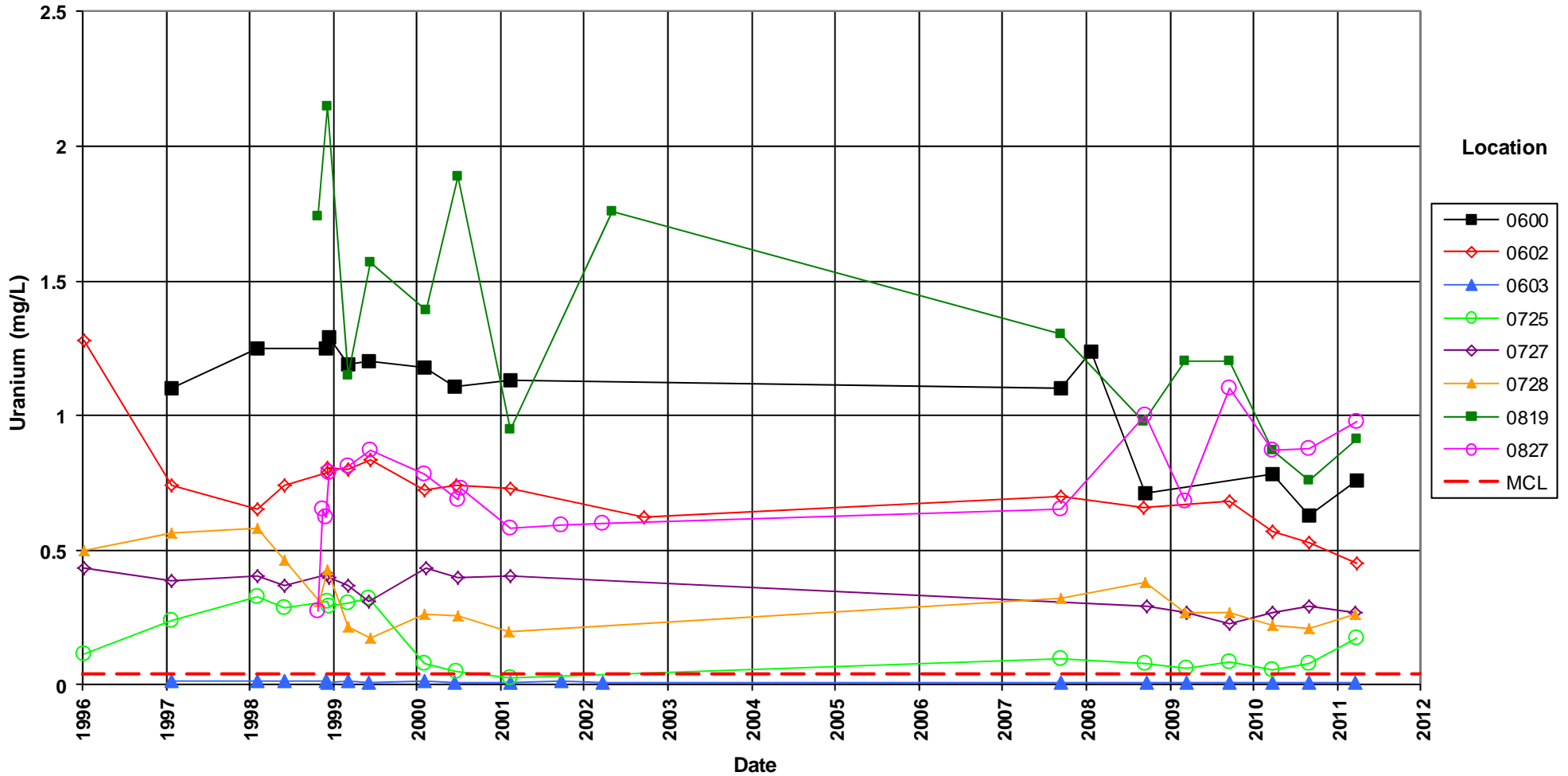
Shiprock Disposal Site (Terrace) Sulfate Concentration



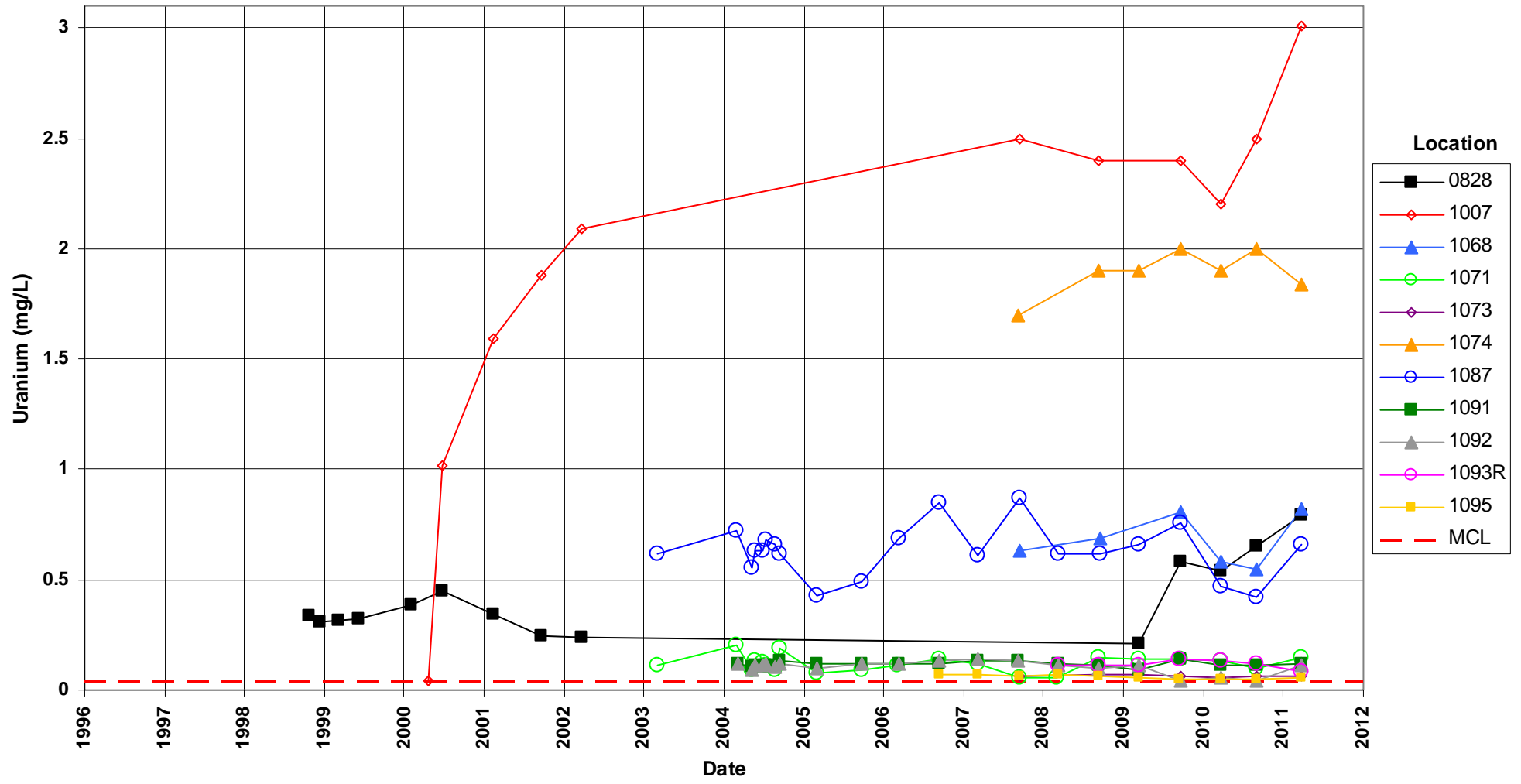
Shiprock Disposal Site (Terrace)
Uranium Concentration
Maximum Contaminant Level (MCL) = 0.044 mg/L



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

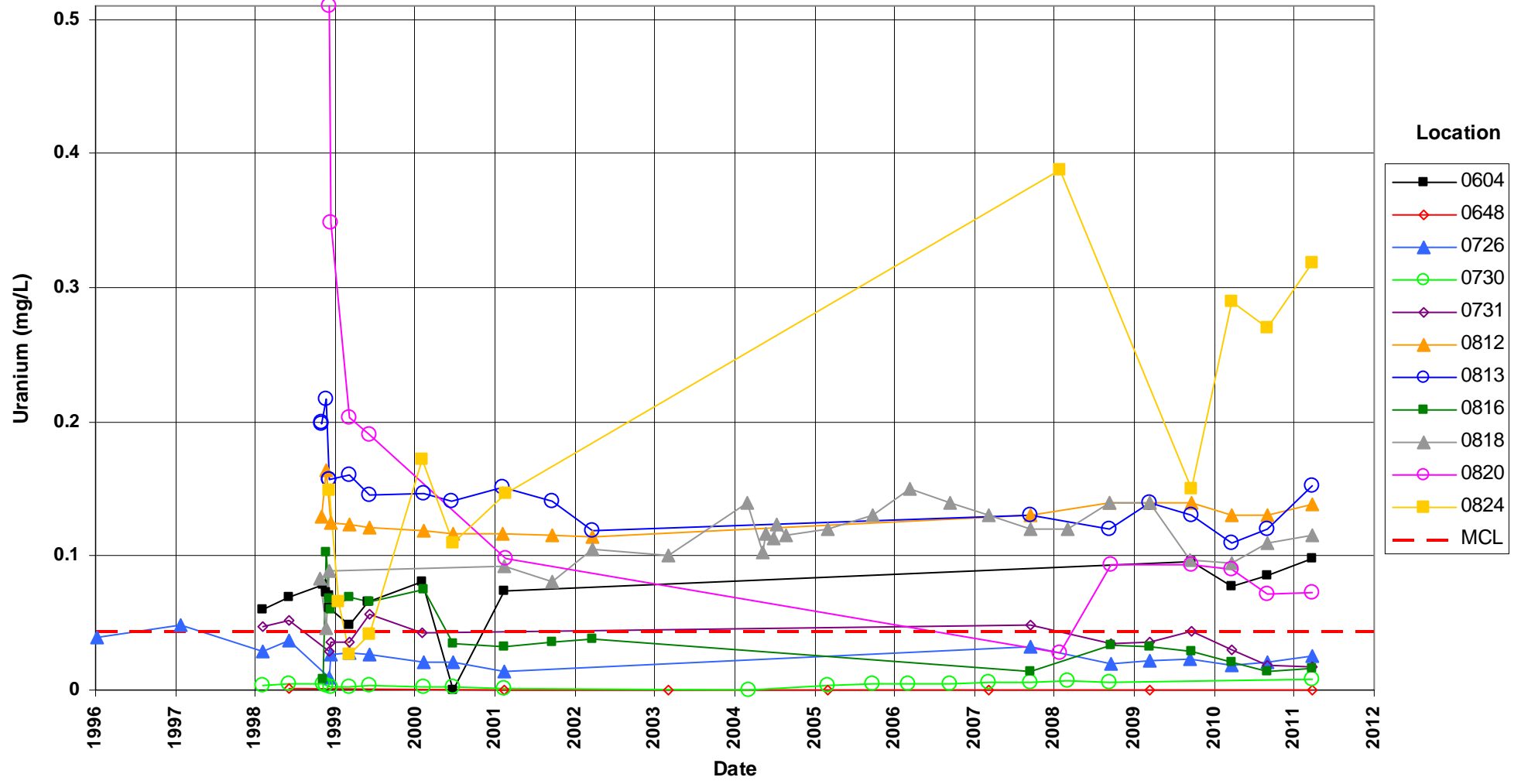


Shiprock Disposal Site (Terrace)
Uranium Concentration
 Maximum Contaminant Level (MCL) = 0.044 mg/L

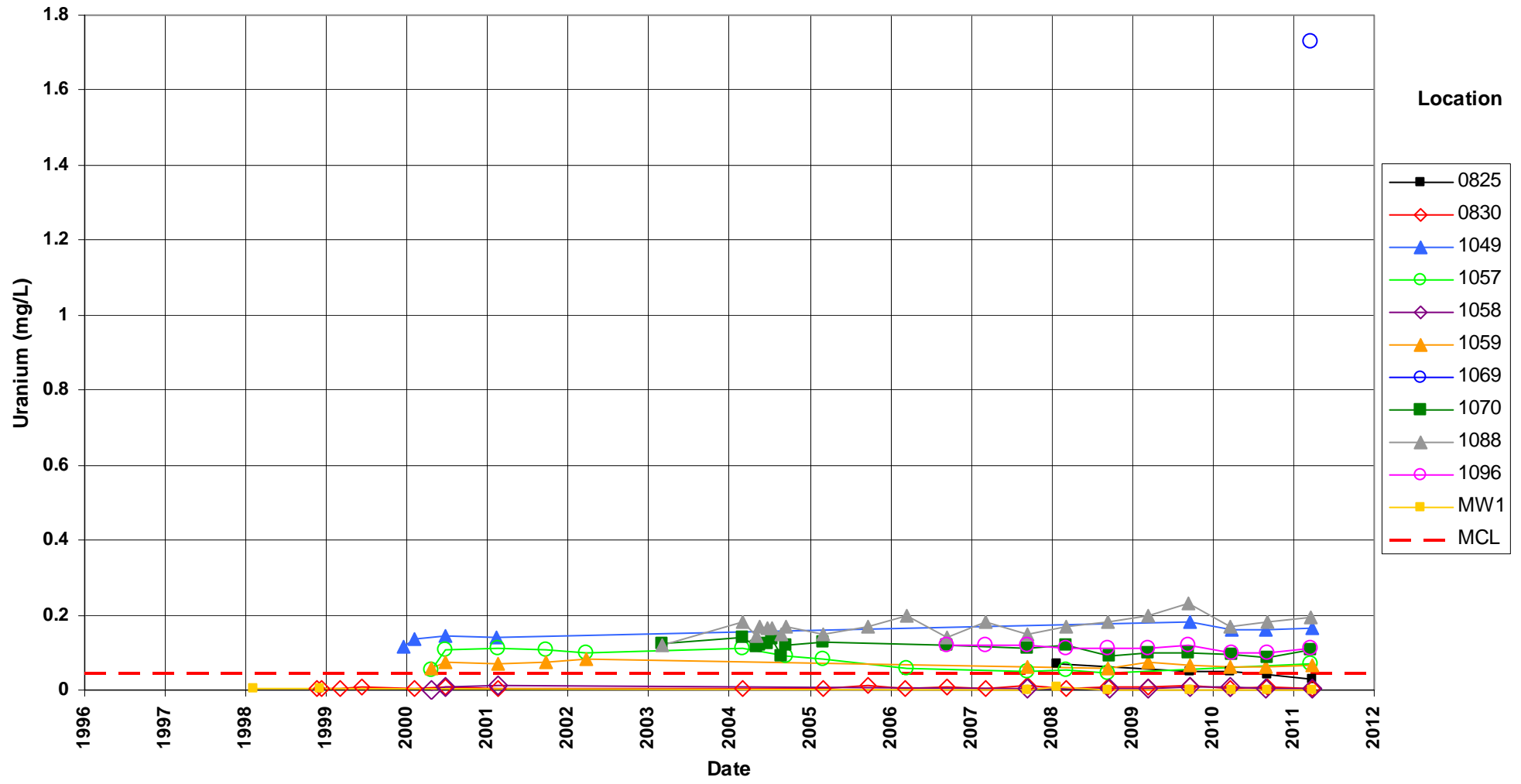


Shiprock Disposal Site (Terrace) Uranium Concentration

Maximum Contaminant Level (MCL) = 0.044 mg/L



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



Attachment 3
Sampling and Analysis Work Order

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established 1959

Task Order LM00-501
Control Number 11-0388

February 24, 2011

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

SUBJECT: Contract No. DE-AM01-07LM00060, S.M. Stoller Corporation (Stoller)
March 2011 Environmental Sampling at Shiprock, New Mexico

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

Dear Dr. Gil:

The purpose of this letter is to inform you of the upcoming sampling event at Shiprock, NM. Enclosed are the map and tables specifying sample locations and analytes for monitoring at the Shiprock Disposal Site. Water quality data will be collected at this site as part of the environmental sampling currently scheduled to begin the week of March 21, 2011.

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.

FLOODPLAIN

608 Km	623 AI	773 AI	850 AI	1010 AI	1112 AI	1135 AI
609 AI	625 AI	775 AI	853 AI	1075 AI	1113 AI	1136 AI
610 AI	626 AI	779 AI	854 AI	1077 AI	1114 AI	1137 AI
611 AI/Km	628 AI	782R AI	855 AI	1089 AI	1115 AI	1138 AI
612 AI	630 AI	783R AI	856 AI	1104 AI	1117 AI	1139 AI
614 AI	734 AI	792 AI	857 AI	1105 AI	1125 AI	1140 AI
615 AI	735 AI	793 AI	858 AI	1109 Nr	1128 AI	1141 AI
618 AI	736 AI	797 AI	1008 AI	1110 Nr	1132 AI	1142 AI
619 AI	766 AI	798 AI	1009 AI	1111 AI	1134 AI	1143 AI
622 AI	768 AI					

The S.M. Stoller Corporation 2597 B3/4 Road Grand Junction, CO 81503 (970) 248-6000 Fax (970) 248-6040

Dr. April Gil
Control Number 11-0388
Page 2

TERRACE

600 Km	812 Al/Km	823 Km	835 Al	1002 Km	1060 Al	1088 Nr
602 Km	813 Al/Km	824 Km	836 Al	1003 Km	1068 Al	1091 Al
603 Al/Km	814 Al/Km	825 Km	837 Al	1004 Km	1069 Al/Km	1092 Al
604 Km	815 Al/Km	826 Al/Km	838 Al	1007 Al/Km	1070 Al/Km	1093R Al
648 Ju	816 Al/Km	827 Al/Km	839 Al	1011 Al/Km	1071 Al/Km	1095 Al
725 Al/Km	817 Km	828 Al/Km	841 Al	1048 Al/Km	1073 Al/Km	1096 Al
726 Km	818 Al	829 Km	843 Al	1049 Al/Km	1074 Al/Km	1120 Al
727 Km	819 Km	830 Km	844 Al/Km	1057 Al/Km	1078 Al/Km	1122 Al
728 Al/Km	820 Km	832 Al	846 Al	1058 Km	1079 Al	DM7 Km
730 Al	821 Km	833 Al	848 Al/Km	1059 Km	1087 Nr	MW1 Km
731 Al/Km	822 Km					

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

Surface Locations

SHP01

501	897	937	939	956	965	1203
655	898	938	940	959	1118	1205
887	899					

SHP02

662	885	934	942	958	1218	1220
786	889	936	949	1215	1219	1221
884	933					

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

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

Sincerely,



David Miller
Site Lead

DM/lcg/lb

Enclosures (3)

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

The S.M. Stoller Corporation 2597 B3/4 Road Grand Junction, CO 81503 (970) 248-6000 Fax (970) 248-6040

Constituent Sampling Breakdown

Site	Shiprock		Required Detection Limit (mg/L)	Analytical Method	Line Item Code
	Groundwater	Surface Water			
Analyte					
Approx. No. Samples/yr	244	56			
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					
Alkalinity-total	Selected locations		10	SM2320 B	WCH-A-002
Ammonia as N (NH3-N)	X	X	0.1	EPA 350.1	WCH-A-005
Calcium	X	X	5	SW-846 6010	LMM-01
Chloride	X	X	0.5	SW-846 9056	MIS-A-039
Chromium					
Dissolved Organic Carbon	Selected locations		1	SM5310 B, C, D	WCH-A-024
Iron	Selected locations		0.1	SW-846 6010	LMM-01
Lead					
Magnesium	X	X	5	SW-846 6010	LMM-01
Manganese	X	X	0.005	SW-846 6010	LMM-01
Molybdenum					
Nickel					
Nitrate + Nitrite as N (NO3+NO2)-N	X	X	0.05	EPA 353.1	WCH-A-022
Potassium	X	X	1	SW-846 6010	LMM-01
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
Total Organic Carbon	Selected locations		1	SM5310 B, C, D	WCH-A-025
Uranium	X	X	0.0001	SW-846 6020	LMM-02
Vanadium					
Zinc					
Total No. of Analytes	16	12			

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

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Attachment 4

Trip Report

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Memorandum

DATE: April 5, 2011
TO: David Miller
FROM: Gretchen Baer
SUBJECT: Sampling Trip Report

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

Dates of Sampling Event: March 21–25, 2011

Team Members: Sam Campbell, David Miller, Gretchen Baer, Sarah Morris, Heidi Frasure, and Jason Kaufman

Number of Locations Sampled: Samples were collected from 134 of the 169 locations identified on the sampling notification letter as follows:

	Locations That Were Sampled	Planned Locations
SHP01 monitoring wells	59	65
SHP02 monitoring wells	56	72
SHP01 surface locations	11	16
SHP02 surface locations	8	16

Locations Not Sampled/Reason: A total of 35 locations were not sampled for the following reasons:

- 13 surface water locations (SHP01 locations 0887, 0937, 0938, 0939, and 0959 and SHP02 locations 0786, 0884, 0885, 0933, 0934, 0936, 0942, and 0958) were dry.
- 13 wells (SHP02 locations 0821, 0823, 0829, 0832, 0846, 1002, 1003, 1004, 1011, 1060, 1120, 1122, and DM7) were dry or had insufficient water to sample with a bailer.
- 6 SHP01 wells (0609, 0858, 1010, 1075, 1077, and 1125) were not sampled because they were listed on the sampling notification letter inadvertently. Other nearby wells were sampled in lieu of these wells.
- SHP02 well 0822 could not be sampled with a bailer.
- SHP02 well 0839 has been destroyed.
- SHP02 well 1048 was inaccessible.

Location Specific Information:

Location IDs	Site	Comments
0501, 0897, 0898, 0899, 0940, 0956, 0965, 1203, 1205	SHP01	Filtered and unfiltered samples were collected at these locations on the San Juan River.
1089, 1104, 1109, 1110, 1118	SHP01	Extraction well pump was shut off. Sampled from sump per site lead instruction. The vault at 1118 was flooded approximately half way to the top.
0648	SHP02	This is a flowing well.
0730	SHP02	Water level was below the top of the pump during purge.
0730, 0830	SHP02	pH < 4.
0814	SHP02	Limited volume for all analytes. Bottles filled to ~80%.
0822	SHP02	Can't get a bailer down the casing. Needs small dia. bladder pump.
1048	SHP02	Well was buried.
1078	SHP02	The sample valve is broken and needs repair.
1088	SHP02	Extraction well with very high turbidity. Possible problem in the line.
1091, 1092	SHP02	Extraction well check valve broken. Pump was turned off after sampling. Repair will be scheduled.
1220	SHP02	Surface water diluted by high flow in the wash.

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

False ID	Site	True ID	Ticket Number	Sample Type	Associated Matrix
2126	SHP01	Associated with samples collected with non-dedicated equipment: <ul style="list-style-type: none"> • SHP01: 0501, 0899, 1089, 1104, 1109, 1110, 1203, 1205 • SHP02: 0812, 0814, 1073, 1215 	JEU 252	Equipment Blank	Water
2604	SHP01	0735	JET 788	Duplicate	Groundwater
2729	SHP01	1115	JET 803	Duplicate	Groundwater
2731	SHP01	1114	JET 838	Duplicate	Groundwater
2899	SHP01	0608	JET 853	Duplicate	Groundwater
2810	SHP02	0835	JET 912	Duplicate	Groundwater
2811	SHP02	0813	JET 913	Duplicate	Groundwater
2812	SHP02	0725	JET 921	Duplicate	Groundwater

Requisition Identification Number (RIN) Assigned: Samples were assigned to RIN 11033665 (SHP01-Floodplain) and 11033666 (SHP02-Terrace). Field data sheets can be found in \\Condor\sms\11033665 and \\Condor\sms\11033666 in the FieldData folders.

Sample Shipment: Samples were shipped from Grand Junction to GEL Laboratories, Charleston, South Carolina, on March 28, 2011.

Well Inspection Summary: SHP02 well 0839 has been destroyed. SHP02 well 1048 was buried.

Equipment: Multi-gas meters were used to verify the air quality in the vaults. Wells were sampled with a peristaltic pump and dedicated tubing, a bailer (dedicated or non-dedicated), or a dedicated pump. Surface waters were sampled using a peristaltic pump and tubing reel, or by

Dave Miller
April 5, 2011
Page 3

container immersion. An equipment blank was collected after decontamination of non-dedicated equipment. The Field Data Collection System and the Water Level Recorder program were used to collect data.

Water Level Measurements: Water levels were measured in all sampled wells and in 10 additional wells. A water level data report for these 10 wells (SHP01_3292011.pdf) can be found in \\Condor\sms\FDCS\WATER LEVELS.

Field Variance: Turbidity requirements could not be met for Category I wells at SHP01-1113 and 1135. These samples were filtered. At the Category I well SHP02-0730, the water level was below the top of the pump during the purge and could not be measured; therefore, water level stability could not be documented. At locations SHP01-0850 and SHP02-0662, 0889, 1057, 1078, 1093R, 1095, 1215, 1218, 1219, 1220, and 1221, the turbidity was >10 NTUs, but the samples inadvertently were not filtered.

Institutional Controls:

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

Signs: Good.

Trespassing/Site Disturbances: N/A

Site Issues: On Monday and Thursday (March 21 and 24, 2011) strong winds and blowing sand and dust were present during sampling.

Disposal Cell/Drainage Structure Integrity: No issues observed.

Vegetation/Noxious Weed Concerns: Access to some well and surface water locations on the floodplain is becoming hindered by vegetation.

Maintenance Requirements:

- See the section "Location Specific Information/Field Variance," above. Some extraction well locations need repairs.
- Some well locations need to be re-developed, most notably SHP01: 0850, 0854, 1113, & 1135.
- SHP02-0822 needs a bladder pump installed.
- A fence in Bob Lee Wash needs to be repaired.

Safety Issues: None.

Corrective Action Required/Taken: None.

(GB/lcg)

cc: (electronic)
April Gil, DOE
David Miller, Stoller
Steve Donovan, Stoller
EDD Delivery

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