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2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

No 25297
CHAIN-OF-CUSTODY

CLIENT: Battelle
ADDRESS: 505 King Ave, Columbus, OH 43201
PHONE: 614-424-3893 FAX:
DATA REPORTED TO: Chris Gardner - gardnerc@battelle.org
ADDITIONAL REPORT COPIES TO:

DATE: 8/4/2009 PAGE 1 OF 1
PO #: 225730 DHL WORK ORDER #: 0908029
PROJECT LOCATION OR NAME: East Bend
CLIENT PROJECT #: COLLECTOR: Chris Gardner

Authorize 5% surcharge for TRRP report? ☐ Yes ☐ No		S=SOIL W=WATER A=AIR		P=PAINT SL=SLUDGE OT=OTHER				PRESERVATION		ANALYSES																				FIELD NOTES			
										BTX ☐ MIBK ☐ TPH 418 ☐ TPH 1005 ☐ TPH 1006 ☐ GASOLINE MOD 8015 ☐ DIESEL MOD 8016 ☐ VOC 8280 ☐ SVOC 8270 ☐ PAH 8270 ☐ 8081 PESTICIDES ☐ 8082 PESTS ☐ TOLP METALS (PCRA) ☐ HOLDPAH ☐ TOLP METALS (PCRA) ☐ HERB ☐ SEMI-VOC ☐ LEAD ☐ TOTAL ☐ DIW 2008 ☐ TOLP ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ PH ☐ HEXAVALENT CHROMIUM ☐ CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐ DENSITY ☐																							
Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO ₃	H ₂ SO ₄ ☐ NaOH ☐	ICE	UNPRESERVED																					Note: sample was not preserved with acid, but pH ~ 4, presumably for HCl. Please filter metals and Si with 0.45µm. See attached sheet for dissolved metals list. This is a high-TDS brackish GW sample.	
Swab 57	01	7/31/09	1730	W	16 plastic	2				X																							
TOTAL																																	
RELINQUISHED BY: (Signature) <u>[Signature]</u>		DATE/TIME <u>8/4/09 1500</u>		RECEIVED BY: (Signature) <u>[Signature]</u>		TURN AROUND TIME		LABORATORY USE ONLY:																									
RELINQUISHED BY: (Signature) <u>[Signature]</u>		DATE/TIME <u>8/5/09</u>		RECEIVED BY: (Signature) <u>[Signature]</u>		RUSH ☐ CALL FIRST		RECEIVING TEMP: <u>5.7</u> THERM #: <u>57</u>																									
RELINQUISHED BY: (Signature) <u>[Signature]</u>		DATE/TIME <u>8/5/09 12:40</u>		RECEIVED BY: (Signature) <u>[Signature]</u>		1 DAY ☐ CALL FIRST		CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED																									
						2 DAY ☐		☐ CARRIER BILL # <u>[Signature]</u>																									
						NORMAL ☒		☐ APC DELIVERY																									
						OTHER ☐		☐ HAND DELIVERED																									
☐ DHL DISPOSAL @ \$5.00 each ☐ Return																																	

Sample Receipt Checklist

Client Name **Battelle**Date Received: **8/5/2009**Work Order Number **0908029**Received by **JB**

Checklist completed by:


Signature**8/5/09**
Date

Reviewed by

SS **8/5/9**
Initials DateCarrier name: **FedEx 1day**

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	5.7 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Adjusted? _____ Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

CLIENT: Battelle
Project: East Bend
Lab Order: 0908029

CASE NARRATIVE

The sample was analyzed using the methods outlined in the following references:

Method SW6020 - Dissolved Metals - ICP/MS (0.45μ)
Method M4500-Si D - Dissolved Silica
Method E300 - Anions by IC method - Water
Method M2320 B - Alkalinity
Method M2710F - Density of a Liquid (Parameter not NELAC Certified)
Method M2540C - Total Dissolved Solids
Method M4500-H+ B - pH

LOG IN

One sample was received and logged-in on 8/5/2009. The sample arrived in good condition and was properly packaged.

DISSOLVED METALS ANALYSIS

For Dissolved Metals Analysis, Sodium was detected above the reporting limit for the Method Blank (MB-36395). The associated sample showed Sodium at greater than ten times the concentration detected in the method blank. All other Batch QC passed for Sodium. No further corrective actions were taken.

For Dissolved Metals Analysis, the recoveries of the Matrix Spike and Matrix Spike Duplicate (0908042-01 MS/MSD) were below the control limits for Calcium and Strontium. These were flagged accordingly in the enclosed QC Summary Report. The LCS-36395 was within control limits for these analytes. The reference sample selected for the MS/MSD was not from this work order. No further corrective actions were taken.

For Trace Metals Analysis, the RPDs for the Serial Dilution (0908042-01 SD) were above the control limits for Calcium and Boron. These were flagged accordingly in the enclosed QC Summary Report. The PDS was within control limits for these analytes. The reference sample selected for this SD/PDS was not from this work order. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions Analysis, Sample Swab 57 was not analyzed at a lower dilution due to the concentration of Chloride present in the sample.

CLIENT: Battelle
Project: East Bend
Lab Order: 0908029

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recv'd
0908029-01	Swab 57		07/31/09 05:30 PM	08/05/09

CLIENT: Battelle
Project: East Bend
Lab Order: 0908029

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0908029-01A	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
	Swab 57	07/31/09 05:30 PM	Aqueous	SW3005A	Aq Prep Metals: Dissolved	08/07/09 08:47 AM	36395
0908029-01C	Swab 57	07/31/09 05:30 PM	Aqueous	E300	Anion Preparation	08/06/09 08:30 AM	36365
	Swab 57	07/31/09 05:30 PM	Aqueous	E300	Anion Preparation	08/06/09 08:30 AM	36365
	Swab 57	07/31/09 05:30 PM	Aqueous	E300	Anion Preparation	08/06/09 08:30 AM	36365
	Swab 57	07/31/09 05:30 PM	Aqueous	M2320 B	Alkalinity Preparation	08/06/09 02:00 PM	36391
	Swab 57	07/31/09 05:30 PM	Aqueous	M2710F	Density Preparation	08/07/09 01:40 PM	36412
	Swab 57	07/31/09 05:30 PM	Aqueous	M4500-H+ B	pH Preparation	08/06/09 01:20 PM	36388
	Swab 57	07/31/09 05:30 PM	Aqueous	E370.1	Silica Prep	08/07/09 11:00 AM	36407
	Swab 57	07/31/09 05:30 PM	Aqueous	M2540C	TDS Preparation	08/06/09 10:00 AM	36376

CLIENT: Battelle
 Project: East Bend
 Lab Order: 0908029

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0908029-01A	Swab 57	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	36395	5000	08/11/09 12:41 AM	ICP-MS3_090810A
	Swab 57	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	36395	1000	08/11/09 12:46 AM	ICP-MS3_090810A
	Swab 57	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	36395	100	08/11/09 05:44 AM	ICP-MS3_090810A
	Swab 57	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	36395	10	08/11/09 05:49 AM	ICP-MS3_090810A
	Swab 57	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	36395	100	08/11/09 12:25 PM	ICP-MS3_090811A
	Swab 57	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	36395	5000	08/12/09 12:06 PM	ICP-MS3_090812A
	Swab 57	Aqueous	SW6020	Dissolved Metals-ICPMS (0.45µ)	36395	100	08/12/09 12:11 PM	ICP-MS3_090812A
	Swab 57	Aqueous	M2320 B	Alkalinity	36391	1	08/06/09 02:47 PM	TITRATOR_090806B
0908029-01C	Swab 57	Aqueous	E300	Anions by IC method - Water	36365	100	08/06/09 12:42 PM	IC_090806A
	Swab 57	Aqueous	E300	Anions by IC method - Water	36365	5000	08/06/09 12:57 PM	IC_090806A
	Swab 57	Aqueous	E300	Anions by IC method - Water	36365	5000	08/12/09 05:59 PM	IC_090812B
	Swab 57	Aqueous	M2710F	Density of a Liquid	36412	1	08/07/09	WC_090807A
	Swab 57	Aqueous	M4500-Si D	Dissolved Silica	36407	10	08/07/09 12:30 PM	UV/VIS_2_090807A
	Swab 57	Aqueous	M4500-H+ B	pH	36388	1	08/06/09 01:45 PM	TITRATOR_090806A
	Swab 57	Aqueous	M2540C	Total Dissolved Solids	36376	1	08/06/09 10:15 AM	WC_090806B

CLIENT: Battelle
Project: East Bend
Project No:
Lab Order: 0908029

Client Sample ID: Swab 57
Lab ID: 0908029-01
Collection Date: 07/31/09 05:30 PM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Dissolved Metals-ICPMS (0.45µ)		SW6020					Analyst: CZ
Aluminum	6.33	1.00	3.00		mg/L	100	08/11/09 05:44 AM
Barium	0.434	0.0300	0.100		mg/L	10	08/11/09 05:49 AM
Boron	7.24	1.00	3.00		mg/L	100	08/11/09 05:44 AM
Calcium	18700	500	1500		mg/L	5000	08/12/09 12:06 PM
Iron	84.3	5.00	15.0		mg/L	100	08/11/09 05:44 AM
Lithium	20.1	0.200	0.600		mg/L	100	08/11/09 12:25 PM
Magnesium	2370	100	300		mg/L	1000	08/11/09 12:46 AM
Manganese	19.1	0.300	1.00		mg/L	100	08/11/09 05:44 AM
Potassium	922	100	300		mg/L	1000	08/11/09 12:46 AM
Sodium	36900	500	1500		mg/L	5000	08/12/09 12:06 PM
Strontium	434	3.00	10.0		mg/L	1000	08/11/09 12:46 AM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	529	30.0	100		mg/L	100	08/06/09 12:42 PM
Chloride	118000	1500	5000		mg/L	5000	08/12/09 05:59 PM
Fluoride	ND	10.0	40.0		mg/L	100	08/06/09 12:42 PM
Sulfate	694	100	300		mg/L	100	08/06/09 12:42 PM
Alkalinity		M2320 B					Analyst: JBC
Alkalinity, Bicarbonate (As CaCO ₃)	ND	10.0	20.0		mg/L	1	08/06/09 02:47 PM
Alkalinity, Carbonate (As CaCO ₃)	ND	10.0	20.0		mg/L	1	08/06/09 02:47 PM
Alkalinity, Hydroxide (As CaCO ₃)	ND	10.0	20.0		mg/L	1	08/06/09 02:47 PM
Alkalinity, Total (As CaCO ₃)	ND	10.0	20.0		mg/L	1	08/06/09 02:47 PM
Density of a Liquid		M2710F					Analyst: JBC
Density	1.11	0	0	N	SI	1	08/07/09
pH		M4500-H+ B					Analyst: JBC
pH	1.46	0	0		pH Units	1	08/06/09 01:45 PM
Dissolved Silica		M4500-Si D					Analyst: JBC
Silica, Dissolved (as SiO ₂)	47.3	10.0	10.0		mg/L	10	08/07/09 12:30 PM
Total Dissolved Solids		M2540C					Analyst: AAD
Total Dissolved Solids (Residue, Filterable)	203000	10.0	10.0		mg/L	1	08/06/09 10:15 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
	B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
	C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
	DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
	E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
			S	Spike Recovery outside control limits

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT**RunID: ICP-MS3_090810A**

Sample ID:	MB-36395	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	MBLK	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 12:05 AM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		ND	0.0300								
Barium		ND	0.0100								
Boron		ND	0.0300								
Calcium		ND	0.300								
Iron		ND	0.150								
Magnesium		ND	0.300								
Manganese		ND	0.0100								
Potassium		ND	0.300								
Sodium		0.125	0.300								
Strontium		ND	0.0100								

Sample ID:	Filter Blank-36395	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	MBLK	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 12:10 AM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		ND	0.0300								
Barium		ND	0.0100								
Boron		ND	0.0300								
Calcium		ND	0.300								
Iron		ND	0.150								
Magnesium		ND	0.300								
Manganese		ND	0.0100								
Potassium		ND	0.300								
Sodium		ND	0.300								
Strontium		ND	0.0100								

Sample ID:	LCS-36395	Batch ID:	36395			TestNo:	SW6020		Units:	mg/L	
SampType:	LCS	Run ID:	ICP-MS3_090810A			Analysis Date:	08/11/09 12:31 AM		Prep Date:	08/07/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		4.95	0.0300	5.00	0	99.0	80	120			
Barium		0.198	0.0100	0.200	0	98.8	80	120			
Boron		0.181	0.0300	0.200	0	90.4	80	120			
Calcium		4.79	0.300	5.00	0	95.8	80	120			
Iron		4.65	0.150	5.00	0	92.9	80	120			
Magnesium		4.87	0.300	5.00	0	97.4	80	120			
Manganese		0.192	0.0100	0.200	0	96.1	80	120			
Potassium		4.90	0.300	5.00	0	98.1	80	120			
Sodium		4.98	0.300	5.00	0	99.6	80	120			
Strontium		0.205	0.0100	0.200	0	102	80	120			

Sample ID:	LCSD-36395	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 12:36 AM	Prep Date:	08/07/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum	4.95	0.0300	5.00	0	99.0	80	120	0.060	15	
Barium	0.198	0.0100	0.200	0	99.0	80	120	0.152	15	

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT**RunID: ICP-MS3_090810A**

Boron	0.187	0.0300	0.200	0	93.7	80	120	3.53	15
Calcium	4.90	0.300	5.00	0	98.0	80	120	2.23	15
Iron	4.66	0.150	5.00	0	93.1	80	120	0.237	15
Magnesium	4.95	0.300	5.00	0	99.0	80	120	1.65	15
Manganese	0.194	0.0100	0.200	0	97.0	80	120	0.984	15
Potassium	4.96	0.300	5.00	0	99.3	80	120	1.20	15
Sodium	5.00	0.300	5.00	0	100	80	120	0.381	15
Strontium	0.205	0.0100	0.200	0	102	80	120	0.097	15

Sample ID:	0908042-01B SD	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 01:27 AM	Prep Date:	08/07/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	59.4	75.0	0	68.8				14.6	10	R
Magnesium	75.4	75.0	0	79.6				5.32	10	
Potassium	0	75.0	0	15.2				0	10	
Sodium	162	75.0	0	162				0.123	10	
Strontium	4.28	2.50	0	4.50				5.09	10	

Sample ID:	0908042-01B PDS	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 01:32 AM	Prep Date:	08/07/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	305	15.0	250	68.8	94.4	75	125			
Magnesium	324	15.0	250	79.6	97.8	75	125			
Potassium	256	15.0	250	15.2	96.3	75	125			
Sodium	409	15.0	250	162	98.6	75	125			
Strontium	14.4	0.500	10.0	4.50	99.3	75	125			

Sample ID:	0908042-01B MS	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 01:37 AM	Prep Date:	08/07/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	70.7	15.0	5.00	68.8	38.0	80	120			S
Magnesium	84.4	15.0	5.00	79.6	96.0	80	120			
Potassium	20.2	15.0	5.00	15.2	99.1	80	120			
Sodium	167	15.0	5.00	162	85.0	80	120			
Strontium	4.60	0.500	0.200	4.50	51.8	80	120			S

Sample ID:	0908042-01B MSD	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 01:43 AM	Prep Date:	08/07/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	72.7	15.0	5.00	68.8	78.0	80	120	2.79	15	S
Magnesium	84.9	15.0	5.00	79.6	107	80	120	0.650	15	
Potassium	19.9	15.0	5.00	15.2	94.2	80	120	1.22	15	
Sodium	167	15.0	5.00	162	100	80	120	0.449	15	
Strontium	4.64	0.500	0.200	4.50	71.2	80	120	0.843	15	S

Sample ID:	0908042-01B SD	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 02:24 AM	Prep Date:	08/07/09			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_090810A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum	0	0.150	0	0				0	10	
Barium	0.187	0.0500	0	0.190				1.57	10	
Iron	1.08	0.750	0	1.11				3.38	10	
Manganese	0.336	0.0500	0	0.317				5.80	10	

Sample ID:	0908042-01B PDS	Batch ID:	36395			TestNo:	SW6020		Units:	mg/L	
SampType:	PDS	Run ID:	ICP-MS3_090810A			Analysis Date:	08/11/09 02:29 AM		Prep Date:	08/07/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		4.74	0.0300	5.00	0	94.9	75	125			
Barium		0.387	0.0100	0.200	0.190	98.5	75	125			
Iron		5.95	0.150	5.00	1.11	96.8	75	125			
Manganese		0.486	0.0100	0.200	0.317	84.4	75	125			

Sample ID:	0908042-01B MS	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 02:34 AM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		4.85	0.0300	5.00	0	97.1	80	120			
Barium		0.395	0.0100	0.200	0.190	103	80	120			
Iron		5.98	0.150	5.00	1.11	97.4	80	120			
Manganese		0.501	0.0100	0.200	0.317	92.0	80	120			

Sample ID:	0908042-01B MSD	Batch ID:	36395			TestNo:	SW6020		Units:	mg/L	
SampType:	MSD	Run ID:	ICP-MS3_090810A			Analysis Date:	08/11/09 02:39 AM		Prep Date:	08/07/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		4.83	0.0300	5.00	0	96.6	80	120	0.516	15	
Barium		0.396	0.0100	0.200	0.190	103	80	120	0.228	15	
Iron		5.95	0.150	5.00	1.11	96.7	80	120	0.620	15	
Manganese		0.501	0.0100	0.200	0.317	92.0	80	120	0	15	

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_090810A

Sample ID:	ICV2-090810	Batch ID:	R44747		TestNo:		SW6020		Units: mg/L		
SampType:	ICV	Run ID:	ICP-MS3_090810A		Analysis Date:		08/10/09 11:29 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		2.52	0.0300	2.50	0	101	90	110			
Barium		0.102	0.0100	0.100	0	102	90	110			
Boron		0.0902	0.0300	0.100	0	90.2	90	110			
Calcium		2.42	0.300	2.50	0	96.8	90	110			
Iron		2.71	0.150	2.50	0	109	90	110			
Magnesium		2.57	0.300	2.50	0	103	90	110			
Manganese		0.102	0.0100	0.100	0	102	90	110			
Potassium		2.50	0.300	2.50	0	100	90	110			
Sodium		2.58	0.300	2.50	0	103	90	110			
Strontium		0.100	0.0100	0.100	0	100	90	110			

Sample ID:	CCV9-090810	Batch ID:	R44747		TestNo:	SW6020			Units:	mg/L	
SampType:	CCV	Run ID:	ICP-MS3_090810A		Analysis Date:	08/11/09 12:51 AM			Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		4.98	0.0300	5.00	0	99.6	90	110			
Barium		0.199	0.0100	0.200	0	99.4	90	110			
Boron		0.195	0.0300	0.200	0	97.6	90	110			
Calcium		4.94	0.300	5.00	0	98.8	90	110			
Iron		5.15	0.150	5.00	0	103	90	110			
Magnesium		5.02	0.300	5.00	0	100	90	110			
Manganese		0.198	0.0100	0.200	0	98.8	90	110			
Potassium		4.94	0.300	5.00	0	98.9	90	110			
Sodium		5.11	0.300	5.00	0	102	90	110			
Strontium		0.202	0.0100	0.200	0	101	90	110			

Sample ID:	CCV10-090810	Batch ID:	R44747		TestNo:		SW6020		Units: mg/L		
SampType:	CCV	Run ID:	ICP-MS3_090810A		Analysis Date:		08/11/09 01:48 AM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum		5.01	0.0300	5.00	0	100	90	110			
Barium		0.201	0.0100	0.200	0	100	90	110			
Calcium		4.92	0.300	5.00	0	98.4	90	110			
Iron		5.18	0.150	5.00	0	104	90	110			
Magnesium		5.02	0.300	5.00	0	100	90	110			
Manganese		0.197	0.0100	0.200	0	98.4	90	110			
Potassium		4.97	0.300	5.00	0	99.3	90	110			
Sodium		5.08	0.300	5.00	0	102	90	110			
Strontium		0.202	0.0100	0.200	0	101	90	110			

Sample ID:	CCV11-090810	Batch ID:	R44747	TestNo:	SW6020	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 03:15 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum	4.92	0.0300	5.00	0	98.4	90	110			
Barium	0.205	0.0100	0.200	0	102	90	110			
Iron	5.01	0.150	5.00	0	100	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_090810A

Manganese	0.197	0.0100	0.200	0	98.7	90	110
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Sample ID:	CCV13-090810	Batch ID:	R44747	TestNo:	SW6020	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 05:13 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum	4.88	0.0300	5.00	0	97.6	90	110			
Barium	0.203	0.0100	0.200	0	102	90	110			
Boron	0.185	0.0300	0.200	0	92.3	90	110			
Iron	5.00	0.150	5.00	0	100	90	110			
Manganese	0.193	0.0100	0.200	0	96.6	90	110			

Sample ID:	CCV14-090810	Batch ID:	R44747	TestNo:	SW6020	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_090810A	Analysis Date:	08/11/09 06:04 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Aluminum	5.10	0.0300	5.00	0	102	90	110			
Barium	0.200	0.0100	0.200	0	100	90	110			
Boron	0.207	0.0300	0.200	0	103	90	110			
Iron	5.13	0.150	5.00	0	103	90	110			
Manganese	0.196	0.0100	0.200	0	97.9	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_090811A

Sample ID:	MB-36395	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	MBLK	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 11:50 AM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Lithium		ND	0.00600								
Sample ID:	Filter Blank-36395	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	MBLK	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 11:55 AM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Lithium		ND	0.00600								
Sample ID:	LCS-36395	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	LCS	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 12:05 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Lithium		0.215	0.00600	0.200	0	108	80	120			
Sample ID:	LCSD-36395	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 12:10 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Lithium		0.216	0.00600	0.200	0	108	80	120	0.324	15	
Sample ID:	0908042-01B SD	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	SD	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 12:56 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Boron		0.810	1.50	0	0.692				15.8	10	R
Lithium		0.177	0.300	0	0.168				5.09	10	
Sample ID:	0908042-01B PDS	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 01:01 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Boron		2.44	0.300	2.00	0.692	87.2	75	125			
Lithium		2.10	0.0600	2.00	0.168	96.7	75	125			
Sample ID:	0908042-01B MS	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 01:07 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Boron		0.892	0.300	0.200	0.692	100	80	120			
Lithium		0.360	0.0600	0.200	0.168	96.0	80	120			
Sample ID:	0908042-01B MSD	Batch ID:	36395	TestNo:	SW6020	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS3_090811A	Analysis Date:	08/11/09 01:12 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Boron		0.889	0.300	0.200	0.692	98.9	80	120	0.258	15	
Lithium		0.358	0.0600	0.200	0.168	94.6	80	120	0.780	15	

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_090811A

Sample ID:	ICV1-090811	Batch ID:	R44778			TestNo:	SW6020		Units:	mg/L	
SampType:	ICV	Run ID:	ICP-MS3_090811A			Analysis Date:	08/11/09 11:03 AM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Boron		0.0916	0.0300	0.100	0	91.6	90	110			
Lithium		0.0909	0.00600	0.100	0	90.9	90	110			

Sample ID:	CCV1-090811	Batch ID:	R44778			TestNo:	SW6020		Units:	mg/L	
SampType:	CCV	Run ID:	ICP-MS3_090811A			Analysis Date:	08/11/09 12:31 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Boron		0.200	0.0300	0.200	0	100	90	110			
Lithium		0.205	0.00600	0.200	0	103	90	110			

Sample ID:	CCV2-090811	Batch ID:	R44778			TestNo:	SW6020		Units:	mg/L	
SampType:	CCV	Run ID:	ICP-MS3_090811A			Analysis Date:	08/11/09 01:32 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Boron		0.192	0.0300	0.200	0	95.9	90	110			
Lithium		0.197	0.00600	0.200	0	98.4	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_090812A

Sample ID:	ICV1-090812	Batch ID:	R44806	TestNo:	SW6020	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS3_090812A	Analysis Date:	08/12/09 11:45 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		2.49	0.300	2.50	0	99.5	90	110			
Sodium		2.57	0.300	2.50	0	103	90	110			

Sample ID:	CCV1-090812	Batch ID:	R44806	TestNo:	SW6020	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS3_090812A	Analysis Date:	08/12/09 12:16 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		5.16	0.300	5.00	0	103	90	110			
Sodium		5.08	0.300	5.00	0	102	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: IC_090806A

Sample ID:	LCS-36365	Batch ID:	36365			TestNo:	E300		Units:	mg/L	
SampType:	LCS	Run ID:	IC_090806A			Analysis Date:	08/06/09 09:17 AM		Prep Date:	08/06/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		20.2	1.00	20.00	0	101	90	110			
Chloride		10.3	1.00	10.00	0	103	90	110			
Fluoride		4.12	0.400	4.000	0	103	90	110			
Sulfate		29.9	3.00	30.00	0	99.7	90	110			

Sample ID:	LCSD-36365	Batch ID:	36365			TestNo:	E300		Units:	mg/L		
SampType:	LCSD	Run ID:	IC_090806A			Analysis Date:	08/06/09 09:33 AM		Prep Date:	08/06/09		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual	
Bromide		20.2	1.00	20.00	0	101	90	110	0.276	20		
Chloride		10.3	1.00	10.00	0	103	90	110	0.063	20		
Fluoride		4.11	0.400	4.000	0	103	90	110	0.209	20		
Sulfate		30.0	3.00	30.00	0	100	90	110	0.321	20		

Sample ID:	MB-36365	Batch ID:	36365	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC_090806A	Analysis Date:	08/06/09 09:49 AM	Prep Date:	08/06/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide	ND	1.00								
Chloride	ND	1.00								
Fluoride	ND	0.400								
Sulfate	ND	3.00								

Sample ID:	0908031-02E MS			Batch ID:	36365		TestNo:	E300		Units:	mg/L	
SampType:	MS			Run ID:	IC_090806A		Analysis Date:	08/06/09 11:23 AM		Prep Date:	08/06/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual	
Chloride		41.1	1.00	10.00	30.90	102	90	110				
Sulfate		69.5	3.00	30.00	38.80	102	90	110				

Sample ID:	0908031-02E MSD	Batch ID:	36365	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC_090806A	Analysis Date:	08/06/09 11:39 AM	Prep Date:	08/06/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	41.2	1.00	10.00	30.90	103	90	110	0.188	20	
Sulfate	69.7	3.00	30.00	38.80	103	90	110	0.199	20	

Sample ID:	0908029-01C MS			Batch ID:	36365		TestNo:	E300		Units:	mg/L	
SampType:	MS			Run ID:	IC_090806A		Analysis Date:	08/06/09 01:13 PM		Prep Date:	08/06/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual	
Bromide		2160	100	2000	317.4	92.2	90	110				
Fluoride		363	40.0	400.0	0	90.8	90	110				
Sulfate		3350	300	3000	416.5	97.9	90	110				

Sample ID:	0908029-01C MSD			Batch ID:	36365		TestNo:	E300		Units:	mg/L	
SampType:	MSD			Run ID:	IC_090806A		Analysis Date:	08/06/09 01:29 PM		Prep Date:	08/06/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual	
Bromide		2150	100	2000	317.4	91.6	90	110	0.552	20		

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT**RunID: IC_090806A**

Fluoride	362	40.0	400.0	0	90.5	90	110	0.361	20
Sulfate	3340	300	3000	416.5	97.6	90	110	0.294	20

Qualifiers: B Analyte detected in the associated Method Blank
DF Dilution Factor
J Analyte detected between MDL and RL
MDL Method Detection Limit
ND Not Detected at the Method Detection Limit

R RPD outside accepted control limits
RL Reporting Limit
S Spike Recovery outside control limits
J Analyte detected between SDL and RL
N Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: IC_090806A

Sample ID:	ICV-090806	Batch ID:	R44680			TestNo:	E300		Units:	mg/L	
SampType:	ICV	Run ID:	IC_090806A			Analysis Date:	08/06/09 08:59 AM		Prep Date:	08/06/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		52.7	1.00	50.00	0	105	90	110			
Chloride		26.5	1.00	25.00	0	106	90	110			
Fluoride		10.7	0.400	10.00	0	107	90	110			
Sulfate		78.1	3.00	75.00	0	104	90	110			

Sample ID:	CCV1-090806	Batch ID:	R44680			TestNo:	E300		Units:	mg/L	
SampType:	CCV	Run ID:	IC_090806A			Analysis Date:	08/06/09 11:54 AM		Prep Date:	08/06/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		20.0	1.00	20.00	0	100	90	110			
Chloride		10.2	1.00	10.00	0	102	90	110			
Fluoride		4.00	0.400	4.000	0	99.9	90	110			
Sulfate		29.9	3.00	30.00	0	99.5	90	110			

Sample ID:	CCV2-090806	Batch ID:	R44680			TestNo:	E300		Units:	mg/L	
SampType:	CCV	Run ID:	IC_090806A			Analysis Date:	08/06/09 02:47 PM		Prep Date:	08/06/09	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		20.1	1.00	20.00	0	101	90	110			
Chloride		10.3	1.00	10.00	0	103	90	110			
Fluoride		3.95	0.400	4.000	0	98.7	90	110			
Sulfate		30.0	3.00	30.00	0	99.9	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: IC_090812B

Sample ID:	ICV-090812	Batch ID:	R44816	TestNo:	E300	Units:	mg/L				
SampType:	ICV	Run ID:	IC_090812B	Analysis Date:	08/12/09 09:03 AM	Prep Date:	08/12/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		26.5	1.00	25.00	0	106	90	110			

Sample ID:	CCV-090812	Batch ID:	R44816	TestNo:	E300	Units:	mg/L				
SampType:	CCV	Run ID:	IC_090812B	Analysis Date:	08/12/09 07:02 PM	Prep Date:	08/12/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		10.3	1.00	10.00	0	103	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_090806A

Sample ID:	0908029-01C DUP	Batch ID:	36388	TestNo:	M4500-H+ B	Units:	pH Units				
SampType:	DUP	Run ID:	TITRATOR_090806A	Analysis Date:	08/06/09 01:46 PM	Prep Date:	08/06/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH		1.40	0	0	1.460				4.20	5	

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_090806A

Sample ID:	ICV-090806	Batch ID:	R44689	TestNo:	M4500-H+ B	Units:	pH Units				
SampType:	ICV	Run ID:	TITRATOR_090806A	Analysis Date:	08/06/09 01:44 PM	Prep Date:	08/06/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH		9.89	0	10.00	0	98.9	99	101			

Sample ID:	CCV1-090806	Batch ID:	R44689	TestNo:	M4500-H+ B	Units:	pH Units				
SampType:	CCV	Run ID:	TITRATOR_090806A	Analysis Date:	08/06/09 01:48 PM	Prep Date:	08/06/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH		6.88	0	7.000	0	98.3	97.1	102.9			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_090806B

Sample ID: LCS-36391	Batch ID: 36391	TestNo: M2320 B	Units: mg/L
SampType: LCS	Run ID: TITRATOR_090806B	Analysis Date: 08/06/09 02:44 PM	Prep Date: 08/06/09
Analyte	Result	RL	SPK value
Alkalinity, Total (As CaCO3)	56.7	20.0	50.00
		Ref Val	%REC
		0	113
		LowLimit	HighLimit
		74	129

Sample ID: MB-36391	Batch ID: 36391	TestNo: M2320 B	Units: mg/L
SampType: MBLK	Run ID: TITRATOR_090806B	Analysis Date: 08/06/09 02:46 PM	Prep Date: 08/06/09
Analyte	Result	RL	SPK value
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0	
Alkalinity, Carbonate (As CaCO3)	ND	20.0	
Alkalinity, Hydroxide (As CaCO3)	ND	20.0	
Alkalinity, Total (As CaCO3)	ND	20.0	

Sample ID: 0908031-04E DUP	Batch ID: 36391	TestNo: M2320 B	Units: mg/L
SampType: DUP	Run ID: TITRATOR_090806B	Analysis Date: 08/06/09 03:47 PM	Prep Date: 08/06/09
Analyte	Result	RL	SPK value
Alkalinity, Bicarbonate (As CaCO3)	689	20.0	0
Alkalinity, Carbonate (As CaCO3)	0	20.0	0
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0
Alkalinity, Total (As CaCO3)	689	20.0	0
		Ref Val	%REC
		691.3	
		LowLimit	HighLimit
		%RPD	RPD Limit
		0.290	20

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_090806B

Sample ID:	ICV-090806	Batch ID:	R44697	TestNo:	M2320 B	Units:	mg/L			
SampType:	ICV	Run ID:	TITRATOR_090806B	Analysis Date:	08/06/09 02:41 PM	Prep Date:	08/06/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	15.3	20.0	0							
Alkalinity, Carbonate (As CaCO3)	86.9	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	98	102			

Sample ID:	CCV-090806	Batch ID:	R44697	TestNo:	M2320 B	Units:	mg/L			
SampType:	CCV	Run ID:	TITRATOR_090806B	Analysis Date:	08/06/09 03:52 PM	Prep Date:	08/06/09			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	28.0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	75.2	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	103	20.0	100.0	0	103	90	110			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: UV/VIS_2_090807A

Sample ID: MB-36407	Batch ID: 36407	TestNo: M4500-Si D	Units: mg/L
SampType: MBLK	Run ID: UV/VIS_2_090807A	Analysis Date: 08/07/09 12:30 PM	Prep Date: 08/07/09
Analyte	Result RL SPK value	Ref Val %REC	LowLimit HighLimit %RPD RPD Limit Qual
Silica, Dissolved (as SiO2)	ND 1.00		
Sample ID: LCS-36407	Batch ID: 36407	TestNo: M4500-Si D	Units: mg/L
SampType: LCS	Run ID: UV/VIS_2_090807A	Analysis Date: 08/07/09 12:30 PM	Prep Date: 08/07/09
Analyte	Result RL SPK value	Ref Val %REC	LowLimit HighLimit %RPD RPD Limit Qual
Silica, Dissolved (as SiO2)	27.7 1.00 25.00	0 111	80 120
Sample ID: LCSD-36407	Batch ID: 36407	TestNo: M4500-Si D	Units: mg/L
SampType: LCSD	Run ID: UV/VIS_2_090807A	Analysis Date: 08/07/09 12:30 PM	Prep Date: 08/07/09
Analyte	Result RL SPK value	Ref Val %REC	LowLimit HighLimit %RPD RPD Limit Qual
Silica, Dissolved (as SiO2)	25.9 1.00 25.00	0 103	80 120 6.94 20
Sample ID: 0908029-01C MS	Batch ID: 36407	TestNo: M4500-Si D	Units: mg/L
SampType: MS	Run ID: UV/VIS_2_090807A	Analysis Date: 08/07/09 12:30 PM	Prep Date: 08/07/09
Analyte	Result RL SPK value	Ref Val %REC	LowLimit HighLimit %RPD RPD Limit Qual
Silica, Dissolved (as SiO2)	296 10.0 250.0	47.30 99.4	80 120
Sample ID: 0908029-01C MSD	Batch ID: 36407	TestNo: M4500-Si D	Units: mg/L
SampType: MSD	Run ID: UV/VIS_2_090807A	Analysis Date: 08/07/09 12:30 PM	Prep Date: 08/07/09
Analyte	Result RL SPK value	Ref Val %REC	LowLimit HighLimit %RPD RPD Limit Qual
Silica, Dissolved (as SiO2)	300 10.0 250.0	47.30 101	80 120 1.38 20

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
Work Order: 0908029
Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: UV/VIS_2_090807A

Sample ID:	ICV-090807	Batch ID:	R44713	TestNo:	M4500-Si D	Units:	mg/L				
SampType:	ICV	Run ID:	UV/VIS_2_090807A	Analysis Date:	08/07/09 12:30 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Silica, Dissolved (as SiO2)		52.3	1.00	50.00	0	105	85	115			

Sample ID:	CCV-090807	Batch ID:	R44713	TestNo:	M4500-Si D	Units:	mg/L				
SampType:	CCV	Run ID:	UV/VIS_2_090807A	Analysis Date:	08/07/09 12:30 PM	Prep Date:	08/07/09				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Silica, Dissolved (as SiO2)		27.4	1.00	25.00	0	110	85	115			

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Battelle
 Work Order: 0908029
 Project: East Bend

ANALYTICAL QC SUMMARY REPORT

RunID: WC_090806B

Sample ID:	MB-36376	Batch ID:	36376	TestNo:	M2540C	Units:	mg/L			
SampType:	MBLK	Run ID:	WC_090806B	Analysis Date:	08/06/09 10:15 AM	Prep Date:	08/06/09			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Fi		10.0	10.0							
Sample ID:	LCS-36376	Batch ID:	36376	TestNo:	M2540C	Units:	mg/L			
SampType:	LCS	Run ID:	WC_090806B	Analysis Date:	08/06/09 10:15 AM	Prep Date:	08/06/09			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Fi		747	10.0	745.6	0	100	90	113		
Sample ID:	0907283-01D-DUP	Batch ID:	36376	TestNo:	M2540C	Units:	mg/L			
SampType:	DUP	Run ID:	WC_090806B	Analysis Date:	08/06/09 10:15 AM	Prep Date:	08/06/09			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Total Dissolved Solids (Residue, Fi		16900	10.0	0	16580				2.03	5

Qualifiers:	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified