DOE–LM/1512–2007

Data Validation Package

May 2007
Ground Water and Surface Water Sampling at the Durango, Colorado, Disposal and Processing Sites

August 2007

U.S. Department of Energy
Office of Legacy Management

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for the U.S. Department of Energy Office of Legacy Management.
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Sampling Event Summary

Site: Durango, Colorado, Disposal and Processing Sites

Sampling Period: May 29-31, 2007

The *Long-Term Surveillance Plan* (LTSP) *for the Bodo Canyon Disposal Site, Durango, Colorado* (September 1996) requires annual monitoring to verify the performance of the disposal cell. Point-of-compliance wells 0607, 0612, 0621, and monitor wells 0605, 0608, 0618, and 0623 were sampled as specified in the plan.

The *Preliminary Final Ground Water Compliance Action Plan for the Durango, Colorado, UMTRA Project Site* (July 2003) requires annual monitoring of ground water and surface water from the mill tailings area to determine progress of the natural flushing process in meeting compliance standards. Ground water and surface water samples were collected at the Raffinate Ponds Area as a best management practice to monitor selenium and uranium concentrations.

Sampling and analysis was conducted as specified in *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (2006). The water level was measured at each sampled well.

For the ground water samples collected at the disposal site, the concentrations of the indicator parameters (molybdenum, selenium, uranium) were below their respective U.S. Environmental Protection Agency (EPA) ground water standard (40 CFR 192) with the following exception. The uranium concentration in well 0618 has been fluctuating since 2004 and is now 0.047 mg/L.

For the ground water samples collected at the processing site, EPA ground water standards for molybdenum and uranium were exceeded in samples collected from monitor wells listed in Table 1 on the following page.

Results from this sampling event are generally consistent with values previously obtained. In reviewing the time-concentration graphs included in this report, it is noted that the uranium concentration at locations 0879 and 0884 decreased where increases were previously observed.

Surface water contaminant concentrations were compared to the values obtained at upgradient locations on the Animas River (0652) and South Creek (0588). The uranium concentration (0.026 mg/L) from location 0588 is an indicator of the quality of water entering the site. The surface water results for most processing site locations show contaminant concentrations near or below the method detection limit and below the respective upgradient values, which indicate that the natural flushing strategy is not adversely affecting the water quality in the Animas River.

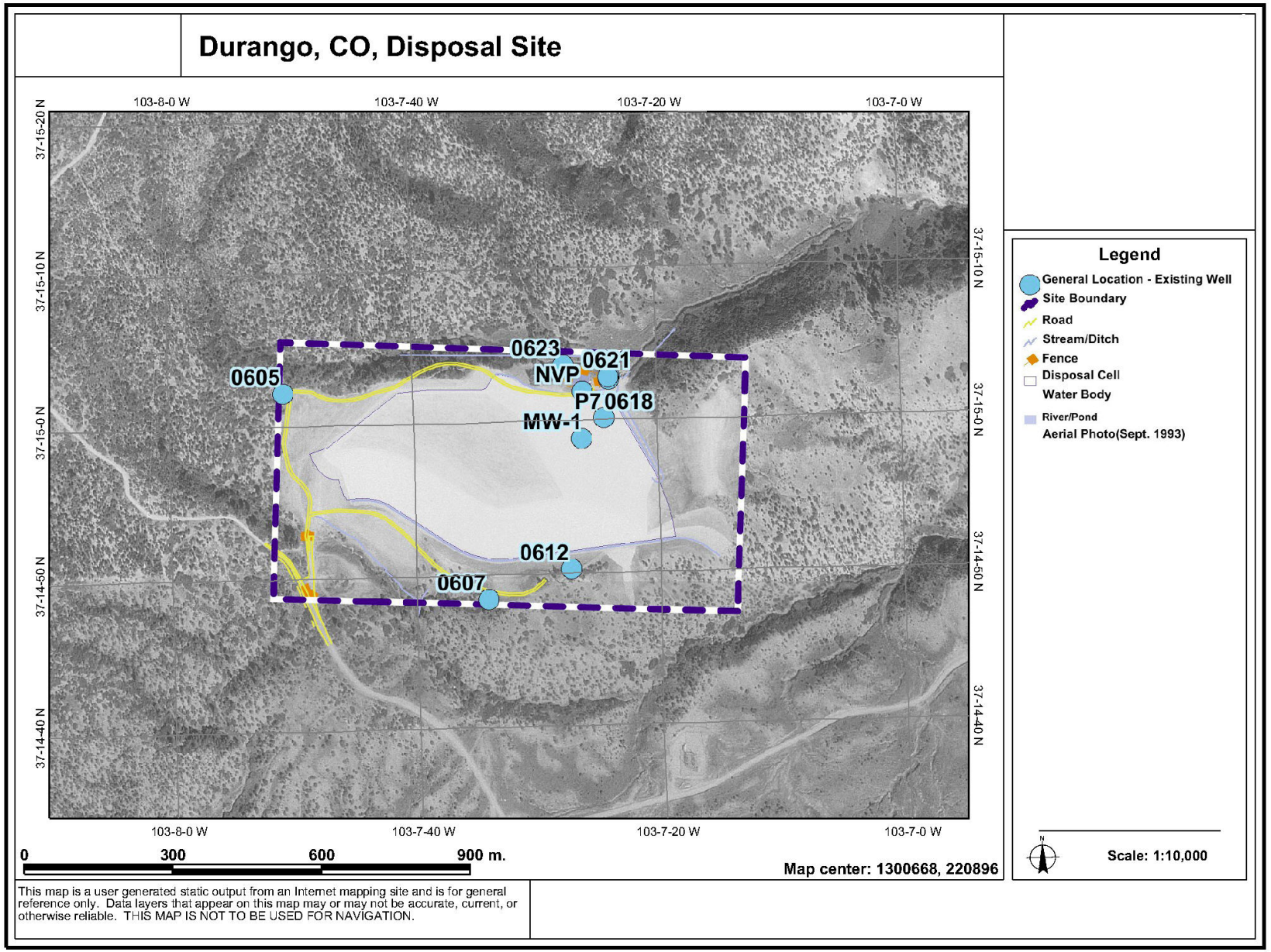
Table 1. Durango Processing Site Wells Exceeding EPA Standards in May 2007

Analyte	Standard[a]	Site Code[b]	Location	Concentration
Cadmium	0.01	DUR01	0612	0.024
Molybdenum	0.1	DUR01	0612	0.110
Selenium	0.01	DUR01	0630	0.019
Selenium	0.01	DUR02	0598	0.760
			0607	0.870
			0879	0.034
			0884	1.1
Uranium	0.044	DUR01	0612	1.6
			0617	0.200
			0630	0.240
			0631	0.120
			0633	1.0
Uranium	0.044	DUR02	0598	0.230
			0618	0.047
			0884	0.100

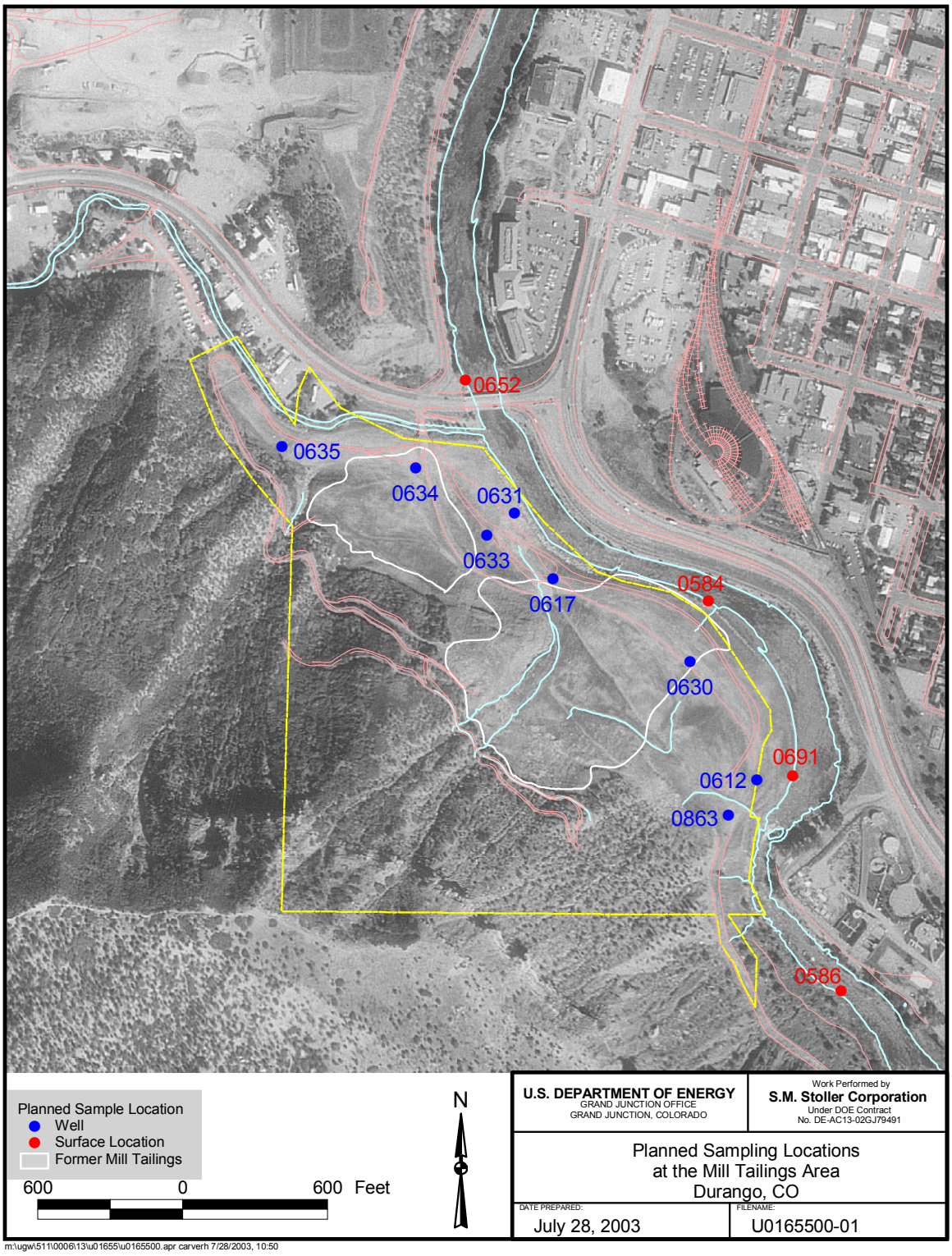
[a] Standards are listed in 40 CFR 192.02 Table 1 to Subpart A; concentrations are in mg/L.
[b] DUR01 = Mill Tailings Area; DUR02 = Raffinate Ponds Area.

David Miller
Site Lead, S.M. Stoller Corporation

10/8/07
Date



Durango Disposal Site Sample Location Map



Durango Processing Site Mill Tailings Area Sample Location Map

Data Assessment Summary

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Water Sampling Field Activities Verification Checklist

Project	Durango, Colorado	**Date(s) of Water Sampling**	May 29-31, 2007
Date(s) of Verification	July 10, 2007	**Name of Verifier**	Steve Donivan

	Response (Yes, No, NA)	Comments
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.		Work Order Letter dated April 30, 2007
2. Were the sampling locations specified in the planning documents sampled?	Yes	
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	Pre-trip calibration was performed on May 29, 2007
4. Was an operational check of the field equipment conducted twice daily?	Yes	One check on May 29, 2007, Two on May 30, 2007 and May 31, 2007
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	NA	

Water Sampling Field Activities Verification Checklist (continued)

	Response (Yes, No, NA)	Comments
8. Were the following conditions met when purging a Category II well:		
Was the flow rate less than 500 mL/min?	Yes	
Was one pump/tubing volume removed prior to sampling?	Yes	
9. Were duplicates taken at a frequency of one per 20 samples?	Yes	Two duplicate samples were collected
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	Location numbers 2498, 2348, and 2349 were used.
Was the true identity of the samples recorded on the Quality Assurance Sample Log?	Yes	
13. Were samples collected in the containers specified?	Yes	
14. Were samples filtered and preserved as specified?	Yes	
15. Were the number and types of samples collected as specified?	Yes	
16. Were chain of custody records completed and was sample custody maintained?	Yes	
17. Are field data sheets signed and dated by both team members?	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):	07050889
Sample Event:	May 29-31, 2007
Site(s):	Durango, Colorado
Laboratory:	Paragon Analytics
Work Order No.:	0706010
Analysis:	Metals and Inorganics
Validator:	Steve Donivan
Review Date:	July 10, 2007

This validation was performed according to the *Environmental Procedures Catalog* (STO 6), "Standard Practice for Validation of Laboratory Data," GT-9(P) rev1 (2006). The procedure was applied at Level 2, Data Deliverables Verification. See attached Data Validation Worksheets for supporting documentation on the data review and validation. All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 2.

Table 2. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Cadmium, Cd	MET-A-026	SW-846 3005A	SW-846 6020A
Chloride, Cl	MIS-A-039	SW-846 9056	SW-846 9056
Iron, Fe	GJO-16	SW-846 3005A	SW-846 6010B
Manganese, Mn	GJO-17	SW-846 3005A	SW-846 6010B
Metals, Ca, K, Mg, Na	MET-A-020	SW-846 3005A	SW-846 6010B
Molybdenum, Mo	GJO-15	SW-846 3005A	SW-846 6020A
Selenium, Se	GJO-14	SW-846 3005A	SW-846 6020A
Sulfate, SO_4	MIS-A-044	SW-846 9056	SW-846 9056
Total Dissolve Solids, TDS	WCH-A-033	MCAWW 160.1	MCAWW 160.1
Uranium, U	GJO-01	SW-846 3005A	SW-846 6020A

Data Qualifier Summary

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

Table 3. Data Qualifier Summary

Sample Number	Location	Analyte(s)	Flag	Reason
0706010-1	0584	Molybdenum	U	Less than 5 times the calibration blank
0706010-2	0586	Molybdenum	U	Less than 5 times the calibration blank
0706010-10	0652	Cadmium	U	Less than 5 times the calibration blank
0706010-11	0691	Molybdenum	U	Less than 5 times the calibration blank
0706010-12	0863	Cadmium	U	Less than 5 times the calibration blank
0706010-12	0863	Molybdenum	U	Less than 5 times the calibration blank

Sample Number	Location	Analyte(s)	Flag	Reason
0706010-14	0588	Cadmium	U	Less than 5 times the calibration blank
0706010-18	0654	Cadmium	U	Less than 5 times the calibration blank
0706010-18	0654	Molybdenum	U	Less than 5 times the calibration blank
0706010-18	0654	Selenium	U	Less than 5 times the calibration blank
0706010-19	0656	Cadmium	U	Less than 5 times the calibration blank
0706010-19	0656	Molybdenum	U	Less than 5 times the calibration blank
0706010-19	0656	Selenium	U	Less than 5 times the calibration blank
0706010-22	0605	Uranium	U	Less than 5 times the calibration blank
0706010-23	0607	Selenium	U	Less than 5 times the calibration blank
0706010-23	0607	Uranium	U	Less than 5 times the calibration blank
0706010-24	0608	Molybdenum	U	Less than 5 times the calibration blank
0706010-25	0612	Iron	U	Less than 5 times the calibration blank
0706010-25	0612	Selenium	U	Less than 5 times the calibration blank
0706010-25	0612	Uranium	U	Less than 5 times the calibration blank
0706010-26	0618	Molybdenum	U	Less than 5 times the calibration blank
0706010-27	0621	Molybdenum	U	Less than 5 times the calibration blank
0706010-30	Equipment Blank	Calcium	U	Less than 5 times the calibration blank
0706010-30	Equipment Blank	Manganese	U	Less than 5 times the calibration blank
0706010-30	Equipment Blank	Potassium	U	Less than 5 times the calibration blank
0706010-30	Equipment Blank	Sodium	U	Less than 5 times the calibration blank
0706010-30	Equipment Blank	Uranium	U	Less than 5 times the calibration blank

Sample Shipping/Receiving.

Paragon Analytics in Fort Collins, Colorado, received 30 water samples on June 2, 2007, under air bill number 8527 5847 8973 accompanied by a Chain of Custody (COC) form. The COC form was checked to confirm that all of the samples were listed on the form with sample collection dates and times, and that signatures and dates were present indicating sample relinquishment and receipt. The sample submittal documents including the Chain of Custody Form and the sample tickets had no errors or omissions with the following exceptions. There were no sample tickets received with the samples. Samples 0706010-2 and 0706010-10 had identical sample ticket numbers listed on the COC form. This conflict was resolved using the field logbook.

Preservation and Holding Times

The sample shipment was received cool and intact with temperatures within the iced cooler of 3.0 °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.

Method SW-846 6010B
Calibration for calcium, iron, magnesium, manganese, potassium, and sodium was performed on June 13, 2007, using single point calibrations. Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification (CCV) checks were made at the required frequency resulting in seven CCVs. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the beginning and end of the analytical sequence to verify the linearity of the calibration curve near the practical quantitation limit and all results were within the acceptance range.

Method SW-846 6020A
Calibrations for cadmium, molybdenum and uranium were performed on June 7, 2007 and for selenium on June 13, 2007. The initial calibrations were performed using six calibration standards resulting in calibration curves with correlation coefficient (r^2) values greater than 0.995. The absolute values of the intercept of the calibration curves were less than 3 times the method detection limit (MDL). Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing CCV checks were made at the required frequency resulting in eight CCVs for cadmium, molybdenum, and uranium, and seven CCVs for selenium. All calibration checks met the acceptance criteria. A reporting limit verification check was made at the required frequency to verify the linearity of the calibration curve near the practical quantitation limit. The check results met the acceptance criteria for all analytes with the exception of molybdenum. The mass calibration and resolution was checked at the beginning of each analytical run in accordance with the procedure. Internal standard recoveries were stable and within acceptance ranges.

Method SW-846 9056
Initial calibrations were performed for chloride and sulfate using five calibration standards on June 7, 2007. The calibration curve r^2 values were greater than 0.995 and intercepts less than 3 times the MDL. Initial calibration and calibration check standards were prepared from independent sources. Initial and continuing calibration verification checks were made at the required frequency resulting in six CCVs. All calibration checks met the acceptance criteria.

Method EPA 160.1
There are no calibration requirements associated with the determination of total dissolved solids.

Method and Calibration Blanks

Method blanks are analyzed to assess any contamination that may have occurred during sample preparation. Calibration blanks are analyzed to assess instrument contamination prior to and during sample analysis. All initial and continuing calibration blank results were below the practical quantitation limits. All method blanks, initial and continuing calibration blank results were below the practical quantitation limits for method 6010B and 6020A metals, chloride and sulfate with the exception of CCB1 for molybdenum and CCB7 for uranium. There were no sample results associated with these CCBs. In cases where blank concentration exceeded the instrument detection limit, the associated sample results are qualified with a "U" flag (not

detected) when the sample result is greater than the MDL but less than 5 times the blank concentration.

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

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

Matrix Spike Analysis

Matrix spike and matrix spike duplicate samples (MS/MSD) were analyzed for method 6010B and 6020A metals as a measure of method performance in the sample matrix. The MS/MSD analyses resulted in acceptable recovery and precision for all analytes.

Laboratory Replicate Analysis

The laboratory replicate sample results demonstrate acceptable laboratory precision. The relative percent difference (RPD) values for the laboratory replicate samples and matrix spike duplicate sample results for all analytes were less than 20 percent.

Laboratory Control Sample

Laboratory control samples (LCS) 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 LCS results were acceptable for all analysis categories.

Metals Serial Dilution

Serial dilutions were prepared and analyzed for magnesium, manganese, potassium, sodium, and uranium to monitor chemical or physical interferences in the sample matrix. All of the serial dilution results met the acceptance criteria.

Detection Limits/Dilutions

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

Completeness

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

Chromatography Peak Integration

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

Electronic Data Deliverable (EDD) File

The revised EDD file arrived on June 27, 2007. The Sample Management System EDD validation module was used to verify that the EDD file was complete and in compliance with requirements. The module compares the contents of the file to the requested analyses to ensure all and only the requested data are delivered. The contents of the EDD were manually examined to verify that the sample results accurately reflect the data contained in the sample data package.

SAMPLE MANAGEMENT SYSTEM

EDD Non-Conformance Report

Report Date: 7/9/2007

EDD File: \\condor\sms\07050889\07050889.txt

EDD Errors:

Record	Error Type	Field	Error Description
			NO ERRORS DETECTED

SAMPLE MANAGEMENT SYSTEM

General Data Validation Report

RIN: 07050889 **Lab Code:** PAR **Validator:** Steve Donivan **Validation Date:** 7/9/2007

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

# of Samples: 30 **Matrix:** WATER **Requested Analysis Completed:** Yes

Chain of Custody

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

Sample

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

Select Quality Parameters

☑ Holding Times	All analyses were completed within the applicable holding times.
☑ Detection Limits	The reported detection limits are equal to or below contract requirements.
☑ Field/Trip Blanks	There was 1 trip/equipment blank evaluated.
☑ Field Duplicates	There were 2 duplicates evaluated.

SAMPLE MANAGEMENT SYSTEM

Metals Data Validation Worksheet

RIN: 07050889 **Lab Code:** PAR **Date Due:** 6/30/2007

Matrix: Water **Site Code:** DUR **Date Completed:** 6/28/2007

Analyte	Date Analyzed	CALIBRATION						Method Blank	LCS %R	MS %R	MSD %R	Dup. RPD	ICSAB %R	Serial Dil. %R	CRI %R
		Int.	R^2	ICV	CCV	ICB	CCB								
Cadmium	06/07/2007	0.0000	1.0000	OK	OK	OK	OK			102.0	102.0	0.0	101.0		
Cadmium	06/07/2007									102.0	101.0	1.0			86.0
Calcium	06/13/2007			OK	OK	OK	OK			106.0	104.0	1.0			104.0
Iron	06/13/2007			OK	OK	OK	OK			98.0	103.0	5.0	103.0		103.0
Magnesium	06/13/2007			OK	OK	OK	OK			110.0	113.0	1.0	105.0	0.0	104.0
Manganese	06/13/2007			OK	OK	OK	OK			98.0	102.0	3.0	92.0	0.0	100.0
Molybdenum	06/07/2007	0.0000	1.0000	OK	OK	OK	OK			103.0	101.0	2.0	114.0		136.0
Molybdenum	06/07/2007									104.0	105.0	2.0			
Potassium	06/13/2007			OK	OK	OK	OK			119.0	125.0	4.0		9.0	86.0
Selenium	06/13/2007	0.0000	1.0000	OK	OK	OK	OK	OK	89.0	104.0	103.0	1.0	97.0		98.0
Selenium	06/13/2007							OK	90.0	110.0	110.0	0.0			
Selenium	06/13/2007							OK	90.0	115.0	115.0	0.0			
Sodium	06/13/2007			OK	OK	OK	OK			108.0	112.0	2.0		10.0	109.0
Uranium	06/07/2007	0.0000	1.0000	OK	OK	OK	OK			99.0	100.0	1.0	105.0	0.0	108.0
Uranium	06/07/2007									103.0	101.0	1.0		7.0	

SAMPLE MANAGEMENT SYSTEM

Inorganics Data Validation Worksheet

RIN: 07050889 **Lab Code:** PAR **Date Due:** 6/30/2007

Matrix: Water **Site Code:** DUR **Date Completed:** 6/28/2007

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	06/07/2007	0.000	1.0000	OK	OK	OK	OK	OK	98.0	102.0	103.0	0	
Sulfate	06/07/2007	0.000	1.0000	OK	OK	OK	OK	OK	97.0	100.0	102.0	0	
Total Dissolved Solids	06/05/2007							OK	99.0			2.00	
Total Dissolved Solids	06/06/2007							OK	99.0			1.00	

Sampling Quality Control Assessment

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

Sampling Protocol

Results from all monitor wells were qualified with an "F" flag in the database indicating that the wells were purged and sampled using the low-flow method.

The drawdown specification in the low-flow procedure was exceeded at wells 0612-01, 0634-01, 0594-02, 0607-02, and 623-03, because of the low yield of these wells. Therefore, results from these wells were qualified with a "Q" flag in the database indicating that the data is qualitative because of the sampling technique.

Equipment Blank Assessment

One equipment blank was collected for the locations sampled using non-dedicated equipment. The results for the equipment blank that was collected during this sampling event were all less than the method detection limits and are acceptable.

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. Duplicate samples were collected from wells 0631-01 and 0635-01. The duplicate results met the EPA recommended laboratory duplicate criteria of having an RPD of less than 20 percent for results that are greater than 5 times the practical quantitation limit and are acceptable.

SAMPLE MANAGEMENT SYSTEM

Validation Report: Field Duplicates

RIN: 07050889 **Lab Code:** PAR **Project:** Durango **Validation Date:** 7/9/2007

Duplicate: 2348-03 **Sample:** 635

Analyte	Sample Result	Sample Flag	Sample Error	Duplicate Result	Duplicate Flag	Duplicate Error	RPD	RER	Units
MANGANESE	430			470			8.89		UG/L
MOLYBDENUM	1.3			1.4			7.41		UG/L
SELENIUM	0.14			0.14					UG/L
SULFATE	1100			1100			0		MG/L
TOTAL DISSOLVED SOLIDS	2100			2100			0		MG/L
URANIUM	7.3			7.5			2.70		UG/L

Duplicate: 2498-01 **Sample:** 631

Analyte	Sample Result	Sample Flag	Sample Error	Duplicate Result	Duplicate Flag	Duplicate Error	RPD	RER	Units
MANGANESE	180			180			0		UG/L
MOLYBDENUM	6.8			7			2.90		UG/L
SELENIUM	0.43			0.36			17.72		UG/L
SULFATE	150			150			0		MG/L
TOTAL DISSOLVED SOLIDS	580			630			8.26		MG/L
URANIUM	120			120			0		UG/L

Certification

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

Laboratory Coordinator: Steve Donivan — Date: 8-10-2007

Data Validation Lead: Steve Donivan — Date: 8-10-2007

Attachment 1
Assessment of Anomalous Data

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Potential Outliers

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Potential Outliers

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 all new data that fall outside the historical data range. Data listed in the report are highlighted if the concentration detected is not within 50 percent of historical minimum or maximum values. A determination is also made if the data are normally distributed using the Studentized Range 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.

There are no data for this sampling event that were identified as potential outliers.

Data Validation Outliers Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 07050889
Comparison: All Historical Data
Report Date: 8/3/2007

Site Code	Location Code	Sample Date	Analyte	Current	Qualifiers		Historical Maximum	Qualifiers		Historical Minimum	Qualifiers		Count		Normally Distributed	Statistical Outlier
				Result	Lab	Data	Result	Lab	Data	Result	Lab	Data	N	N Below Detect		
DUR01	0612	05/31/2007	Selenium	0.00025		FQ	0.226			0.00038		F	49	4	Yes	No
DUR01	0617	05/31/2007	Selenium	0.0015		F	0.16			0.0063		F	37	0	Yes	No
DUR01	0630	05/31/2007	Manganese	0.38		F	4.49			0.672			18	0	Yes	No
DUR01	0631	05/31/2007	Manganese	0.18		F	0.633			0.206		F	19	0	No	No
DUR01	0631	05/31/2007	Sulfate	150		F	1600			240		F	18	0	Yes	No
DUR01	0631	05/31/2007	Total Dissolved Solids	630		F	3090			710		F	14	0	Yes	No
DUR01	0631	05/31/2007	Total Dissolved Solids	580		F	3090			710		F	14	0	Yes	No
DUR01	0631	05/31/2007	Uranium	0.12		F	0.63			0.14		F	19	0	Yes	No
DUR01	0633	05/31/2007	Selenium	0.006		F	0.123		F	0.0082		F	20	0	Yes	No
DUR01	0633	05/31/2007	Total Dissolved Solids	6500		F	6410		F	4940		F	15	0	Yes	No
DUR01	0635	05/30/2007	Molybdenum	0.0014		F	0.027		F	0.0018	U	QF	18	10	Yes	No
DUR01	0635	05/30/2007	Molybdenum	0.0013		F	0.027		F	0.0018	U	QF	18	10	Yes	No
DUR01	0635	05/30/2007	Selenium	0.00014		F	0.048		F	0.00051		Q	18	2	No	No
DUR01	0652	05/29/2007	Cadmium	0.00015	B	U	0.002	S		0.00018	B	J	21	12	Yes	No
DUR01	0863	05/31/2007	Uranium	0.0001		F	0.0028			0.00012	B	F	10	5	Yes	No
DUR02	0598	05/30/2007	Total Dissolved Solids	4600		F	18000	H		7700		F	19	0	Yes	No
DUR02	0654	05/29/2007	Cadmium	0.00015	B	U	0.001	U	RX	0.00016	B*	J	18	12	No	No
DUR02	0879	05/30/2007	Uranium	0.041		F	0.4		F	0.078		F	10	0	Yes	No
DUR03	0605	05/31/2007	Molybdenum	0.00008	U	F	0.09			0.00021	B	F	35	28	Yes	No

Data Validation Outliers Report - No Field Parameters
Laboratory: PARAGON (Fort Collins, CO)
RIN: 07050889
Comparison: All Historical Data
Report Date: 8/3/2007

Site Code	Location Code	Sample Date	Analyte	Current Result	Current Qualifiers Lab	Current Qualifiers Data	Historical Maximum Result	Historical Maximum Qualifiers Lab	Historical Maximum Qualifiers Data	Historical Minimum Result	Historical Minimum Qualifiers Lab	Historical Minimum Qualifiers Data	Count N	Count N Below Detect	Normally Distributed	Statistical Outlier
DUR03	0612	05/31/2007	Manganese	0.0066	B	F	0.13		F	0.0089	B	FQ	26	3	Yes	No
DUR03	0618	05/30/2007	Uranium	0.047		F	0.043		F	0.001			9	0	Yes	No
DUR03	0623	05/30/2007	Magnesium	260		FQ	245		L	130		FQ	31	0	No	No
DUR03	0623	05/30/2007	Total Dissolved Solids	2700		FQ	2690		L	1500		FQ	26	0	Yes	No

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

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

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

STATISTICAL TESTS:
The distribution of the data is tested for normality using the Studentized Range 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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Attachment 2
Data Presentation

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Ground Water Quality Data

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Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0612 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	37.41	-	57.41	512		FQ	#		
Cadmium	mg/L	05/31/2007	0001	37.41	-	57.41	0.024		FQ	#	.0008	
Manganese	mg/L	05/31/2007	0001	37.41	-	57.41	4.6		FQ	#	.00017	
Molybdenum	mg/L	05/31/2007	0001	37.41	-	57.41	0.11		FQ	#	.0016	
Oxidation Reduction Potential	mV	05/31/2007	N001	37.41	-	57.41	46.2		FQ	#		
pH	s.u.	05/31/2007	N001	37.41	-	57.41	6.79		FQ	#		
Selenium	mg/L	05/31/2007	0001	37.41	-	57.41	0.00025		FQ	#	.000038	
Specific Conductance	umhos /cm	05/31/2007	N001	37.41	-	57.41	4784		FQ	#		
Sulfate	mg/L	05/31/2007	0001	37.41	-	57.41	2100		FQ	#	25	
Temperature	C	05/31/2007	N001	37.41	-	57.41	14.51		FQ	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	37.41	-	57.41	4000		FQ	#	80	
Turbidity	NTU	05/31/2007	N001	37.41	-	57.41	2.02		FQ	#		
Uranium	mg/L	05/31/2007	0001	37.41	-	57.41	1.6		FQ	#	.000093	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0617 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	14	-	29	436		F	#		
Manganese	mg/L	05/31/2007	0001	14	-	29	0.24		F	#	.00017	
Molybdenum	mg/L	05/31/2007	0001	14	-	29	0.0015		F	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	14	-	29	-141.3		F	#		
pH	s.u.	05/31/2007	N001	14	-	29	6.9		F	#		
Selenium	mg/L	05/31/2007	0001	14	-	29	0.0015		F	#	.000038	
Specific Conductance	umhos /cm	05/31/2007	N001	14	-	29	3650		F	#		
Sulfate	mg/L	05/31/2007	0001	14	-	29	2000		F	#	25	
Temperature	C	05/31/2007	N001	14	-	29	12.39		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	14	-	29	3500		F	#	80	
Uranium	mg/L	05/31/2007	0001	14	-	29	0.2		F	#	.000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0630 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	28.3	-	38.3	420		F	#		
Manganese	mg/L	05/31/2007	0001	28.3	-	38.3	0.38		F	#	.00017	
Molybdenum	mg/L	05/31/2007	0001	28.3	-	38.3	0.0039		F	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	28.3	-	38.3	-27.4		F	#		
pH	s.u.	05/31/2007	N001	28.3	-	38.3	6.91		F	#		
Selenium	mg/L	05/31/2007	0001	28.3	-	38.3	0.019		F	#	.000038	
Specific Conductance	umhos /cm	05/31/2007	N001	28.3	-	38.3	3508		F	#		
Sulfate	mg/L	05/31/2007	0001	28.3	-	38.3	1900		F	#	25	
Temperature	C	05/31/2007	N001	28.3	-	38.3	13.93		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	28.3	-	38.3	3200		F	#	80	
Turbidity	NTU	05/31/2007	N001	28.3	-	38.3	3.33		F	#		
Uranium	mg/L	05/31/2007	0001	28.3	-	38.3	0.24		F	#	.000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0631 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	6	-	16	260		F	#		
Manganese	mg/L	05/31/2007	0001	6	-	16	0.18		F	#	.000084	
Manganese	mg/L	05/31/2007	0002	6	-	16	0.18		F	#	.000084	
Molybdenum	mg/L	05/31/2007	0001	6	-	16	0.0068		F	#	.00008	
Molybdenum	mg/L	05/31/2007	0002	6	-	16	0.007		F	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	6	-	16	-45.4		F	#		
pH	s.u.	05/31/2007	N001	6	-	16	7.22		F	#		
Selenium	mg/L	05/31/2007	0001	6	-	16	0.00043		F	#	.000038	
Selenium	mg/L	05/31/2007	0002	6	-	16	0.00036		F	#	.000038	
Specific Conductance	umhos /cm	05/31/2007	N001	6	-	16	914		F	#		
Sulfate	mg/L	05/31/2007	0001	6	-	16	150		F	#	5	
Sulfate	mg/L	05/31/2007	0002	6	-	16	150		F	#	5	
Temperature	C	05/31/2007	N001	6	-	16	12.43		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	6	-	16	580		F	#	20	
Total Dissolved Solids	mg/L	05/31/2007	0002	6	-	16	630		F	#	20	
Turbidity	NTU	05/31/2007	N001	6	-	16	2.19		F	#		
Uranium	mg/L	05/31/2007	0001	6	-	16	0.12		F	#	.000023	
Uranium	mg/L	05/31/2007	0002	6	-	16	0.12		F	#	.000023	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0633 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	4	-	14	660		F	#		
Manganese	mg/L	05/31/2007	0001	4	-	14	0.88		F	#	.00042	
Molybdenum	mg/L	05/31/2007	0001	4	-	14	0.0011		F	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	4	-	14	-155.3		F	#		
pH	s.u.	05/31/2007	N001	4	-	14	6.78		F	#		
Selenium	mg/L	05/31/2007	0001	4	-	14	0.006		F	#	.000038	
Specific Conductance	umhos /cm	05/31/2007	N001	4	-	14	6537		F	#		
Sulfate	mg/L	05/31/2007	0001	4	-	14	3600		F	#	25	
Temperature	C	05/31/2007	N001	4	-	14	18.26		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	4	-	14	6500		F	#	80	
Turbidity	NTU	05/31/2007	N001	4	-	14	1.99		F	#		
Uranium	mg/L	05/31/2007	0001	4	-	14	1		F	#	.000093	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0634 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	8	-	18	497		FQ	#		
Manganese	mg/L	05/30/2007	0001	8	-	18	0.26		FQ	#	.00017	
Molybdenum	mg/L	05/30/2007	0001	8	-	18	0.001		FQ	#	.00008	
pH	s.u.	05/30/2007	N001	8	-	18	7.08		FQ	#		
Selenium	mg/L	05/30/2007	0001	8	-	18	0.00012		FQ	#	.000038	
Specific Conductance	umhos /cm	05/30/2007	N001	8	-	18	4563		FQ	#		
Sulfate	mg/L	05/30/2007	0001	8	-	18	2200		FQ	#	25	
Temperature	C	05/30/2007	N001	8	-	18	12.06		FQ	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	8	-	18	4000		FQ	#	80	
Turbidity	NTU	05/30/2007	N001	8	-	18	4.66		FQ	#		
Uranium	mg/L	05/30/2007	0001	8	-	18	0.017		FQ	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0635 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	5.5	-	15.5	488		F	#		
Manganese	mg/L	05/30/2007	0001	5.5	-	15.5	0.43		F	#	.00017	
Manganese	mg/L	05/30/2007	0002	5.5	-	15.5	0.47		F	#	.000084	
Molybdenum	mg/L	05/30/2007	0001	5.5	-	15.5	0.0013		F	#	.00008	
Molybdenum	mg/L	05/30/2007	0002	5.5	-	15.5	0.0014		F	#	.00008	
Oxidation Reduction Potential	mV	05/30/2007	N001	5.5	-	15.5	-88.7		F	#		
pH	s.u.	05/30/2007	N001	5.5	-	15.5	6.93		F	#		
Selenium	mg/L	05/30/2007	0001	5.5	-	15.5	0.00014		F	#	.000038	
Selenium	mg/L	05/30/2007	0002	5.5	-	15.5	0.00014		F	#	.000038	
Specific Conductance	umhos /cm	05/30/2007	N001	5.5	-	15.5	2445		F	#		
Sulfate	mg/L	05/30/2007	0001	5.5	-	15.5	1100		F	#	10	
Sulfate	mg/L	05/30/2007	0002	5.5	-	15.5	1100		F	#	10	
Temperature	C	05/30/2007	N001	5.5	-	15.5	12.14		F	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	5.5	-	15.5	2100		F	#	40	
Total Dissolved Solids	mg/L	05/30/2007	0002	5.5	-	15.5	2100		F	#	40	
Turbidity	NTU	05/30/2007	N001	5.5	-	15.5	6.28		F	#		
Uranium	mg/L	05/30/2007	0001	5.5	-	15.5	0.0073		F	#	.0000046	
Uranium	mg/L	05/30/2007	0002	5.5	-	15.5	0.0075		F	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0863 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	58	-	67.5	585		F	#		
Cadmium	mg/L	05/31/2007	0001	58	-	67.5	0.000067	B	UF	#	.00004	
Manganese	mg/L	05/31/2007	0001	58	-	67.5	0.11		F	#	.00017	
Molybdenum	mg/L	05/31/2007	0001	58	-	67.5	0.00062	B	UF	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	58	-	67.5	-44.4		F	#		
pH	s.u.	05/31/2007	N001	58	-	67.5	7.14		F	#		
Selenium	mg/L	05/31/2007	0001	58	-	67.5	0.000073	B	F	#	.000038	
Specific Conductance	umhos /cm	05/31/2007	N001	58	-	67.5	2258		F	#		
Sulfate	mg/L	05/31/2007	0001	58	-	67.5	630		F	#	10	
Temperature	C	05/31/2007	N001	58	-	67.5	14.12		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	58	-	67.5	1600		F	#	40	
Turbidity	NTU	05/31/2007	N001	58	-	67.5	2.68		F	#		
Uranium	mg/L	05/31/2007	0001	58	-	67.5	0.0001		F	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0594 WELL Original location DH-116.

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	8.5	-	38.5	346		FQ	#		
Oxidation Reduction Potential	mV	05/30/2007	N001	8.5	-	38.5	-143.4		FQ	#		
pH	s.u.	05/30/2007	N001	8.5	-	38.5	6.95		FQ	#		
Selenium	mg/L	05/30/2007	0001	8.5	-	38.5	0.0058		FQ	#	.000038	
Specific Conductance	umhos /cm	05/30/2007	N001	8.5	-	38.5	3813		FQ	#		
Temperature	C	05/30/2007	N001	8.5	-	38.5	12.92		FQ	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	8.5	-	38.5	3000		FQ	#	40	
Turbidity	NTU	05/30/2007	N001	8.5	-	38.5	1.89		FQ	#		
Uranium	mg/L	05/30/2007	0001	8.5	-	38.5	0.043		FQ	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0598 WELL Original location Bureau of Rec well DH-110.

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	66.2	-	96.2	324		F	#		
Oxidation Reduction Potential	mV	05/30/2007	N001	66.2	-	96.2	14.8		F	#		
pH	s.u.	05/30/2007	N001	66.2	-	96.2	7.07		F	#		
Selenium	mg/L	05/30/2007	0001	66.2	-	96.2	0.76		F	#	.0038	
Specific Conductance	umhos /cm	05/30/2007	N001	66.2	-	96.2	5025		F	#		
Temperature	C	05/30/2007	N001	66.2	-	96.2	12.16		F	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	66.2	-	96.2	4600		F	#	80	
Turbidity	NTU	05/30/2007	N001	66.2	-	96.2	9.2		F	#		
Uranium	mg/L	05/30/2007	0001	66.2	-	96.2	0.23		F	#	.000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0607 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	35	-	55	356		FQ	#		
Oxidation Reduction Potential	mV	05/30/2007	N001	35	-	55	63.9		FQ	#		
pH	s.u.	05/30/2007	N001	35	-	55	7.1		FQ	#		
Selenium	mg/L	05/30/2007	0001	35	-	55	0.87		FQ	#	.0038	
Specific Conductance	umhos /cm	05/30/2007	N001	35	-	55	2807		FQ	#		
Temperature	C	05/30/2007	N001	35	-	55	13.92		FQ	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	35	-	55	2400		FQ	#	40	
Turbidity	NTU	05/30/2007	N001	35	-	55	3.26		FQ	#		
Uranium	mg/L	05/30/2007	0001	35	-	55	0.0045		FQ	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0879 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	27	-	36.9	384		F	#		
Oxidation Reduction Potential	mV	05/30/2007	N001	27	-	36.9	-9.5		F	#		
pH	s.u.	05/30/2007	N001	27	-	36.9	6.79		F	#		
Selenium	mg/L	05/30/2007	0001	27	-	36.9	0.034		F	#	.00038	
Specific Conductance	umhos /cm	05/30/2007	N001	27	-	36.9	9176		F	#		
Temperature	C	05/30/2007	N001	27	-	36.9	11.39		F	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	27	-	36.9	8400		F	#	200	
Turbidity	NTU	05/30/2007	N001	27	-	36.9	9.86		F	#		
Uranium	mg/L	05/30/2007	0001	27	-	36.9	0.041		F	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0884 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/29/2007	0001	36.5	-	46.5	302		F	#		
Oxidation Reduction Potential	mV	05/29/2007	N001	36.5	-	46.5	236.6		F	#		
pH	s.u.	05/29/2007	N001	36.5	-	46.5	7.13		F	#		
Selenium	mg/L	05/29/2007	0001	36.5	-	46.5	1.1		F	#	.0038	
Specific Conductance	umhos /cm	05/29/2007	N001	36.5	-	46.5	5035		F	#		
Temperature	C	05/29/2007	N001	36.5	-	46.5	14.1		F	#		
Total Dissolved Solids	mg/L	05/29/2007	0001	36.5	-	46.5	4500		F	#	80	
Turbidity	NTU	05/29/2007	N001	36.5	-	46.5	2.13		F	#		
Uranium	mg/L	05/29/2007	0001	36.5	-	46.5	0.1		F	#	.000023	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007
Location: 0605 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	36	-	56	961		F	#		
Calcium	mg/L	05/31/2007	0001	36	-	56	130		F	#	.011	
Chloride	mg/L	05/31/2007	0001	36	-	56	29		F	#	2	
Iron	mg/L	05/31/2007	0001	36	-	56	0.011	B	F	#	.0074	
Magnesium	mg/L	05/31/2007	0001	36	-	56	120		F	#	.0096	
Manganese	mg/L	05/31/2007	0001	36	-	56	0.037		F	#	.00017	
Molybdenum	mg/L	05/31/2007	0001	36	-	56	0.00008	U	F	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	36	-	56	-176.8		F	#		
pH	s.u.	05/31/2007	N001	36	-	56	7.02		F	#		
Potassium	mg/L	05/31/2007	0001	36	-	56	9.1		F	#	.05	
Selenium	mg/L	05/31/2007	0001	36	-	56	0.000038	U	F	#	.000038	
Sodium	mg/L	05/31/2007	0001	36	-	56	280		F	#	.0036	
Specific Conductance	umhos /cm	05/31/2007	N001	36	-	56	2460		F	#		
Sulfate	mg/L	05/31/2007	0001	36	-	56	750		F	#	5	
Temperature	C	05/31/2007	N001	36	-	56	13.65		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	36	-	56	1800		F	#	40	
Turbidity	NTU	05/31/2007	N001	36	-	56	2.52		F	#		
Uranium	mg/L	05/31/2007	0001	36	-	56	0.00024		UF	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007
Location: 0607 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	36.7	-	56.7	462		F	#		
Calcium	mg/L	05/31/2007	0001	36.7	-	56.7	320		F	#	.011	
Chloride	mg/L	05/31/2007	0001	36.7	-	56.7	13		F	#	2	
Iron	mg/L	05/31/2007	0001	36.7	-	56.7	0.087	B	F	#	.0074	
Magnesium	mg/L	05/31/2007	0001	36.7	-	56.7	210		F	#	.0096	
Manganese	mg/L	05/31/2007	0001	36.7	-	56.7	0.085		F	#	.00017	
Molybdenum	mg/L	05/31/2007	0001	36.7	-	56.7	0.00008	U	F	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	36.7	-	56.7	-201.3		F	#		
pH	s.u.	05/31/2007	N001	36.7	-	56.7	6.93		F	#		
Potassium	mg/L	05/31/2007	0001	36.7	-	56.7	9.1		F	#	.05	
Selenium	mg/L	05/31/2007	0001	36.7	-	56.7	0.000051	B	UF	#	.000038	
Sodium	mg/L	05/31/2007	0001	36.7	-	56.7	320		F	#	.0036	
Specific Conductance	umhos /cm	05/31/2007	N001	36.7	-	56.7	3500		F	#		
Sulfate	mg/L	05/31/2007	0001	36.7	-	56.7	1900		F	#	25	
Temperature	C	05/31/2007	N001	36.7	-	56.7	12.12		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	36.7	-	56.7	3200		F	#	40	
Turbidity	NTU	05/31/2007	N001	36.7	-	56.7	1.66		F	#		
Uranium	mg/L	05/31/2007	0001	36.7	-	56.7	0.00014		UF	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007
Location: 0608 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	29	-	39	368		F	#		
Calcium	mg/L	05/30/2007	0001	29	-	39	220		F	#	.0053	
Chloride	mg/L	05/30/2007	0001	29	-	39	22		F	#	4	
Iron	mg/L	05/30/2007	0001	29	-	39	0.0037	U	F	#	.0037	
Magnesium	mg/L	05/30/2007	0001	29	-	39	130		F	#	.0048	
Manganese	mg/L	05/30/2007	0001	29	-	39	0.000084	U	F	#	.000084	
Molybdenum	mg/L	05/30/2007	0001	29	-	39	0.00095	B	UF	#	.00008	
Oxidation Reduction Potential	mV	05/30/2007	N001	29	-	39	208.3		F	#		
pH	s.u.	05/30/2007	N001	29	-	39	7.02		F	#		
Potassium	mg/L	05/30/2007	0001	29	-	39	5.7		F	#	.025	
Selenium	mg/L	05/30/2007	0001	29	-	39	0.0051		F	#	.000038	
Sodium	mg/L	05/30/2007	0001	29	-	39	79		F	#	.0018	
Specific Conductance	umhos /cm	05/30/2007	N001	29	-	39	1814		F	#		
Sulfate	mg/L	05/30/2007	0001	29	-	39	700		F	#	10	
Temperature	C	05/30/2007	N001	29	-	39	10.73		F	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	29	-	39	1500		F	#	40	
Turbidity	NTU	05/30/2007	N001	29	-	39	2.46		F	#		
Uranium	mg/L	05/30/2007	0001	29	-	39	0.0084		F	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007
Location: 0612 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	98.09	-	108.09	2235		F	#		
Calcium	mg/L	05/31/2007	0001	98.09	-	108.09	5.8		F	#	.011	
Chloride	mg/L	05/31/2007	0001	98.09	-	108.09	55		F	#	1	
Iron	mg/L	05/31/2007	0001	98.09	-	108.09	0.028	B	UF	#	.0074	
Magnesium	mg/L	05/31/2007	0001	98.09	-	108.09	3.7		F	#	.0096	
Manganese	mg/L	05/31/2007	0001	98.09	-	108.09	0.0066	B	F	#	.00017	
Molybdenum	mg/L	05/31/2007	0001	98.09	-	108.09	0.0004	U	F	#	.0004	
Oxidation Reduction Potential	mV	05/31/2007	N001	98.09	-	108.09	-328.7		F	#		
pH	s.u.	05/31/2007	N001	98.09	-	108.09	7.99		F	#		
Potassium	mg/L	05/31/2007	0001	98.09	-	108.09	9.8		F	#	.05	
Selenium	mg/L	05/31/2007	0001	98.09	-	108.09	0.00028		UF	#	.000077	
Sodium	mg/L	05/31/2007	0001	98.09	-	108.09	730		F	#	.046	
Specific Conductance	umhos /cm	05/31/2007	N001	98.09	-	108.09	3898		F	#		
Sulfate	mg/L	05/31/2007	0001	98.09	-	108.09	20		F	#	2.5	
Temperature	C	05/31/2007	N001	98.09	-	108.09	11.93		F	#		
Total Dissolved Solids	mg/L	05/31/2007	0001	98.09	-	108.09	2700		F	#	80	
Turbidity	NTU	05/31/2007	N001	98.09	-	108.09	4.87		F	#		
Uranium	mg/L	05/31/2007	0001	98.09	-	108.09	0.00014	B	UF	#	.000023	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007
Location: 0618 WELL

Parameter	Units	Sample Date	ID	Depth Range (Ft BLS)	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	29.77 - 49.77	530		F	#		
Calcium	mg/L	05/30/2007	0001	29.77 - 49.77	300		F	#	.011	
Chloride	mg/L	05/30/2007	0001	29.77 - 49.77	42		F	#	4	
Iron	mg/L	05/30/2007	0001	29.77 - 49.77	0.0074	U	F	#	.0074	
Magnesium	mg/L	05/30/2007	0001	29.77 - 49.77	170		F	#	.0096	
Manganese	mg/L	05/30/2007	0001	29.77 - 49.77	0.00017	U	F	#	.00017	
Molybdenum	mg/L	05/30/2007	0001	29.77 - 49.77	0.00065	B	UF	#	.00008	
Oxidation Reduction Potential	mV	05/30/2007	N001	29.77 - 49.77	72.1		F	#		
pH	s.u.	05/30/2007	N001	29.77 - 49.77	6.94		F	#		
Potassium	mg/L	05/30/2007	0001	29.77 - 49.77	3.4		F	#	.05	
Selenium	mg/L	05/30/2007	0001	29.77 - 49.77	0.0074		F	#	.000038	
Sodium	mg/L	05/30/2007	0001	29.77 - 49.77	120		F	#	.0036	
Specific Conductance	umhos /cm	05/30/2007	N001	29.77 - 49.77	2532		F	#		
Sulfate	mg/L	05/30/2007	0001	29.77 - 49.77	1200		F	#	10	
Temperature	C	05/30/2007	N001	29.77 - 49.77	10.63		F	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	29.77 - 49.77	2200		F	#	40	
Turbidity	NTU	05/30/2007	N001	29.77 - 49.77	0.92		F	#		
Uranium	mg/L	05/30/2007	0001	29.77 - 49.77	0.047		F	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007
Location: 0621 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	78.46	-	88.46	0		F	#		
Calcium	mg/L	05/30/2007	0001	78.46	-	88.46	480		F	#	.011	
Chloride	mg/L	05/30/2007	0001	78.46	-	88.46	11		F	#	1	
Iron	mg/L	05/30/2007	0001	78.46	-	88.46	150		F	#	.0074	
Magnesium	mg/L	05/30/2007	0001	78.46	-	88.46	380		F	#	.0096	
Manganese	mg/L	05/30/2007	0001	78.46	-	88.46	2.9		F	#	.00017	
Molybdenum	mg/L	05/30/2007	0001	78.46	-	88.46	0.00016	B	UF	#	.00008	
Oxidation Reduction Potential	mV	05/30/2007	N001	78.46	-	88.46	422.3		F	#		
pH	s.u.	05/30/2007	N001	78.46	-	88.46	3.12		F	#		
Potassium	mg/L	05/30/2007	0001	78.46	-	88.46	16		F	#	.05	
Selenium	mg/L	05/30/2007	0001	78.46	-	88.46	0.0002		F	#	.000038	
Sodium	mg/L	05/30/2007	0001	78.46	-	88.46	190		F	#	.0036	
Specific Conductance	umhos /cm	05/30/2007	N001	78.46	-	88.46	4544		F	#		
Sulfate	mg/L	05/30/2007	0001	78.46	-	88.46	3200		F	#	25	
Temperature	C	05/30/2007	N001	78.46	-	88.46	12.86		F	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	78.46	-	88.46	4700		F	#	80	
Turbidity	NTU	05/30/2007	N001	78.46	-	88.46	4.67		F	#		
Uranium	mg/L	05/30/2007	0001	78.46	-	88.46	0.00011		F	#	.0000046	

Ground Water Quality Data by Location (USEE100) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007
Location: 0623 WELL

Parameter	Units	Sample Date	Sample ID	Depth Range (Ft BLS)			Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/30/2007	0001	19.35	-	39.35	474		FQ	#		
Calcium	mg/L	05/30/2007	0001	19.35	-	39.35	280		FQ	#	.011	
Chloride	mg/L	05/30/2007	0001	19.35	-	39.35	38		FQ	#	10	
Iron	mg/L	05/30/2007	0001	19.35	-	39.35	7.8		FQ	#	.0074	
Magnesium	mg/L	05/30/2007	0001	19.35	-	39.35	260		FQ	#	.0096	
Manganese	mg/L	05/30/2007	0001	19.35	-	39.35	0.43		FQ	#	.00017	
Molybdenum	mg/L	05/30/2007	0001	19.35	-	39.35	0.0011		FQ	#	.00008	
Oxidation Reduction Potential	mV	05/30/2007	N001	19.35	-	39.35	-75.4		FQ	#		
pH	s.u.	05/30/2007	N001	19.35	-	39.35	7.1		FQ	#		
Potassium	mg/L	05/30/2007	0001	19.35	-	39.35	3.4		FQ	#	.05	
Selenium	mg/L	05/30/2007	0001	19.35	-	39.35	0.00018		FQ	#	.000038	
Sodium	mg/L	05/30/2007	0001	19.35	-	39.35	160		FQ	#	.0036	
Specific Conductance	umhos /cm	05/30/2007	N001	19.35	-	39.35	3014		FQ	#		
Sulfate	mg/L	05/30/2007	0001	19.35	-	39.35	1400		FQ	#	25	
Temperature	C	05/30/2007	N001	19.35	-	39.35	12.12		FQ	#		
Total Dissolved Solids	mg/L	05/30/2007	0001	19.35	-	39.35	2700		FQ	#	40	
Turbidity	NTU	05/30/2007	N001	19.35	-	39.35	7.4		FQ	#		
Uranium	mg/L	05/30/2007	0001	19.35	-	39.35	0.0017		FQ	#	.0000046	

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

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

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Surface Water Quality Data

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Surface Water Quality Data by Location (USEE102) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0584 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	60			#		
Cadmium	mg/L	05/31/2007	0001	0.00021	B		#	.00004	
Molybdenum	mg/L	05/31/2007	0001	0.00069	B	U	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	-42			#		
pH	s.u.	05/31/2007	N001	8.2			#		
Selenium	mg/L	05/31/2007	0001	0.00016			#	.000038	
Specific Conductance	umhos/cm	05/31/2007	N001	264			#		
Temperature	C	05/31/2007	N001	10.55			#		
Uranium	mg/L	05/31/2007	0001	0.00044			#	.0000046	

Surface Water Quality Data by Location (USEE102) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0586 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/29/2007	0001	53			#		
Cadmium	mg/L	05/29/2007	0001	0.00016	B		#	.00004	
Molybdenum	mg/L	05/29/2007	0001	0.00055	B	U	#	.00008	
Oxidation Reduction Potential	mV	05/29/2007	N001	211			#		
pH	s.u.	05/29/2007	N001	7.85			#		
Selenium	mg/L	05/29/2007	0001	0.00017			#	.000038	
Specific Conductance	umhos/cm	05/29/2007	N001	211			#		
Temperature	C	05/29/2007	N001	11.41			#		
Uranium	mg/L	05/29/2007	0001	0.00039			#	.0000046	

Surface Water Quality Data by Location (USEE102) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0652 SURFACE LOCATION SURFACE WATER AND SED.

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/29/2007	0001	43			#		
Cadmium	mg/L	05/29/2007	0001	0.00015	B	U	#	.00004	
Molybdenum	mg/L	05/29/2007	0001	0.00056	B		#	.00008	
Oxidation Reduction Potential	mV	05/29/2007	N001	208.9			#		
pH	s.u.	05/29/2007	N001	7.65			#		
Selenium	mg/L	05/29/2007	0001	0.00017			#	.000038	
Specific Conductance	umhos/cm	05/29/2007	N001	195			#		
Temperature	C	05/29/2007	N001	9.63			#		
Uranium	mg/L	05/29/2007	0001	0.00054			#	.0000046	

Surface Water Quality Data by Location (USEE102) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007
Location: 0691 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/31/2007	0001	72			#		
Cadmium	mg/L	05/31/2007	0001	0.00055			#	.00004	
Molybdenum	mg/L	05/31/2007	0001	0.00054	B	U	#	.00008	
Oxidation Reduction Potential	mV	05/31/2007	N001	1.3			#		
pH	s.u.	05/31/2007	N001	7.97			#		
Selenium	mg/L	05/31/2007	0001	0.00016			#	.000038	
Specific Conductance	umhos/cm	05/31/2007	N001	308			#		
Temperature	C	05/31/2007	N001	11.17			#		
Uranium	mg/L	05/31/2007	0001	0.00045			#	.0000046	

Surface Water Quality Data by Location (USEE102) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0588 SURFACE LOCATION

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/29/2007	0001	313			#		
Cadmium	mg/L	05/29/2007	0001	0.00011	B	U	#	.00004	
Molybdenum	mg/L	05/29/2007	0001	0.0013			#	.00008	
Oxidation Reduction Potential	mV	05/29/2007	N001	214			#		
pH	s.u.	05/29/2007	N001	8.13			#		
Selenium	mg/L	05/29/2007	0001	0.00049			#	.000038	
Specific Conductance	umhos/cm	05/29/2007	N001	1755			#		
Temperature	C	05/29/2007	N001	17.4			#		
Uranium	mg/L	05/29/2007	0001	0.017			#	.0000046	

Surface Water Quality Data by Location (USEE102) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0654 SURFACE LOCATION RESERVED FOR CDAY

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/29/2007	0001	56			#		
Cadmium	mg/L	05/29/2007	0001	0.00015	B	U	#	.00004	
Molybdenum	mg/L	05/29/2007	0001	0.00054	B	U	#	.00008	
Oxidation Reduction Potential	mV	05/29/2007	N001	175.5			#		
pH	s.u.	05/29/2007	N001	8.23			#		
Selenium	mg/L	05/29/2007	0001	0.00016		U	#	.000038	
Specific Conductance	umhos/cm	05/29/2007	N001	216			#		
Temperature	C	05/29/2007	N001	11.53			#		
Uranium	mg/L	05/29/2007	0001	0.00063			#	.0000046	

Surface Water Quality Data by Location (USEE102) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007
Location: 0656 SURFACE LOCATION RESERVED FOR CDAY

Parameter	Units	Sample Date	Sample ID	Result	Qualifiers Lab	Qualifiers Data	Qualifiers QA	Detection Limit	Uncertainty
Alkalinity, Total (As CaCO3)	mg/L	05/29/2007	0001	63			#		
Cadmium	mg/L	05/29/2007	0001	0.00014	B	U	#	.00004	
Molybdenum	mg/L	05/29/2007	0001	0.0005	B	U	#	.00008	
Oxidation Reduction Potential	mV	05/29/2007	N001	181			#		
pH	s.u.	05/29/2007	N001	7.82			#		
Selenium	mg/L	05/29/2007	0001	0.00014		U	#	.000038	
Specific Conductance	umhos/cm	05/29/2007	N001	195			#		
Temperature	C	05/29/2007	N001	14.64			#		
Uranium	mg/L	05/29/2007	0001	0.00043			#	.0000046	

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

LAB QUALIFIERS:

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

DATA QUALIFIERS:

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

QA QUALIFIER:

#	Validated according to quality assurance guidelines.

Equipment Blank Data

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BLANKS REPORT
LAB: PARAGON (Fort Collins, CO)
RIN: 07050889
Report Date: 8/3/2007

Parameter	Site Code	Location ID	Sample Date	ID	Units	Result	Qualifiers Lab	Qualifiers Data	Detection Limit	Uncertainty	Sample Type
Calcium	DUR03	0999	05/31/2007	0001	mg/L	.06	B	U	.0053		E
Chloride	DUR03	0999	05/31/2007	0001	mg/L	.2	U		.2		E
Iron	DUR03	0999	05/31/2007	0001	mg/L	.0037	U		.0037		E
Magnesium	DUR03	0999	05/31/2007	0001	mg/L	.0048	U		.0048		E
Manganese	DUR03	0999	05/31/2007	0001	mg/L	.00023	B	U	.000084		E
Molybdenum	DUR03	0999	05/31/2007	0001	mg/L	.00008	U		.00008		E
Potassium	DUR03	0999	05/31/2007	0001	mg/L	.24	B	U	.025		E
Selenium	DUR03	0999	05/31/2007	0001	mg/L	.000038	U		.000038		E
Sodium	DUR03	0999	05/31/2007	0001	mg/L	.22	B	U	.0018		E
Sulfate	DUR03	0999	05/31/2007	0001	mg/L	.5	U		.5		E
Total Dissolved Solids	DUR03	0999	05/31/2007	0001	mg/L	20	U		20		E
Uranium	DUR03	0999	05/31/2007	0001	mg/L	.000027	B	U	.0000046		E

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

LAB QUALIFIERS:

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

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

DATA QUALIFIERS:

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

SAMPLE TYPES:

E	Equipment Blank.

Static Water Level Data

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STATIC WATER LEVELS (USEE700) FOR SITE DUR01, Durango Mill Tailings Process Site
REPORT DATE: 8/3/2007

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
0612	D	6500.94	05/31/2007	15:40:00	40.24	6460.7	
0617	D	6498.11	05/31/2007	14:03:00	28.74	6469.37	
0630	D	6494.44	05/31/2007	14:47:00	32.49	6461.95	
0631	D	6477.91	05/31/2007	13:27:00	7.63	6470.28	
0633	D	6481.81	05/31/2007	12:45:00	10.41	6471.4	
0634	D	6491.75	05/30/2007	17:26:00	13.65	6478.1	
0635	D	6497.68	05/30/2007	16:30:00	13.03	6484.65	
0863		6513.32	05/31/2007	16:06:00	56.23	6457.09	

STATIC WATER LEVELS (USEE700) FOR SITE DUR02, Durango Raffinate Pond Process Site
REPORT DATE: 8/3/2007

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
0594	O	6472.49	05/30/2007	08:10:00	16.56	6455.93	
0598	O	6479.09	05/30/2007	09:21:00	16.6	6462.49	
0607	U	6527.95	05/30/2007	11:19:00	51.09	6476.86	
0879		6473.91	05/30/2007	10:04:00	11.1	6462.81	
0884		6476.37	05/29/2007	17:40:00	16.58	6459.79	

STATIC WATER LEVELS (USEE700) FOR SITE DUR03, Durango Disposal Site
REPORT DATE: 8/3/2007

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
0605	U	7189.6	05/31/2007	10:16:00	38.7	7150.9	
0607	D	7099.1	05/31/2007	10:50:00	38.85	7060.25	
0608	D	7035	05/30/2007	13:01:00	31.7	7003.3	
0612	D	7109.8	05/31/2007	07:51:00	78.07	7031.73	
0618	D	7036.41	05/30/2007	13:46:00	33.8	7002.61	
0621	U	7035.77	05/30/2007	13:26:00	48.81	6986.96	
0623	U	7048.67	05/30/2007	14:14:00	33.47	7015.2	

FLOW CODES: B BACKGROUND C CROSS GRADIENT D DOWN GRADIENT O ON SITE
U UPGRADIENT

WATER LEVEL FLAGS: D Dry

Time Versus Concentration Graphs

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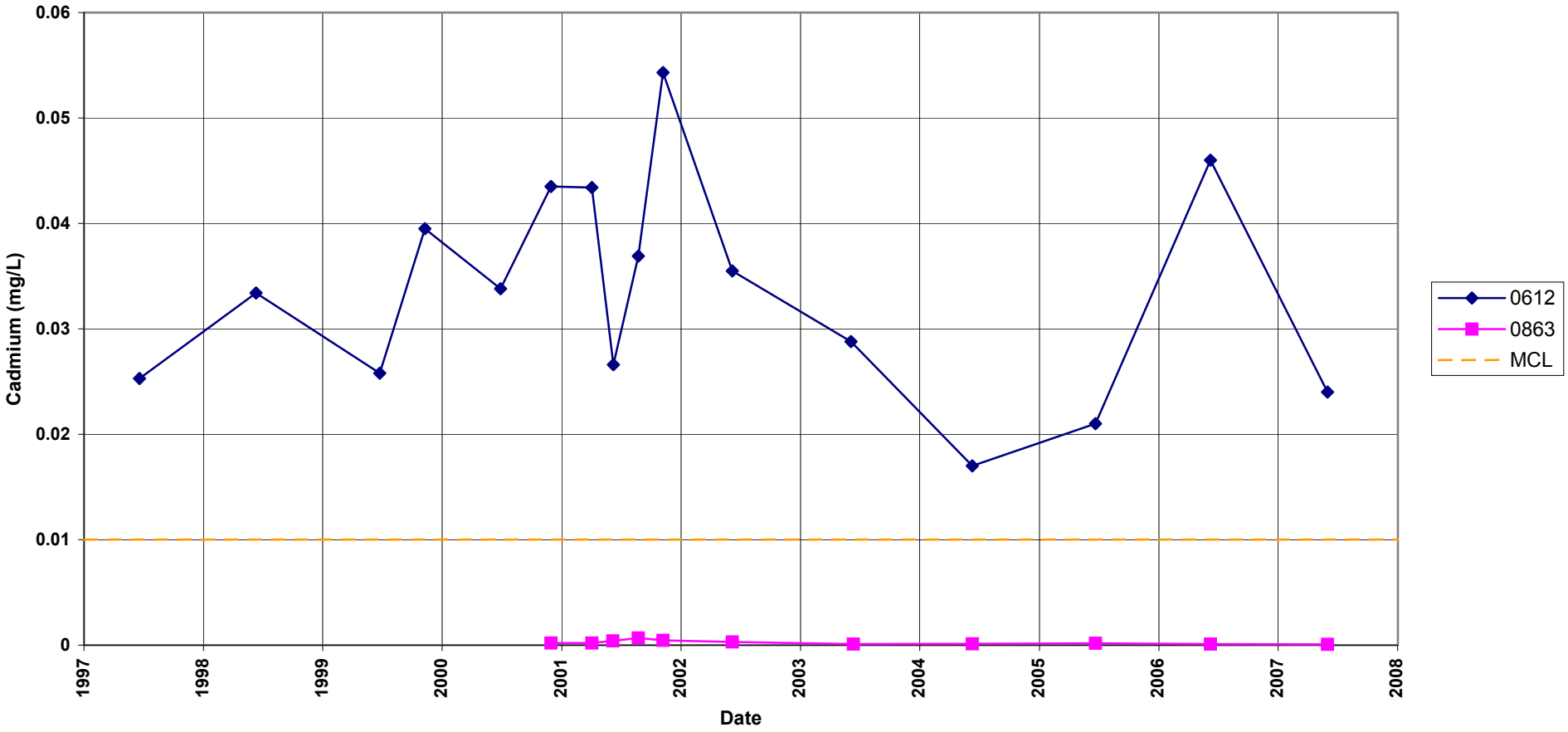
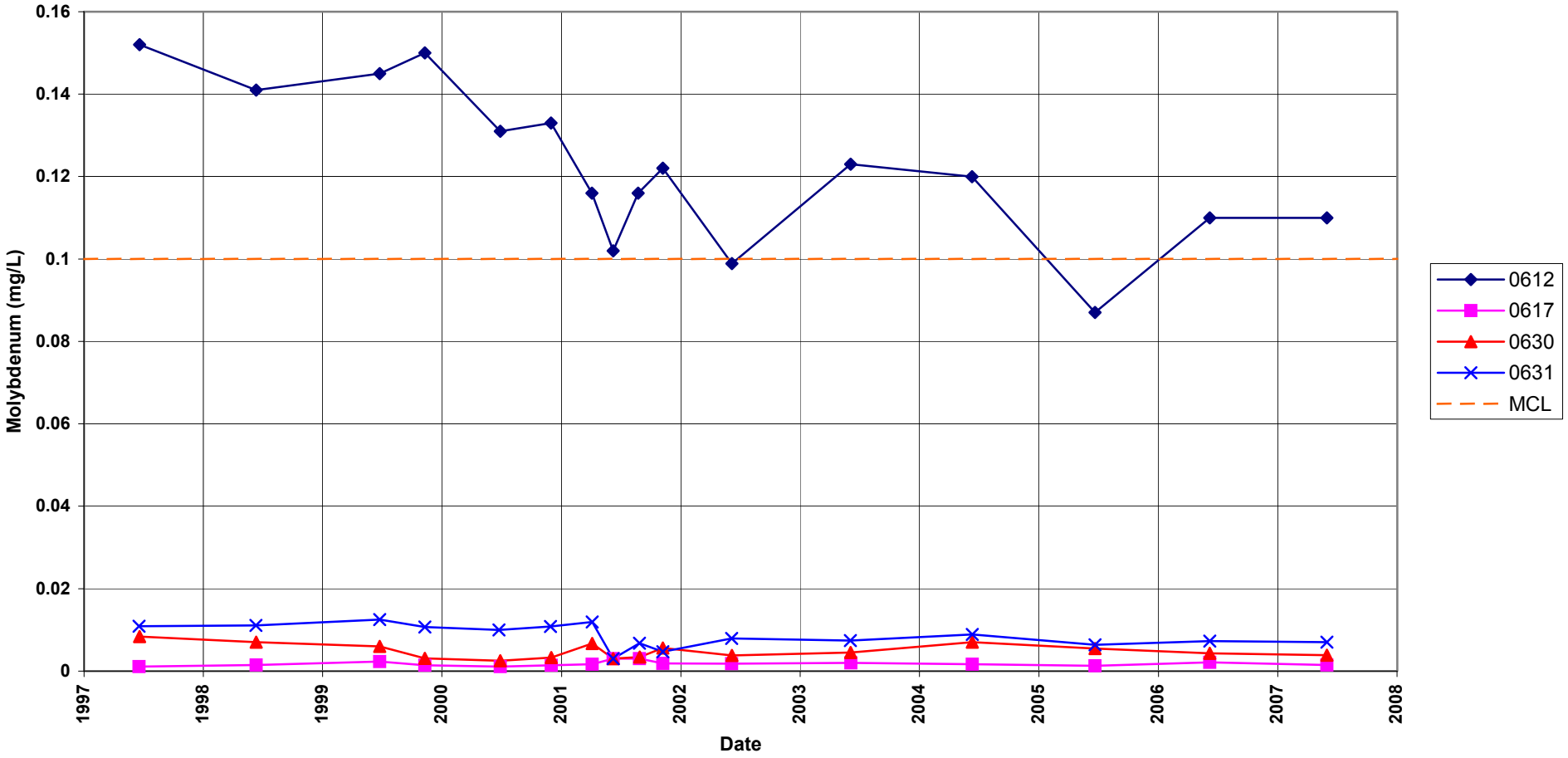
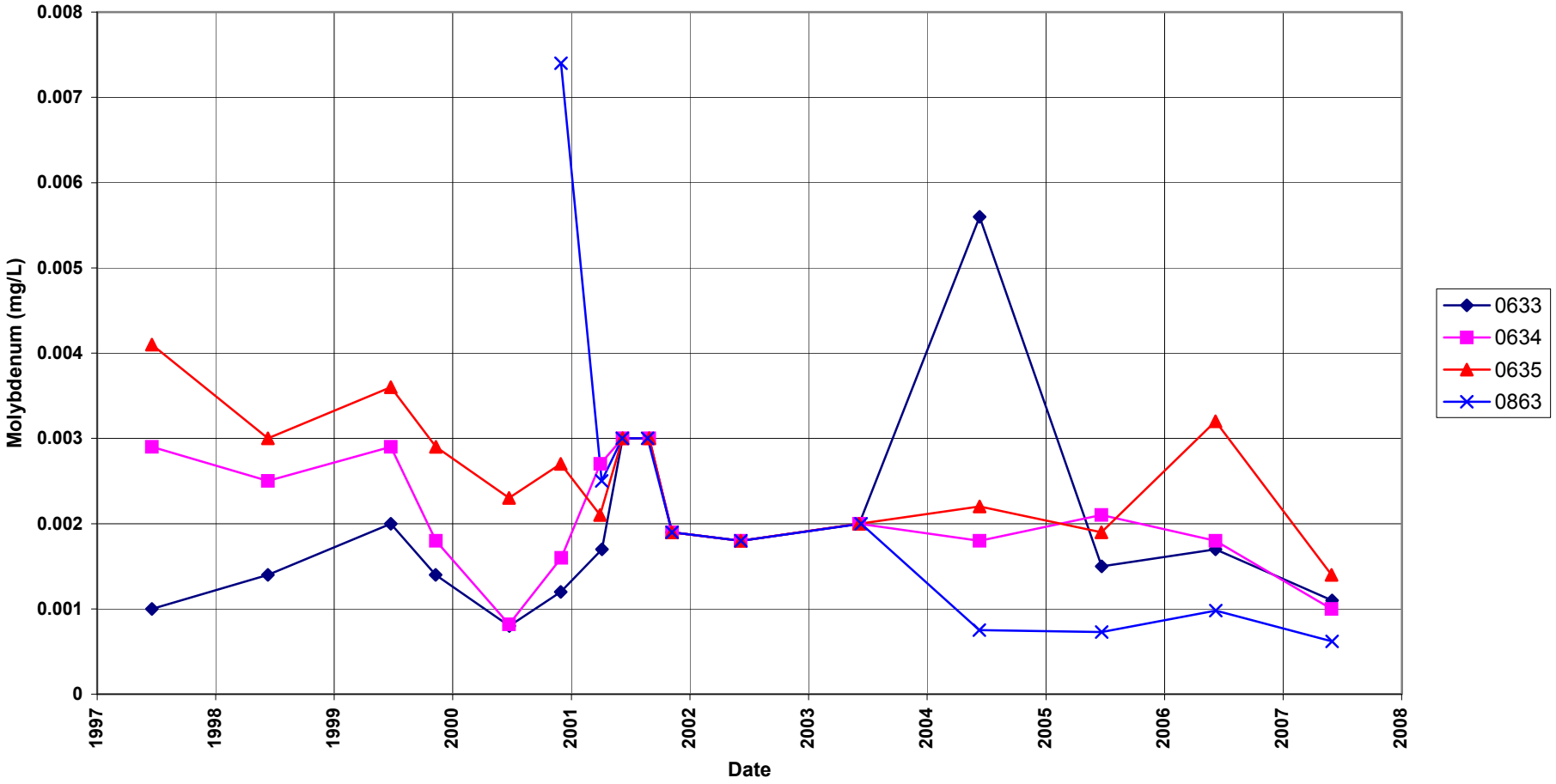
Durango Mill Tailings Process Site
Cadmium Concentration
Maximum Contaminant Level = 0.01 mg/L



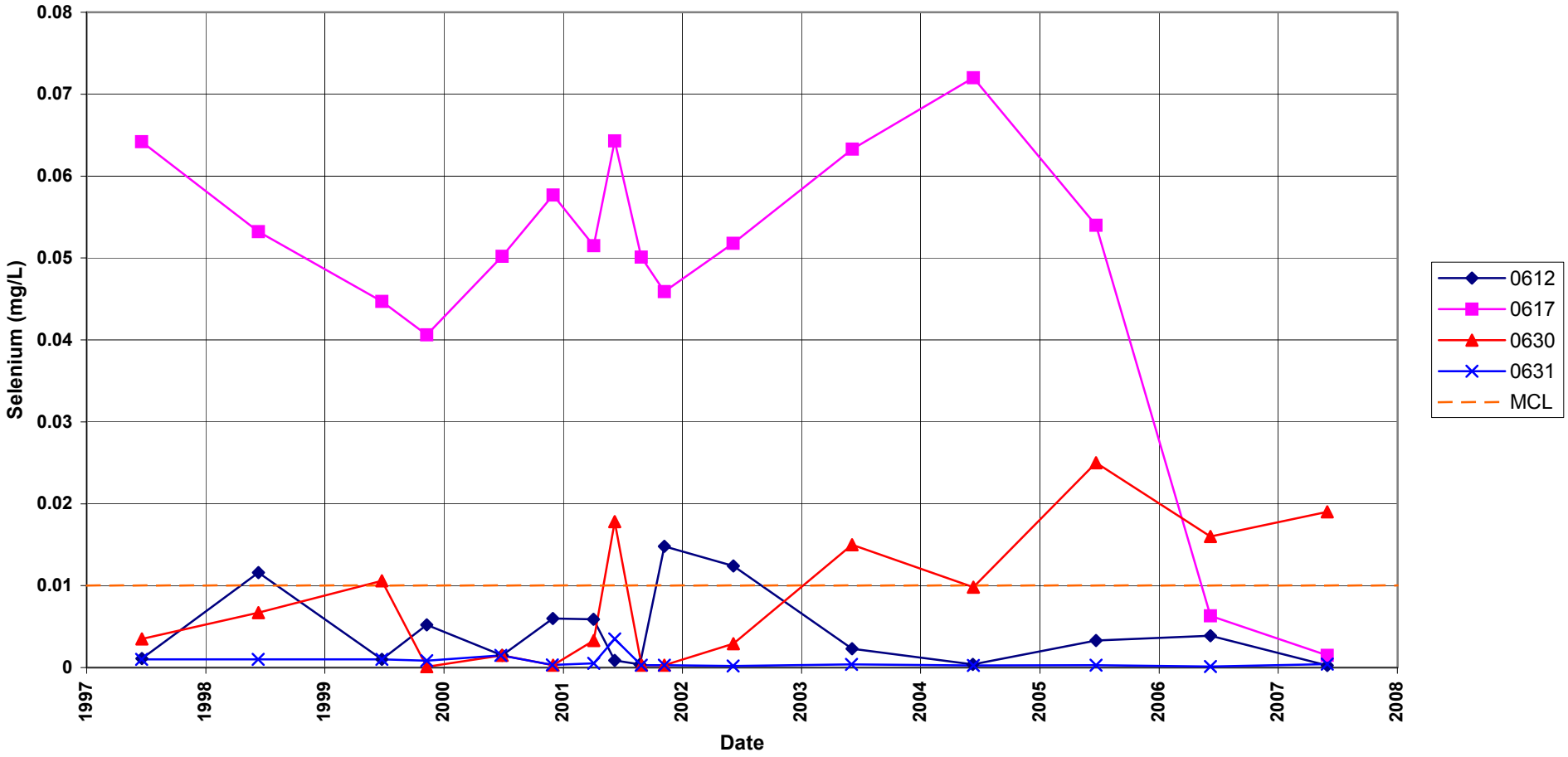
Durango Mill Tailings Processing Site
Molybdenum Concentration
Maximum Contaminant Level = 0.1 mg/L



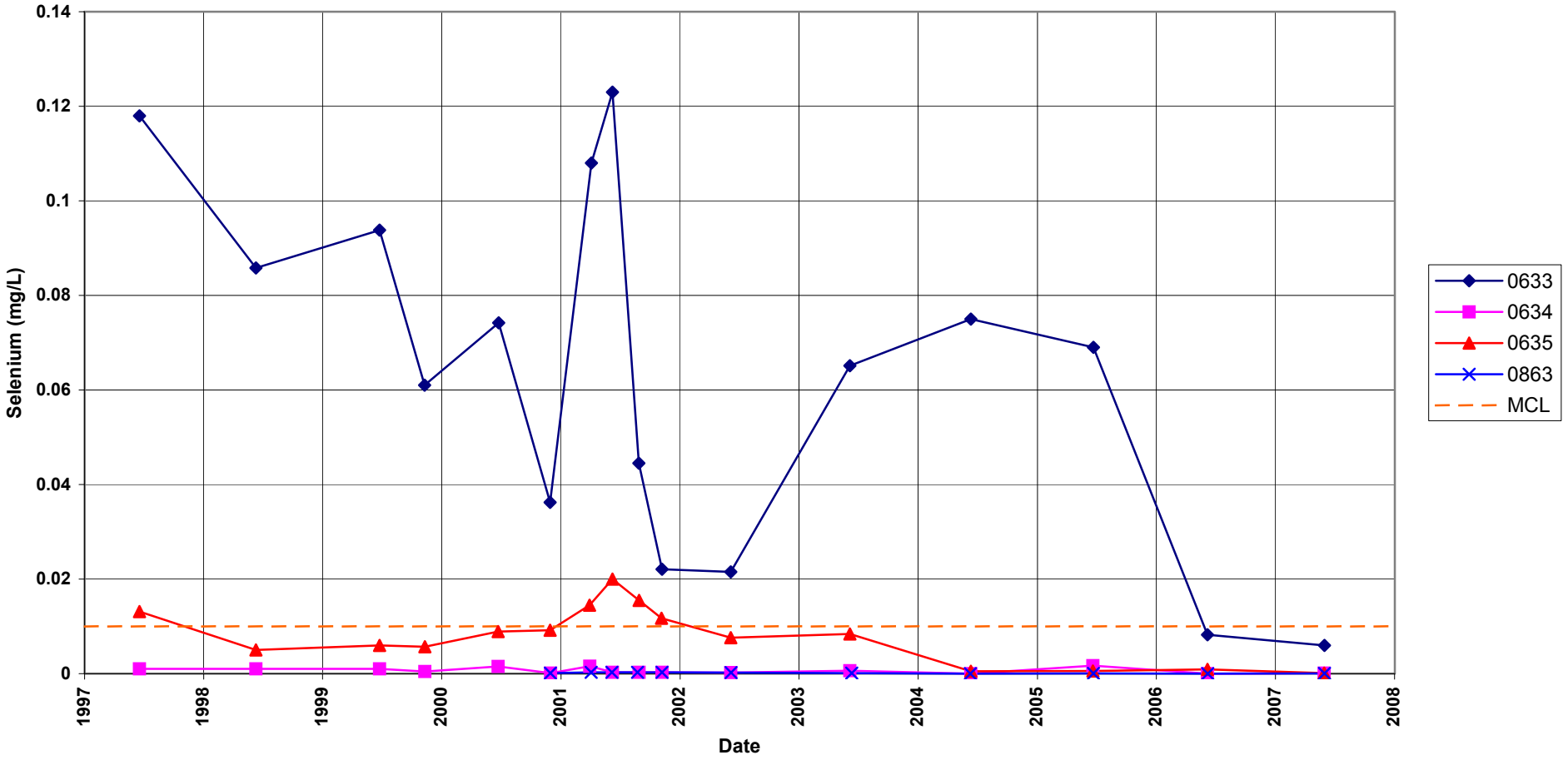
Durango Mill Tailings Processing Site
Molybdenum Concentration
Maximum Contaminant Level = 0.1 mg/L



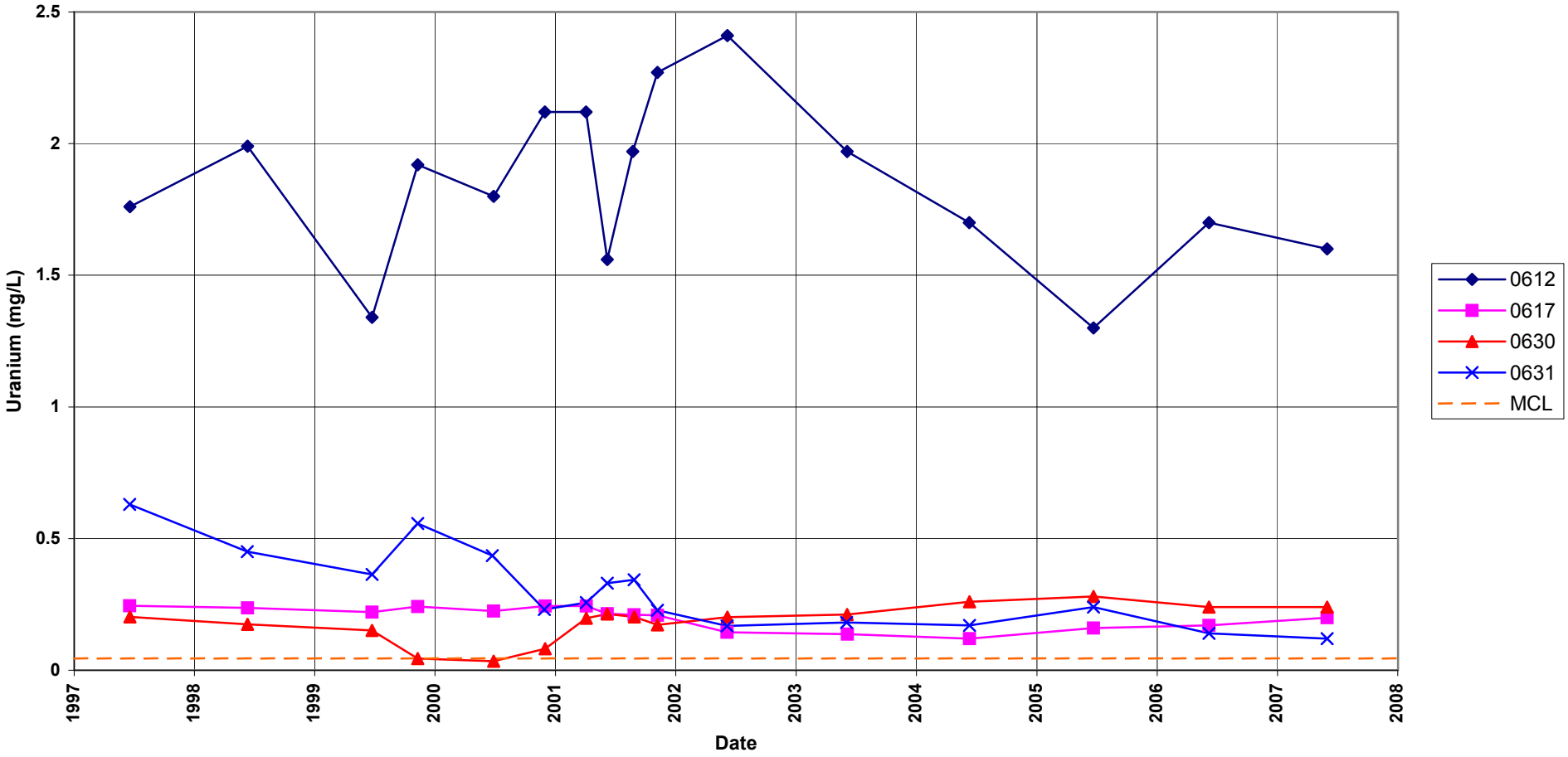
Durango Mill Tailings Processing Site
Selenium Concentration
Maximum Contaminant Level = 0.01 mg/L



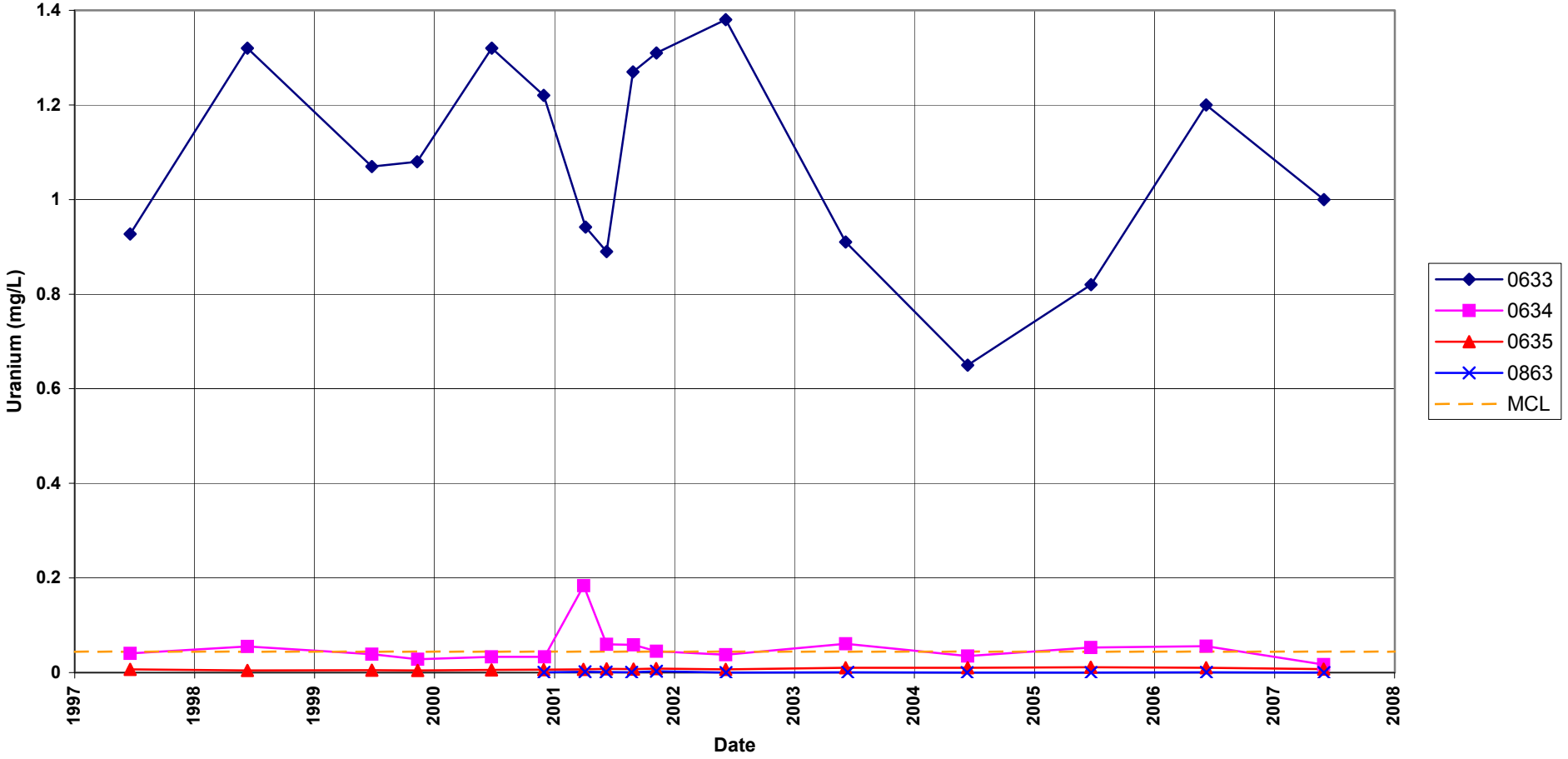
Durango Mill Tailings Processing Site
Selenium Concentration
Maximum Contaminant Level = 0.01 mg/L



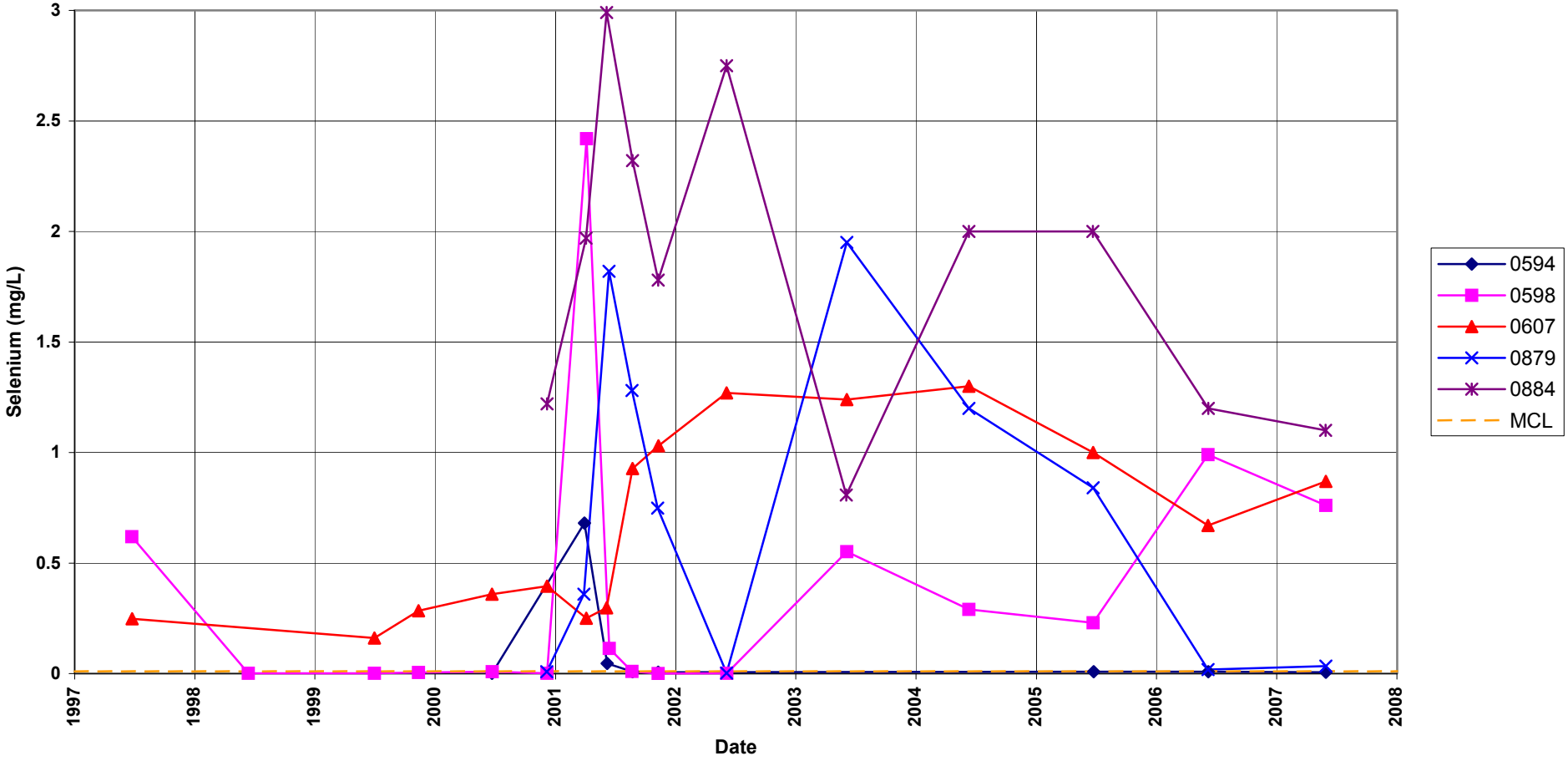
Durango Mill Tailings Processing Site
Uranium Concentration
Maximum Contaminant Level = 0.044 mg/L



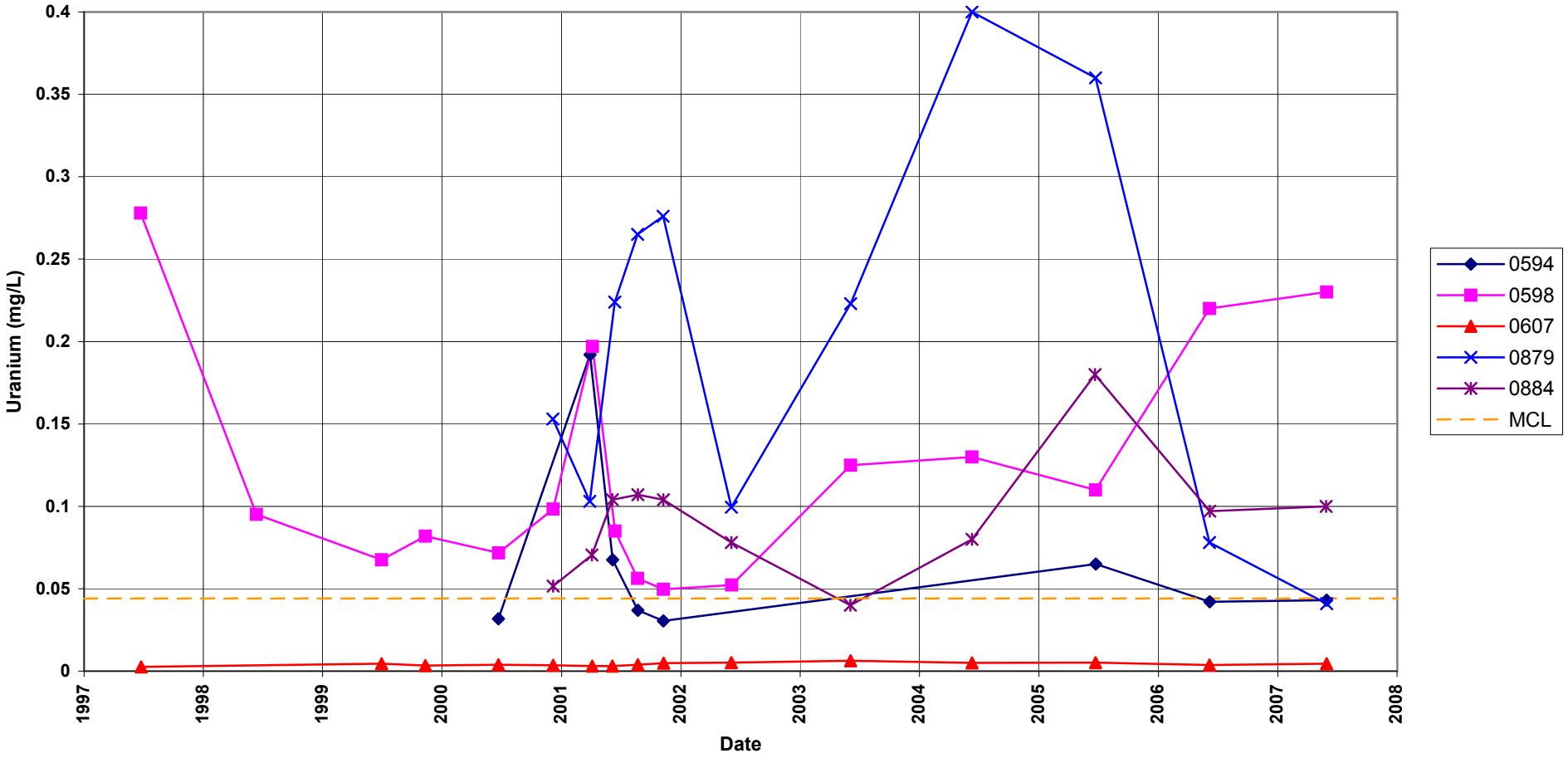
Durango Mill Tailings Processing Site
Uranium Concentration
Maximum Contaminant Level = 0.044 mg/L



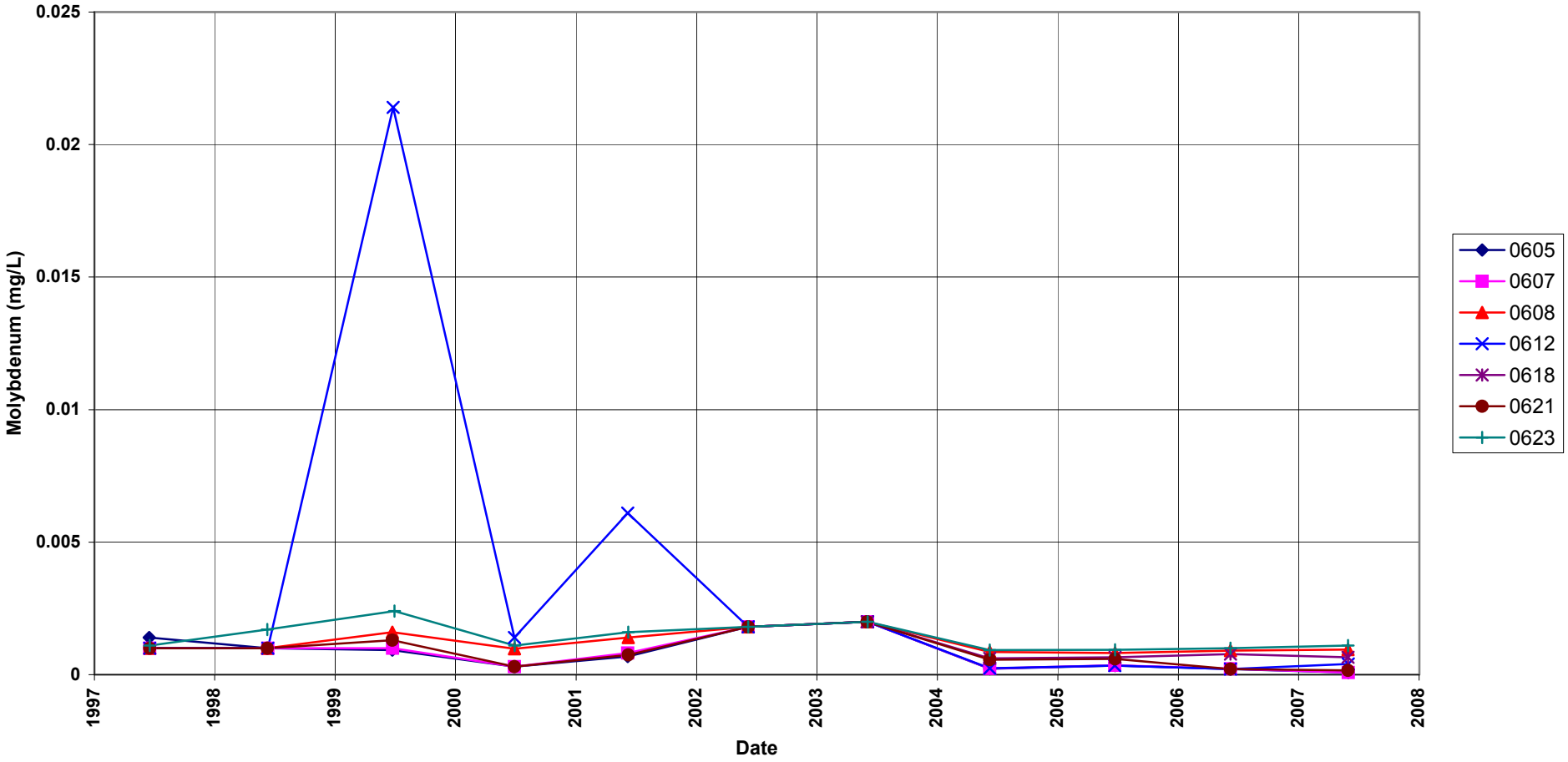
Durango Raffinate Pond Processing Site
Selenium Concentration
Maximum Contaminant Level = 0.01 mg/L



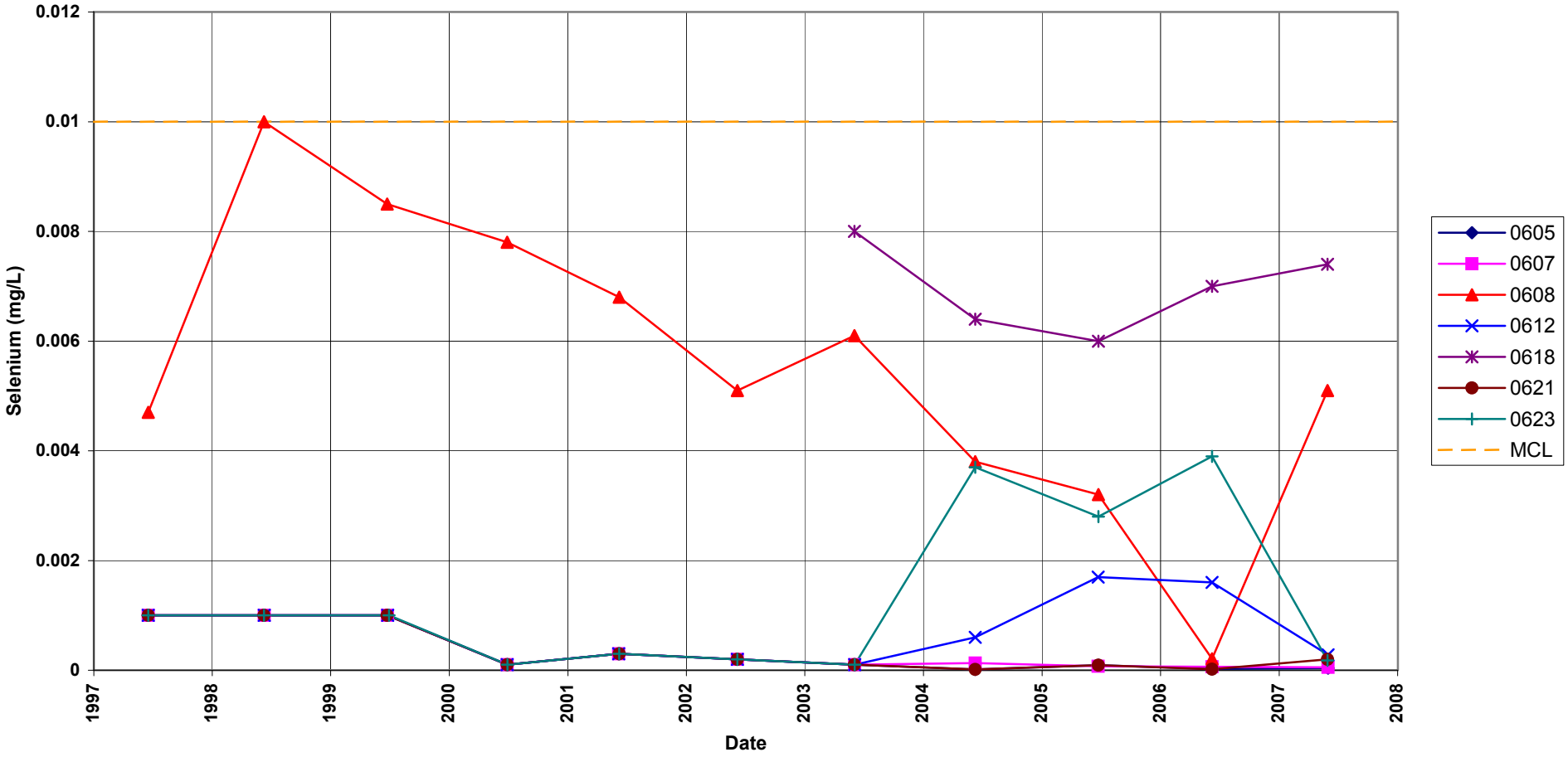
Durango Raffinate Pond Processing Site
Uranium Concentration
Maximum Contaminant Level = 0.044 mg/L



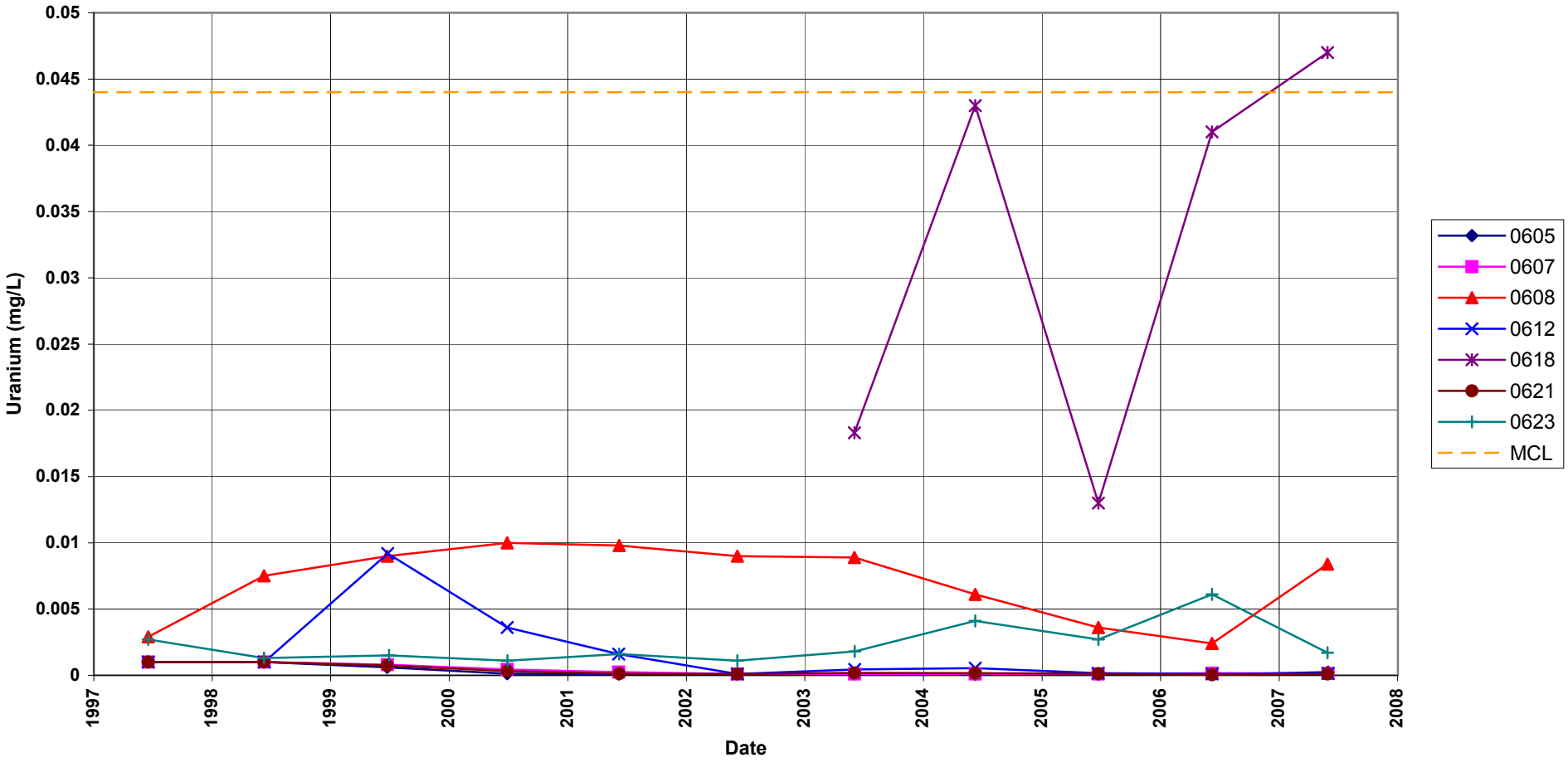
Durango Disposal Site
Molybdenum Concentration
Maximum Contaminant Level = 0.1 mg/L



Durango Disposal Site
Selenium Concentration
Maximum Contaminant Level = 0.01 mg/L



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



Attachment 3
Sampling and Analysis Work Order

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Stoller

established 1959

Task Order ST07-102
Control Number 1000-T07-0832

April 30, 2007

Joseph Desormeau
Program Manager
U.S. Department of Energy
Office of Legacy Management
2597 B ¾ Road
Grand Junction, CO 81503

SUBJECT: Contract No. DE-AC01-02GJ79491, Stoller
May 2007 Environmental Sampling at Durango, Colorado, Processing and Disposal Sites

Reference: FY 2007 LM Task Order No. ST07-102-05

Dear Mr. Desormeau:

The purpose of this letter is to inform you of the upcoming sampling at Durango, Colorado. Enclosed are the maps and tables specifying sample locations and analytes for monitoring at the Durango, Colorado, processing and disposal sites. Water quality data will be collected from monitor wells and surface water locations at these sites as part of the routine environmental sampling currently scheduled to begin the week of May 29, 2007.

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

Monitor Wells (filtered)*

DUR01 Mill Site

612 Al/Km	630 Al/Km	631 Al/Km	633 Km	634 Km	635 Km	863 Al
617 Al						

DUR02 Raffinate Pond

594 Mf	598 Mf/Pl	607 Al	879 Mf	884 Al

DUR03 Bodo Canyon

605 Cf	607 Cf	608 Al	612 Km	618 Al	621 Cf	623 Al

*NOTE: Al = Alluvium; Cf = Cliff House Formation; Km = Mancos Shale; Mf = Menefee Formation; Pl = Point Lookout Formation

Surface Locations (filtered)

DUR01

584	586	652	691

DUR02

588	654	656

QA/QC samples will be collected as directed in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*. Access agreements are being reviewed and are expected to be complete by the beginning of fieldwork.

If you have any questions, please call me at extension 6588 or Dave Miller at extension 6652.

Sincerely,

Clay Carpenter
Project Manager

CC/lcg/mat
Enclosures (3)

cc: C. I. Bahrke, Stoller
S. E. Donivan, Stoller (e)
L. C. Goodknight, Stoller (e)
D. E. Miller, Stoller (e)
EDD Delivery (e)

cc w/o enclosures:
Correspondence Control File (Thru C. Weston)

Constituent Sampling Breakdown For Individual Sites

Site	Durango	
Analyte	Ground Water	Surface Water
Approx. No. Samples/yr	20	7
Field Measurements		
Alkalinity	X	X
Dissolved Oxygen		
Redox Potential	X	X
pH	X	X
Specific Conductance	X	X
Turbidity	X	
Temperature	X	X
Laboratory Measurements		
Aluminum		
Ammonia as N (NH3-N)		
Antimony		
Arsenic		
Beryllium		
Bromide		
Cadmium	612 & 863 only	X
Calcium	DUR03 only	
Chloride	DUR03 only	
Chromium		
Cobalt		
Copper		
Fluoride		
Iron	DUR03 only	
Lead		
Lead-210		
Magnesium	DUR03 only	
Manganese	All Mill Tailings Area and Bodo Canyon locations	
Molybdenum	All Mill Tailings Area and Bodo Canyon locations	X
Nickel		
Nickel-63		
Nitrate + Nitrite as N (NO3+NO2)-N		
PCBs		
Phosphate		
Polonium-210		
Potassium	DUR03 only	

Analyte	Ground Water	Surface Water
Radium-226		
Radium-228		
Selenium	X	X
Silica		
Sodium	DUR03 only	
Strontium		
Sulfate	All Mill Tailings Area and Bodo Canyon locations	
Sulfide		
Thallium		
Thorium-230		
Tin		
Total Dissolved Solids	X	
Total Organic Carbon		
Uranium	X	X
Vanadium		
Zinc		
Total No. of Analytes	13	4

Attachment 4
Trip Report

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Stoller
Grand Junction Office
established 1959

Memorandum

Control Number N/A

DATE: June 25, 2007

TO: David E. Miller

FROM: Daniel L. Sellers

SUBJECT: Sampling Trip Report

Site: Durango, CO, Processing and Disposal Sites

Date of Sampling Event: May 29 to May 31, 2007.

Team Members: Dave Miller and Dan Sellers

Number of Locations Sampled: 20 well locations, 7 surface water locations, 2 duplicate samples and 1 equipment blank for a total of 30 samples.

Locations Not Sampled/Reason: None

Location Specific Information:

Ticket Number	Sample Date	Location	Comments	Water Level
NFJ 621	5/29/2007	0652-01	Surface Water	N/A
NFJ 622	5/29/2007	0586-01	Surface Water	N/A
NFJ 623	5/29/2007	0656-02	Surface Water	N/A
NFJ 624	5/29/2007	0588-02	Surface Water	N/A
NFJ 625	5/29/2007	0654-02	Surface Water	N/A
NFA 626	5/29/2007	0884-02	Cat I	16.58
NFA 627	5/30/2007	0594-02	CAT II	16.56
NFA 628	5/30/2007	0598-02	CAT I	16.6
NFA 629	5/30/2007	0879-02	CAT I Rusty colored water. Needs developed.	11.10
NFA 630	5/30/2007	0607-02	CAT II	51.09
NFA 631	5/30/2007	0608-03	CAT I	31.7
NFA 632	5/30/2007	0621-03	CAT I	48.81
NFA 633	5/30/2007	0618-03	CAT I	33.8
NFA 634	5/30/2007	0623-03	CAT II	33.47
NFA 635	5/30/2007	0635-01	CAT I	13.03
NFA 637	5/30/2007	0634-01	CAT II	13.65
NFA 638	5/31/2007	0612-03	CAT II	78.07
NFA 639	5/31/2007	0605-03	CAT I	38.70
NFA 640	5/31/2007	0607-03	CAT I	38.85
NFA 641	5/31/2007	0633-01	CAT I	10.41
NFA 642	5/31/2007	0631-01	CAT I	7.63

Ticket Number	Sample Date	Location	Comments	Water Level
NFA 644	5/31/2007	0617-01	CAT I	28.79
NFA 645	5/31/2007	0584-01	Surface Water	N/A
NFA 646	5/31/2007	0630-01	CAT I	32.49
NFA 647	5/31/2007	0691-01	Surface Water	N/A
NFA 648	5/31/2007	0612-01	CAT I	40.24
NFA 649	5/31/2007	0863-01	CAT I	56.23

Field Variance: None

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

False Id	True Id	Sample Type	Associated Matrix	Ticket Number
2348-03	0635-01	Duplicate	GW	NFA 636
2498-01	0631-01	Duplicate	GW	NFA 643
2349-03	N/A	Equipment Blank	DI Water	NFA 650

RIN Number Assigned: All samples were assigned to RIN 07050889.

Sample Shipment: All samples were shipped overnight to Paragon Analytics, Inc., from Grand Junction, on June 1, 2007.

Well Inspection Summary: Well inspections were conducted at all sampled wells; all wells except 0607-02 at the Raffinate pond were in good condition. Well 0607-02 is in a mound of dirt that was left around the well after the surface was excavated. It is above the current surface level (~6.0 ft.) and is leaning.

Equipment: All wells have dedicated tubing and were sampled using the low-flow procedure. At 14 locations dedicated bladder pumps were used to collect water and at the remaining 6 well locations a peristaltic pump was used to collect water.

Water Level Measurements: Water levels were collected in all sampled wells.

Institutional Controls: All gates were appropriately closed and locked during the sampling event.

Fences, Gates, Locks: All were in good condition.
Signs: No missing signs but some were vandalized.
Trespassing/Site Disturbances: N/A

Site Issues:

Disposal Cell/Drainage Structure Integrity: N/A
Vegetation/Noxious Weed Concerns: N/A
Maintenance Requirements: Well 0607-02 needs to be secured and modified to the

current surface level. Well 0879-02 needs to be re-developed.

At the Bodo Canyon site (Disposal site) construction needs to be completed near where the pond is located so that trucks can be driven to five well locations and be able to safely turn around.

Corrective Action Taken: None.

(DLS/lcg)

cc: J. Desormeau, DOE (e)
C. I. Bahrke, Stoller (e)
S. E. Donivan, Stoller (e)
EDD Delivery (e)

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