

APPENDIX E
LABORATORY ANALYTICAL DATA PACKAGES
(APPENDIX ON COMPACT DISK)

WILLIAMS – RIO BLANCO AREA DATA REVIEW SUMMARY

Data Package Number: GEL 222289
 Sample-specific Parameter Review? **Yes**
 Data Reviewer: Liz Kraak
 Peer Reviewer: Geoff Webb

Sampling Event: January 7th, 2009
 Laboratory Performance Parameters? **No**
 Date Completed: 5/11/2009
 Date Completed: 5/12/2009

The table below summarizes the results presented in this data package.

Field ID	Sample Type	Lab ID	Matrix	Analyses					
				Gross Alpha/ Beta (E900.0)	Gamma Spectroscopy (E901.1)	Chlorine-36 (GL-RAD-A-033)	Technetium-99 (DOE/EML/HASL-300, Tc-02-RC M)	Strontium-90 (E905.0)	KPA Total Uranium (ASTM D 5174)
FE-RG-24-13-398-PW-GPTF	SA	222289001	W	X	X	X ^m	X	X ^m	X ^m
FE-RG-13-1-398-PW-GPTF	SA	222289002	W	X	X	X	X	X	X
FE-RG-12-4-398-PW-GPTF	SA	222289003	W	X	X	X ^m	X ^m	X	X
FE-RG-31-8-398-PW-GPTF	SA	222289004	W	X	X	X	X	X	X
FE-RG-24-20-398-PW-GPTF	SA	222289005	W	X	X	X	X	X	X

Matrix: W = Water QC Type: SA = Sample
 X^m = Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD).

The data review was conducted in accordance with the Rulison Sampling and Analysis Plan for Operational and Environmental Radiological Monitoring within a Three-Mile Radius of Project Rulison, Revision 2, March 31, 2008.

General Overall Assessment:

- Data are usable without qualification.
 Data are usable with qualification; some data were qualified as unusable (noted below).

Case Narrative Summary: Except as noted below, any of the issues noted in the laboratory case narrative potentially affecting data quality are addressed in the appropriate sections in the following table.

Review Parameter	Criteria Met?	Comments
<i>Sample-specific Parameters</i>	Complete with "Yes", "No", or "Not Applicable (N/A)".	For each "No" response, list what was out, associated acceptance limits, all qualified data, and bias direction or reference associated table with pertinent details.
COC & Sample Receipt	Yes	The samples were received intact and the cooler temperatures were 5 degrees Celsius (°C) and 6°C upon arrival at the laboratory. Data qualification was not necessary as the cooler temperature was ≤6°C.

Review Parameter	Criteria Met?	Comments
	No	Due to the nature of the sample matrix, samples FE-RG-12-4-398-PW-GPTF, FE-RG-31-8-398-PW-GPTF, and FE-RG-24-20-398-PW-GPTF were received at a pH>2. Therefore, the laboratory added additional HNO ₃ to the sample containers to attempt to bring the final pH to <2 before proceeding with the analysis. Sample integrity was unlikely affected and qualification of data was not considered necessary.
Holding Times	Yes	All holding times were met.
Method Blanks	Yes	No target analytes were reported as detected within the associated method blanks.
Matrix QC <ul style="list-style-type: none"> • MS FE-RG-24-13-398-PW-GPTF (Strontium-90, Chlorine-36, Total Uranium) FE-RG-12-4-398-PW-GPTF (Chlorine-36, Technetium-99) • MS/MSD • LD FE-RG-24-13-398-PW-GPTF (Gamma Spec, Strontium-90, Chlorine-36, Total Uranium) FE-RG-12-4-398-PW-GPTF (Chlorine-36, Technetium-99) 	No	<p>With the exception noted below, the recoveries for the matrix spikes (MS) were within the QAPP acceptance limits of 80-120%.</p> <p>The MS recovery for strontium-90 was below the QAPP acceptance limits with a recovery of 56%. Therefore, the strontium-90 results for all samples were qualified as estimated (UJ MS-L) to reflect the potential low bias.</p> <p>The MS recovery for chlorine-36 was above the QAPP acceptance limits with a recovery of 136%. Data qualification was not necessary as all chlorine-36 results were reported as non-detect.</p> <p>The agreement between parent sample results and the lab duplicate sample results and/or the matrix spike results and the matrix spike duplicate results was evaluated. With the exceptions listed in Table 1, the duplicate error ratio (DER) for the laboratory duplicate pairs met the QC criteria of ≤ 1 for water samples.</p>
Method QC <ul style="list-style-type: none"> • Implied Detection Limits • Sample Specific Chemical Recovery (Chemical Yield) • Laboratory Control Sample 	No	<p>Implied Detection Limits</p> <p>No values for radionuclides were reported as detected with associated uncertainties greater than the reported result.</p> <p>Chemical Yield</p> <p>The sample specific recoveries were within the QAPP acceptance limits of 50-120% for the applicable methods.</p> <p>For the chlorine-36 analyses, all samples reported in this package had high net weights due to natural chlorine interference. The samples were run without the addition of carrier in order to determine the interference. The net weights were adjusted accordingly. This is not considered to affect the usability of the data and no further action was required.</p> <p>Laboratory Control Sample</p> <p>The LCS recoveries were within the QAPP acceptance limits 80-120%. Data qualification was not necessary.</p>
Field QC <ul style="list-style-type: none"> • Field Duplicate N/A • Rinsate Blank N/A 	N/A	A field duplicate was not collected in association with this sampling event.

Review Parameter	Criteria Met?	Comments
Non-detect Results w/ Elevated RLS?	No	<p>Gross Alpha/ Beta The gross alpha results for all samples did not meet the required detection limits due to low sample volume. No more sample volume could be used due to the maximum net weight limit. The nondetect results for these samples will need to be evaluated by the end user with respect to the project objectives.</p> <p>Chlorine-36 The chlorine-36 results for samples FE-RG-24-13-398-PW-GPTF, FE-RG-13-1-398-PW-GPTF , FE-RG-31-8-398-PW-GPTF , and FE-RG-24-20-398-PW-GPTF reported in this data package did not meet the required detection limits due to low sample volume. No more sample volume could be used due to the maximum net weight limit. The nondetect results for these samples will need to be evaluated by the end user with respect to the project objectives.</p>
Total Uncertainty	N/A	The chlorine-36, technetium-99, strontium-90, and total uranium results were reported as non-detect.
Unusable Data	No	<p>Unusable Data With the exception noted below, all data met criteria for the field samples and were usable as qualified.</p> <p>Gamma Spectroscopy Identification of the following isotopes was rejected by the laboratory due to low abundance or high counting uncertainty and the identification was also rejected during data validation:</p> <p>FE-RG-24-13-398-PW-GPTF</p> <ul style="list-style-type: none"> • Actinium-228 • Bismuth-214 • Lead-214 • Radium-228 <p>FE-RG-13-1-398-PW-GPTF</p> <ul style="list-style-type: none"> • Bismuth-214 <p>FE-RG-12-4-398-PW-GPTF</p> <ul style="list-style-type: none"> • Actinium-228 • Bismuth-214 • Lead-214 • Radium-228 <p>FE-RG-24-20-398-PW-GPTF</p> <ul style="list-style-type: none"> • Bismuth-214
Package Completeness	Yes	Analytical data packages were complete.
Other Parameters	Yes	

N/A = Not applicable

Table 1: DER Outliers and Resultant Data Qualification

Sample	Analyte	DER	Qualification
FE-RG-24-13-398-PW-GPTF	Bi-214	1.32	The DER between the parent sample and laboratory duplicate sample for the listed analytes exceeded the criterion of ≤ 1.0 . Therefore, the listed analytical results for all samples were qualified as estimated (UJ D-I).
	Co-57	1.14	
	Cr-51	1.71	
	Cs-137	1.60	
	Eu-152	1.21	
	Eu-154	1.17	
	Na-22	1.18	
	Cl-36	1.11	

DER – Duplicate Error Ratio J/UJ – Estimated D – Duplicate precision criteria not met. I – Indeterminate Bias

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Certificate of Analysis

Company : URS Corporation
 Address : 8181 E. Tufts Avenue
 Denver, Colorado 80237
 Contact: Ms. Sheri O'Connor
 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-24-13-398-PW-GPTF Project: URSC01104
 Sample ID: 222289001 Client ID: URSC011
 Matrix: Water
 Collect Date: 07-JAN-09 09:00
 Receive Date: 09-JAN-09
 Collector: Client

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>Gammasec, Gamma, Liquid "As Received"</i>												
Actinium-228 R	U	0.00	+/-9.84	15.0	20.0	pCi/L		KXG3	01/14/09	1022	832278	1
Americium-241	U	5.01	+/-11.6	17.9	25.0	pCi/L						
Antimony-124	U	-0.365	+/-3.90	6.52	5.00	pCi/L						
Antimony-125	U	0.0483	+/-5.54	9.06	10.0	pCi/L						
Barium-133	U	-0.185	+/-2.89	4.15	5.00	pCi/L						
Barium-140	U	-1.88	+/-9.54	16.0	30.0	pCi/L						
Beryllium-7	U	8.67	+/-16.0	28.6	50.0	pCi/L						
Bismuth-212	U	14.5	+/-15.1	27.4	50.0	pCi/L						
Bismuth-214 R	U	0.00	+/-6.10	8.82	10.0	pCi/L						
Cerium-139	U	-0.497	+/-1.83	3.11	5.00	pCi/L						
Cerium-141	U	1.10	+/-3.37	5.74	10.0	pCi/L						
Cerium-144	U	-3.27	+/-13.7	21.8	50.0	pCi/L						
Cesium-134	U	-0.676	+/-2.87	3.97	5.00	pCi/L						
Cesium-136	U	-0.691	+/-3.51	5.82	15.0	pCi/L						
Cesium-137	U	-3.5	+/-2.38	3.17	5.00	pCi/L						UJ D-I
Chromium-51	U	30.4	+/-18.9	34.5	50.0	pCi/L						UJ D-I
Cobalt-56	U	-0.347	+/-2.08	3.37	5.00	pCi/L						
Cobalt-57	U	-1.61	+/-1.81	2.81	5.00	pCi/L						UJ D-I
Cobalt-58	U	0.187	+/-2.21	3.20	10.0	pCi/L						
Cobalt-60	U	-0.549	+/-2.13	2.85	5.00	pCi/L						
Europium-152	U	4.91	+/-5.47	9.64	20.0	pCi/L						UJ D-I
Europium-154	U	-3.94	+/-5.50	8.21	20.0	pCi/L						UJ D-I
Europium-155	U	-1.13	+/-8.08	12.3	20.0	pCi/L						
Iridium-192	U	-0.867	+/-1.97	3.18	10.0	pCi/L						
Iron-59	U	-3.8	+/-4.14	6.24	10.0	pCi/L						
Krypton-85	U	-1690	+/-631	922		pCi/L						
Lead-210	U	-194	+/-338	482	750	pCi/L						
Lead-212	U	5.38	+/-6.70	7.02	15.0	pCi/L						
Lead-214 R	U	0.00	+/-7.60	8.78	10.0	pCi/L						
Manganese-54	U	0.942	+/-1.97	3.42	5.00	pCi/L						
Mercury-203	U	0.732	+/-2.20	3.76	5.00	pCi/L						
Neodymium-147	U	-7.14	+/-18.2	29.9	100	pCi/L						
Neptunium-239	U	2.76	+/-13.6	22.4	25.0	pCi/L						
Niobium-94	U	1.58	+/-1.72	3.12	5.00	pCi/L						
Niobium-95	U	0.253	+/-2.09	3.52	5.00	pCi/L						
Potassium-40		154	+/-50.8	29.9	100	pCi/L						
Promethium-144	U	0.291	+/-1.69	2.88	5.00	pCi/L						
Promethium-146	U	0.816	+/-2.52	4.44	5.00	pCi/L						

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Certificate of Analysis

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Address : 8181 E. Tufts Avenue
Denver, Colorado 80237

Contact: Ms. Sheri O'Connor
Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-24-13-398-PW-GPTF
Sample ID: 222289001

Project: URSC01104
Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	Test				Result	Nominal	Recovery%			Acceptable Limits	
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"						99			(25%-125%)	
Strontium Carrier	GFPC, Sr90, liquid "As Received"						83			(25%-125%)	
Technetium-99m Tracer	Liquid Scint Tc99, Liquid "As Received"						65			(15%-125%)	

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 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID:	FE-RG-13-1-398-PW-GPTF	Project:	URSC01104
Sample ID:	222289002	Client ID:	URSC011
Matrix:	Water		
Collect Date:	07-JAN-09 10:13		
Receive Date:	09-JAN-09		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>Gammasec, Gamma, Liquid "As Received"</i>												
Actinium-228	U	16.5	+/-10.8	16.7	20.0	pCi/L		KXG3	01/14/09	1022	832278	1
Americium-241	U	-17.8	+/-10.4	16.0	25.0	pCi/L						
Antimony-124	U	-0.714	+/-5.24	8.46	5.00	pCi/L						
Antimony-125	U	0.404	+/-5.48	9.33	10.0	pCi/L						
Barium-133	U	0.636	+/-2.99	4.52	5.00	pCi/L						
Barium-140	U	-4.39	+/-8.72	13.7	30.0	pCi/L						
Beryllium-7	U	-19.9	+/-16.4	24.7	50.0	pCi/L						
Bismuth-212	U	4.59	+/-15.1	25.7	50.0	pCi/L						
Bismuth-214	U	0.00	+/-6.98	9.76	10.0	pCi/L						
Cerium-139	U	1.02	+/-1.93	3.27	5.00	pCi/L						
Cerium-141	U	-0.969	+/-3.70	6.08	10.0	pCi/L						
Cerium-144	U	9.79	+/-13.5	23.2	50.0	pCi/L						
Cesium-134	U	0.366	+/-2.30	3.86	5.00	pCi/L						
Cesium-136	U	-1.36	+/-3.84	6.26	15.0	pCi/L						
Cesium-137	U	-0.94	+/-1.99	3.13	5.00	pCi/L						UJ D-I
Chromium-51	U	-10.4	+/-18.3	30.3	50.0	pCi/L						UJ D-I
Cobalt-56	U	-0.50	+/-1.94	3.23	5.00	pCi/L						
Cobalt-57	U	-1.13	+/-1.78	2.88	5.00	pCi/L						UJ D-I
Cobalt-58	U	-0.363	+/-2.14	3.16	10.0	pCi/L						
Cobalt-60	U	-0.464	+/-2.07	3.35	5.00	pCi/L						
Europium-152	U	2.76	+/-6.50	10.8	20.0	pCi/L						UJ D-I
Europium-154	U	-1.08	+/-5.49	8.94	20.0	pCi/L						UJ D-I
Europium-155	U	-1.12	+/-7.58	12.6	20.0	pCi/L						
Iridium-192	U	1.21	+/-1.84	3.28	10.0	pCi/L						
Iron-59	U	2.69	+/-3.52	6.53	10.0	pCi/L						
Krypton-85	U	-1580	+/-623	891		pCi/L						
Lead-210	U	79.0	+/-281	358	750	pCi/L						
Lead-212	U	3.71	+/-5.39	8.11	15.0	pCi/L						
Lead-214	U	7.33	+/-7.39	9.38	10.0	pCi/L						
Manganese-54	U	-1.2	+/-2.19	2.98	5.00	pCi/L						
Mercury-203	U	0.195	+/-2.19	3.78	5.00	pCi/L						
Neodymium-147	U	17.5	+/-19.4	34.7	100	pCi/L						
Neptunium-239	U	2.02	+/-13.6	22.9	25.0	pCi/L						
Niobium-94	U	-1.03	+/-1.90	2.97	5.00	pCi/L						
Niobium-95	U	0.980	+/-2.17	3.74	5.00	pCi/L						
Potassium-40		179	+/-51.3	37.5	100	pCi/L						
Promethium-144	U	-0.502	+/-1.91	3.08	5.00	pCi/L						
Promethium-146	U	0.192	+/-2.44	4.14	5.00	pCi/L						

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 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-13-1-398-PW-GPTF
 Sample ID: 222289002

Project: URSC01104
 Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
<i>Gammascpec, Gamma, Liquid "As Received"</i>											
Radium-228	U	16.5	+/-10.8	16.7	20.0	pCi/L					
Ruthenium-106	U	-10.4	+/-17.8	27.9	50.0	pCi/L					
Silver-110m	U	1.27	+/-1.94	3.41	5.00	pCi/L					
Sodium-22	U	-0.412	+/-1.95	3.17	5.00	pCi/L					
Thallium-208	U	2.38	+/-2.78	4.43	10.0	pCi/L					
Thorium-230	U	-420	+/-2790	1310	20.0	pCi/L					
Thorium-234	U	-13.5	+/-99.0	160	250	pCi/L					
Tin-113	U	-2.6	+/-2.46	3.85	10.0	pCi/L					
Uranium-235	U	-22.5	+/-17.0	24.6	50.0	pCi/L					
Uranium-238	U	-13.5	+/-99.0	160	250	pCi/L					
Yttrium-88	U	0.234	+/-1.82	3.18	10.0	pCi/L					
Zinc-65	U	-4.07	+/-4.57	6.94	10.0	pCi/L					
Zirconium-95	U	-1.75	+/-3.55	5.52	10.0	pCi/L					
Rad Gas Flow Proportional Counting											
<i>GFPC, Chlorine-36 liquid "As Received"</i>											
Chlorine-36	U	48.2	+/-109	188	100	pCi/L					
<i>GFPC, Gross A/B, liquid "As Received"</i>											
Alpha	U	11.0	+/-25.7	44.8	5.00	pCi/L					
Beta		115	+/-29.5	45.9	5.00	pCi/L					
<i>GFPC, Sr90, liquid "As Received"</i>											
Strontium-90	U	-0.715	+/-0.598	1.22	2.00	pCi/L					
Rad Liquid Scintillation Analysis											
<i>Liquid Scint Tc99, Liquid "As Received"</i>											
Technetium-99	U	-13.5	+/-27.8	48.7	50.0	pCi/L					
Rad Total Uranium											
<i>KPA, Total U, Liquid "As Received"</i>											
Total Uranium		1.81	+/-0.132	0.267	1.00	ug/L					

UJ D-I

UJ D-I

UJ MS-L

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL-RAD-A-033	
3	EPA 900.0	
4	EPA 905.0 Modified	
5	DOE EML HASL-300, Tc-02-RC Modified	
6	ASTM D 5174	

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Report Date: February 4, 2009

Client Sample ID: FE-RG-13-1-398-PW-GPTF
Sample ID: 222289002

Project: URSC01104
Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	Test				Result	Nominal	Recovery%			Acceptable Limits	
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"						97			(25%-125%)	
Strontium Carrier	GFPC, Sr90, liquid "As Received"						82			(25%-125%)	
Technetium-99m Tracer	Liquid Scint Tc99, Liquid "As Received"						62			(15%-125%)	

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 Contact: Ms. Sheri O'Connor
 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-12-4-398-PW-GPTF
 Sample ID: 222289003
 Matrix: Water
 Collect Date: 07-JAN-09 11:15
 Receive Date: 09-JAN-09
 Collector: Client

Project: URSC01104
 Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
<i>Gammaspac, Gamma, Liquid "As Received"</i>											
Actinium-228	R	0.00	+/-11.5	16.0	20.0	pCi/L		KXG3 01/14/09	1127	832278	1
Americium-241	U	4.15	+/-11.7	17.2	25.0	pCi/L					
Antimony-124	U	0.0859	+/-4.64	7.73	5.00	pCi/L					
Antimony-125	U	-2.52	+/-5.90	8.46	10.0	pCi/L					
Barium-133	U	0.791	+/-2.92	4.29	5.00	pCi/L					
Barium-140	U	2.67	+/-8.65	15.0	30.0	pCi/L					
Beryllium-7	U	-4.05	+/-15.4	25.7	50.0	pCi/L					
Bismuth-212	U	16.1	+/-15.6	28.4	50.0	pCi/L					
Bismuth-214	R	0.00	+/-5.27	9.51	10.0	pCi/L					
Cerium-139	U	-0.857	+/-1.74	2.86	5.00	pCi/L					
Cerium-141	U	-0.22	+/-3.24	5.49	10.0	pCi/L					
Cerium-144	U	3.65	+/-12.7	21.8	50.0	pCi/L					
Cesium-134	U	0.248	+/-2.43	4.08	5.00	pCi/L					
Cesium-136	U	1.11	+/-3.46	6.13	15.0	pCi/L					
Cesium-137	U	-1.27	+/-2.21	3.35	5.00	pCi/L					UJ D-I
Chromium-51	U	-4.86	+/-17.9	28.8	50.0	pCi/L					UJ D-I
Cobalt-56	U	1.35	+/-1.96	3.47	5.00	pCi/L					
Cobalt-57	U	-0.0479	+/-1.60	2.73	5.00	pCi/L					UJ D-I
Cobalt-58	U	-1.37	+/-1.83	2.76	10.0	pCi/L					
Cobalt-60	U	1.74	+/-2.08	3.86	5.00	pCi/L					
Europium-152	U	-3.38	+/-5.50	8.59	20.0	pCi/L					UJ D-I
Europium-154	U	-1.57	+/-5.56	9.05	20.0	pCi/L					UJ D-I
Europium-155	U	4.66	+/-6.82	12.0	20.0	pCi/L					
Iridium-192	U	0.799	+/-1.92	3.25	10.0	pCi/L					
Iron-59	U	-2.64	+/-3.56	5.48	10.0	pCi/L					
Krypton-85	U	-1170	+/-557	830		pCi/L					
Lead-210	U	-35.8	+/-320	456	750	pCi/L					
Lead-212	U	4.98	+/-4.81	6.66	15.0	pCi/L					
Lead-214	R	0.00	+/-7.07	9.68	10.0	pCi/L					
Manganese-54	U	-1.03	+/-2.10	3.31	5.00	pCi/L					
Mercury-203	U	-1.07	+/-2.09	3.34	5.00	pCi/L					
Neodymium-147	U	0.430	+/-17.0	29.0	100	pCi/L					
Neptunium-239	U	2.10	+/-11.9	20.6	25.0	pCi/L					
Niobium-94	U	0.640	+/-1.81	3.13	5.00	pCi/L					
Niobium-95	U	0.973	+/-2.05	3.57	5.00	pCi/L					
Potassium-40	U	215	+/-56.3	28.3	100	pCi/L					
Promethium-144	U	0.144	+/-1.67	2.82	5.00	pCi/L					
Promethium-146	U	1.17	+/-2.45	4.33	5.00	pCi/L					

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Certificate of Analysis

Company : URS Corporation
 Address : 8181 E. Tufts Avenue
 Denver, Colorado 80237

Contact: Ms. Sheri O'Connor
 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-12-4-398-PW-GPTF
 Sample ID: 222289003

Project: URSC01104
 Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>Gammascpec, Gamma, Liquid "As Received"</i>												
Radium-228	R	0.00	+/- 11.5	16.0	20.0	pCi/L						
Ruthenium-106	U	3.05	+/-17.6	30.1	50.0	pCi/L						
Silver-110m	U	-0.966	+/-1.81	2.89	5.00	pCi/L						
Sodium-22	U	-0.535	+/-1.99	3.24	5.00	pCi/L		UJ	D-I			
Thallium-208	U	1.10	+/-2.41	3.81	10.0	pCi/L						
Thorium-230	U	-227	+/-1700	1260	20.0	pCi/L						
Thorium-234	U	25.3	+/-123	138	250	pCi/L						
Tin-113	U	-0.419	+/-2.42	3.90	10.0	pCi/L						
Uranium-235	U	-20.3	+/-15.8	22.0	50.0	pCi/L						
Uranium-238	U	25.3	+/-123	138	250	pCi/L						
Yttrium-88	U	1.85	+/-2.12	4.00	10.0	pCi/L						
Zinc-65	U	-3.44	+/-4.35	6.77	10.0	pCi/L						
Zirconium-95	U	-0.451	+/-3.29	5.41	10.0	pCi/L						
Rad Gas Flow Proportional Counting												
<i>GFPC, Chlorine-36 liquid "As Received"</i>												
Chlorine-36	U	24.6	+/-104	182	100	pCi/L		BXF1	02/03/09	0853	838353	2 UJ D-I
<i>GFPC, Gross A/B, liquid "As Received"</i>												
Alpha	U	7.44	+/-17.2	30.8	5.00	pCi/L		DXB5	01/27/09	0953	836233	3
Beta		175	+/-28.0	40.2	5.00	pCi/L						
<i>GFPC, Sr90, liquid "As Received"</i>												
Strontium-90	U	0.0202	+/-0.550	1.01	2.00	pCi/L		JXC5	01/26/09	2113	832015	4 UJ MS-L
Rad Liquid Scintillation Analysis												
<i>Liquid Scint Tc99, Liquid "As Received"</i>												
Technetium-99	U	-18.3	+/-25.3	44.7	50.0	pCi/L		SXL4	01/19/09	2152	831982	5
Rad Total Uranium												
<i>KPA, Total U, Liquid "As Received"</i>												
Total Uranium		0.583	+/-0.0559	0.267	1.00	ug/L		KXG3	01/15/09	1345	831980	6

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL-RAD-A-033	
3	EPA 900.0	
4	EPA 905.0 Modified	
5	DOE EML HASL-300, Tc-02-RC Modified	
6	ASTM D 5174	

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Contact: Ms. Sheri O'Connor
Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-12-4-398-PW-GPTF
Sample ID: 222289003

Project: URSC01104
Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	Test				Result	Nominal	Recovery%				Acceptable Limits
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"						99				(25%-125%)
Strontium Carrier	GFPC, Sr90, liquid "As Received"						87				(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Liquid "As Received"						67				(15%-125%)

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Company : URS Corporation
 Address : 8181 E. Tufts Avenue
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 Contact: Ms. Sheri O'Connor
 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-31-8-398-PW-GPTF
 Sample ID: 222289004
 Project: URSC01104
 Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>Gammascpec, Gamma, Liquid "As Received"</i>												
Radium-228	U	-5.1	+/-8.00	12.2	20.0	pCi/L						
Ruthenium-106	U	-0.0963	+/-15.3	25.3	50.0	pCi/L						
Silver-110m	U	0.598	+/-1.55	2.68	5.00	pCi/L						
Sodium-22	U	-1.14	+/-1.96	2.94	5.00	pCi/L						UJ D-I
Thallium-208	U	3.23	+/-2.37	4.08	10.0	pCi/L						
Thorium-230	U	920	+/-5950	1330	20.0	pCi/L						
Thorium-234	U	16.7	+/-128	152	250	pCi/L						
Tin-113	U	-1.05	+/-2.27	3.77	10.0	pCi/L						
Uranium-235	U	-3.81	+/-15.8	22.9	50.0	pCi/L						
Uranium-238	U	16.7	+/-128	152	250	pCi/L						
Yttrium-88	U	-1.23	+/-1.78	2.51	10.0	pCi/L						
Zinc-65	U	0.315	+/-4.13	6.66	10.0	pCi/L						
Zirconium-95	U	2.01	+/-3.17	5.56	10.0	pCi/L						
Rad Gas Flow Proportional Counting												
<i>GFPC, Chlorine-36 liquid "As Received"</i>												
Chlorine-36	U	64.6	+/-120	206	100	pCi/L		BXF1	01/23/09	1841	832016	2 UJ D-I
<i>GFPC, Gross A/B, liquid "As Received"</i>												
Alpha	U	2.43	+/-5.93	10.6	5.00	pCi/L		DXB5	01/27/09	0953	836233	3
Beta		36.0	+/-11.4	18.1	5.00	pCi/L						
<i>GFPC, Sr90, liquid "As Received"</i>												
Strontium-90	U	-0.292	+/-0.442	0.901	2.00	pCi/L		JXC5	01/26/09	2113	832015	4 UJ MS-L
Rad Liquid Scintillation Analysis												
<i>Liquid Scint Tc99, Liquid "As Received"</i>												
Technetium-99	U	-10.1	+/-23.9	41.7	50.0	pCi/L		SXL4	01/19/09	2224	831982	5
Rad Total Uranium												
<i>KPA, Total U, Liquid "As Received"</i>												
Total Uranium		0.651	+/-0.0491	0.267	1.00	ug/L		KXG3	01/15/09	1348	831980	6

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL-RAD-A-033	
3	EPA 900.0	
4	EPA 905.0 Modified	
5	DOE EML HASL-300, Tc-02-RC Modified	
6	ASTM D 5174	

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Certificate of Analysis

Company : URS Corporation
Address : 8181 E. Tufts Avenue
Denver, Colorado 80237
Contact: Ms. Sheri O'Connor
Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-31-8-398-PW-GPTF
Sample ID: 222289004

Project: URSC01104
Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	Test				Result	Nominal	Recovery%			Acceptable Limits	
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"						102			(25%-125%)	
Strontium Carrier	GFPC, Sr90, liquid "As Received"						86			(25%-125%)	
Technetium-99m Tracer	Liquid Scint Tc99, Liquid "As Received"						72			(15%-125%)	

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 Denver, Colorado 80237

Contact: Ms. Sheri O'Connor
 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID:	FE-RG-24-20-398-PW-GPTF	Project:	URSC01104
Sample ID:	222289005	Client ID:	URSC011
Matrix:	Water		
Collect Date:	07-JAN-09 13:00		
Receive Date:	09-JAN-09		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>Gammascpec, Gamma, Liquid "As Received"</i>												
Actinium-228	U	1.98	+/-7.89	13.2	20.0	pCi/L						
Americium-241	U	-4.68	+/-11.6	18.1	25.0	pCi/L						
Antimony-124	U	-2.04	+/-4.55	7.09	5.00	pCi/L						
Antimony-125	U	2.52	+/-5.15	9.10	10.0	pCi/L						
Barium-133	U	-1.05	+/-2.60	3.81	5.00	pCi/L						
Barium-140	U	-1.63	+/-9.24	15.2	30.0	pCi/L						
Beryllium-7	U	5.79	+/-16.0	27.8	50.0	pCi/L						
Bismuth-212	U	1.81	+/-15.8	23.3	50.0	pCi/L						
Bismuth-214	U	0.00	+/-6.52	7.79	10.0	pCi/L						
Cerium-139	U	-0.0641	+/-1.75	2.96	5.00	pCi/L						
Cerium-141	U	-0.0122	+/-3.32	5.66	10.0	pCi/L						
Cerium-144	U	7.56	+/-12.9	22.5	50.0	pCi/L						
Cesium-134	U	-0.86	+/-2.12	3.49	5.00	pCi/L						
Cesium-136	U	1.22	+/-3.23	5.70	15.0	pCi/L						
Cesium-137	U	0.169	+/-1.93	3.22	5.00	pCi/L						UJ D-I
Chromium-51	U	-18.6	+/-18.4	27.3	50.0	pCi/L						UJ D-I
Cobalt-56	U	-0.235	+/-1.77	2.99	5.00	pCi/L						UJ D-I
Cobalt-57	U	-0.20	+/-1.66	2.83	5.00	pCi/L						UJ D-I
Cobalt-58	U	1.12	+/-1.79	3.27	10.0	pCi/L						
Cobalt-60	U	-0.0637	+/-1.88	3.07	5.00	pCi/L						
Europium-152	U	-3.26	+/-5.37	8.93	20.0	pCi/L						UJ D-I
Europium-154	U	-1.53	+/-5.36	8.46	20.0	pCi/L						UJ D-I
Europium-155	U	-0.421	+/-7.26	12.6	20.0	pCi/L						
Iridium-192	U	0.830	+/-2.06	3.43	10.0	pCi/L						
Iron-59	U	-0.556	+/-3.45	5.64	10.0	pCi/L						
Krypton-85	U	-1220	+/-597	883		pCi/L						
Lead-210	U	233	+/-423	600	750	pCi/L						
Lead-212	U	1.43	+/-4.01	5.89	15.0	pCi/L						
Lead-214	U	7.05	+/-7.21	8.20	10.0	pCi/L						
Manganese-54	U	-0.443	+/-1.74	2.90	5.00	pCi/L						
Mercury-203	U	0.786	+/-2.07	3.48	5.00	pCi/L						
Neodymium-147	U	-4.07	+/-19.1	31.5	100	pCi/L						
Neptunium-239	U	-3.32	+/-13.1	22.4	25.0	pCi/L						
Niobium-94	U	0.837	+/-1.58	2.76	5.00	pCi/L						
Niobium-95	U	0.483	+/-1.96	3.28	5.00	pCi/L						
Potassium-40		110	+/-39.2	30.3	100	pCi/L						
Promethium-144	U	1.45	+/-1.77	3.15	5.00	pCi/L						
Promethium-146	U	1.00	+/-2.36	4.14	5.00	pCi/L						

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Certificate of Analysis

Company : URS Corporation
 Address : 8181 E. Tufts Avenue
 Denver, Colorado 80237

Contact: Ms. Sheri O'Connor
 Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-24-20-398-PW-GPTF
 Sample ID: 222289005
 Project: URSC01104
 Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>Gammascpec, Gamma, Liquid "As Received"</i>												
Radium-228	U	1.98	+/-7.89	13.2	20.0	pCi/L						
Ruthenium-106	U	-8.29	+/-17.0	26.8	50.0	pCi/L						
Silver-110m	U	0.273	+/-1.70	2.85	5.00	pCi/L						
Sodium-22	U	-0.623	+/-1.90	2.98	5.00	pCi/L						
Thallium-208	U	2.28	+/-2.49	3.87	10.0	pCi/L						
Thorium-230	U	330	+/-2300	1440	20.0	pCi/L						
Thorium-234	U	-94.5	+/-121	187	250	pCi/L						
Tin-113	U	-1.19	+/-2.24	3.70	10.0	pCi/L						
Uranium-235	U	-13.3	+/-16.0	22.3	50.0	pCi/L						
Uranium-238	U	-94.5	+/-121	187	250	pCi/L						
Yttrium-88	U	-1.42	+/-2.13	3.11	10.0	pCi/L						
Zinc-65	U	-0.735	+/-4.50	7.09	10.0	pCi/L						
Zirconium-95	U	-1.54	+/-2.88	4.33	10.0	pCi/L						
Rad Gas Flow Proportional Counting												
<i>GFPC, Chlorine-36 liquid "As Received"</i>												
Chlorine-36	U	88.9	+/-179	305	100	pCi/L						
<i>GFPC, Gross A/B, liquid "As Received"</i>												
Alpha	U	13.8	+/-9.36	14.2	5.00	pCi/L						
Beta	U	69.2	+/-14.8	22.3	5.00	pCi/L						
<i>GFPC, Sr90, liquid "As Received"</i>												
Strontium-90	U	0.0199	+/-0.358	0.695	2.00	pCi/L						
Rad Liquid Scintillation Analysis												
<i>Liquid Scint Tc99, Liquid "As Received"</i>												
Technetium-99	U	-9.59	+/-22.0	38.4	50.0	pCi/L						
Rad Total Uranium												
<i>KPA, Total U, Liquid "As Received"</i>												
Total Uranium		1.09	+/-0.074	0.267	1.00	ug/L						

UJ 0-I

UJ 0-I

UJ MS-L

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL-RAD-A-033	
3	EPA 900.0	
4	EPA 905.0 Modified	
5	DOE EML HASL-300, Tc-02-RC Modified	
6	ASTM D 5174	

EE 5/12/09

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Certificate of Analysis

Company : URS Corporation
Address : 8181 E. Tufts Avenue
Denver, Colorado 80237

Contact: Ms. Sheri O'Connor
Project: Williams 2008

Report Date: February 4, 2009

Client Sample ID: FE-RG-24-20-398-PW-GPTF
Sample ID: 222289005

Project: URSC01104
Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	Test					Result	Nominal	Recovery%		Acceptable Limits	
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"							102		(25%-125%)	
Strontium Carrier	GFPC, Sr90, liquid "As Received"							78		(25%-125%)	
Technetium-99m Tracer	Liquid Scint Tc99, Liquid "As Received"							78		(15%-125%)	

EE 5/12/09

WILLIAMS – RIO BLANCO AREA DATA REVIEW SUMMARY

Data Package Number: GEL 224539
 Sample-specific Parameter Review? **Yes**
 Data Reviewer: Liz Kraak
 Peer Reviewer: Geoff Webb

Sampling Event: February 12th, 2009
 Laboratory Performance Parameters? **No**
 Date Completed: 5/11/2009
 Date Completed: 5/12/2009

The table below summarizes the results presented in this data package.

Field ID	Sample Type	Lab ID	Matrix	Analyses					
				Gross Alpha/ Beta (E900.0)	Gama Spectroscopy (E901.1)	Chlorine-36 (GL-RAD-A-033)	Technetium-99 (DOE EML HASL-300, Tc-02-RC M)	Strontium-90 (E905.0)	KPA Total Uranium (ASTM D 5174)
FE-RG-11-7-397-PW-GPTF	SA	224539001	W	X	X	X ^m	X ^m	X	X ^m

Matrix: W = Water QC Type: SA = Sample
 X^m = Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD).

The data review was conducted in accordance with the Rulison Sampling and Analysis Plan for Operational and Environmental Radiological Monitoring within a Three-Mile Radius of Project Rulison, Revision 2, March 31, 2008.

General Overall Assessment:

Data are usable without qualification.
 Data are usable with qualification; some data were qualified as unusable (noted below).

Case Narrative Summary: Except as noted below, any of the issues noted in the laboratory case narrative potentially affecting data quality are addressed in the appropriate sections in the following table.

Review Parameter	Criteria Met?	Comments
<i>Sample-specific Parameters</i>	Complete with "Yes", "No", or "Not Applicable (N/A)".	For each "No" response, list what was out, associated acceptance limits, all qualified data, and bias direction or reference associated table with pertinent details.
COC & Sample Receipt	Yes	The sample was received intact and the cooler temperature was 1 degree Celsius (°C) upon arrival at the laboratory. Data qualification was not necessary as the cooler temperature was ≤6°C.
Holding Times	Yes	All holding times were met.
Method Blanks	Yes	No target analytes were reported as detected within the associated method blanks.

Review Parameter	Criteria Met?	Comments
Matrix QC <ul style="list-style-type: none"> • MS FE-RG-11-397-PW-GPTF (Chlorine-36, Technetium-99, Total Uranium) • MS/MSD • LD FE-RG-11-397-PW-GPTF (Gamma Spec, Chlorine-36, Technetium-99, Total Uranium) 	No	The recoveries for the matrix spike (MS) were within the QAPP acceptance limits of 80-120%. The agreement between parent sample results and the lab duplicate sample results and/or the matrix spike results and the matrix spike duplicate results was evaluated. With the exceptions listed in Table 1, the duplicate error ratio (DER) for the laboratory duplicate pairs met the QC criteria of ≤ 1 for water samples.
Method QC <ul style="list-style-type: none"> • Implied Detection Limits • Sample Specific Chemical Recovery (Chemical Yield) • Laboratory Control Sample 	Yes	Implied Detection Limits No values for radionuclides were reported as detected with associated uncertainties greater than the reported result. Chemical Yield The sample specific recoveries were within the QAPP acceptance limits of 50-120% for the applicable methods. Laboratory Control Sample The LCS recoveries were within the QAPP acceptance limits 80-120%. Data qualification was not necessary.
Field QC <ul style="list-style-type: none"> • Field Duplicate N/A • Reinstatement Blank N/A 	N/A	A field duplicate was not collected for this sampling event.
Non-detect Results w/ Elevated RLS?	No	Gross Alpha/ Beta The gross alpha result for sample FE-RG-11-397-PW-GPTF did not meet the required detection limits due to low sample volume. No more sample volume could be used due to the maximum net weight limit. The nondetect results for these samples will need to be evaluated by the end user with respect to the project objectives. Chlorine-36 The chlorine-36 results for sample FE-RG-11-397-PW-GPTF did not meet the required detection limits due to low sample volume. No more sample volume could be used due to the maximum net weight limit. The nondetect results for these samples will need to be evaluated by the end user with respect to the project objectives.
Total Uncertainty	N/A	The parent sample results for chlorine-36, technetium-99, and radium-228 were reported as non-detect.
Unusable Data	No	Unusable Data With the exception noted below, all data met criteria for the field samples and were usable as qualified. Gamma Spectroscopy Identification of the following isotopes was rejected by the laboratory due to low abundance or high counting uncertainty and the identification was also rejected during data validation: <ul style="list-style-type: none"> • FE-RG-11-397-PW-GPTF Bismuth-214 Thallium-208
Package Completeness	Yes	Analytical data packages were complete.

Review Parameter	Criteria Met?	Comments
Other Parameters	No	<p>Gamma Spectroscopy</p> <p>For detected results, the laboratory reports the decay-corrected results for all isotopes rather than the uncorrected results. Decay correction is necessary for short half-life isotopes which are not in equilibrium with the parent isotope, thus the measured radionuclide has decayed to a lower level prior to analysis and would require correction back to collection. However, for virtually all isotopes of interest the isotopes are in equilibrium and the decay is matched by its production from the parent isotope decay. Thus, decay correction would result in a high biased activity. For correction using long-lived isotopes, the decay correction does not affect the result (i.e. the correction factor equals 1).</p> <p>For sample FE-RG-11-397-PW-GPTF actinium-228, radium-228, and potassium-40 were reported as detect. All other results were reported as nondetect.</p> <p>For actinium-228, which has a half-life of 6.13 hours and is in equilibrium with the parent isotope radium-228 which has a half-life of 5.75 years, decay correction is not appropriate. Therefore, the uncorrected result for actinium-228 should be reported. Since the radium-228 and actinium-228 are in equilibrium, the result for actinium-228 is also used as the result for radium-228. As there is <1% difference between the uncorrected and decay corrected results, the decay correction of results is not considered to affect the usability of the data.</p> <p>The decay correction factors for potassium-40 are 1 and the uncorrected and decay corrected results are the same. Therefore, the use of the decay corrected results does not affect the usability of the data.</p>

N/A = Not applicable

Table 1: DER Outliers and Resultant Data Qualification

Sample	Analyte	DER	Qualification
FE-RG-11-397-PW-GPTF	Total Uranium	2.73	The DER between the parent sample and laboratory duplicate sample for the listed analytes exceeded the criterion of ≤ 1.0 . Therefore, the total uranium, Ce-141, Kr-85, Nb-94 results for all samples were qualified as estimated (UJ D-I).
	Ce-141	1.10	
	Kr-85	1.19	
	Nb-94	1.16	

DER – Duplicate Error Ratio J/UJ – Estimated D – Duplicate precision criteria not met. I – Indeterminate Bias

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Certificate of Analysis

Company : URS Corporation
 Address : 8181 E. Tufts Avenue
 Denver, Colorado 80237

Report Date: March 2, 2009

Contact: Ms. Sheri O'Connor
 Project: Williams 2008

Client Sample ID:	FE-RG-11-7-397-PW-GPTF	Project:	URSC01104
Sample ID:	224539001	Client ID:	URSC011
Matrix:	Produced Water		
Collect Date:	12-FEB-09 12:15		
Receive Date:	13-FEB-09		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
<i>Gammaspac, Gamma, Liquid "As Received"</i>												
Actinium-228		16.3	+/-11.4	8.46		pCi/L		MJH1	02/17/09	1647	842625	1
Americium-241	U	0.697	+/-13.1	19.2		pCi/L						
Antimony-124	U	-4.53	+/-3.48	4.76		pCi/L						
Antimony-125	U	2.67	+/-4.46	7.55		pCi/L						
Barium-133	U	-0.861	+/-2.50	3.54		pCi/L						
Barium-140	U	4.50	+/-7.25	12.6		pCi/L						
Beryllium-7	U	10.1	+/-14.8	25.0		pCi/L						
Bismuth-212	U	3.18	+/-18.5	23.2		pCi/L						
Bismuth-214	U	0.00	+/-6.80	8.20		pCi/L						
Cerium-139	U	0.247	+/-1.62	2.78		pCi/L						
Cerium-141	U	4.00	+/-3.40	5.35		pCi/L		UJ			D-I	
Cerium-144	U	-1.4	+/-12.3	20.4		pCi/L						
Cesium-134	U	0.147	+/-2.05	3.46		pCi/L						
Cesium-136	U	-0.718	+/-2.66	4.28		pCi/L						
Cesium-137	U	-1.16	+/-2.27	2.77	5.00	pCi/L						
Chromium-51	U	3.63	+/-14.9	25.1		pCi/L						
Cobalt-56	U	0.328	+/-1.53	2.61		pCi/L						
Cobalt-57	U	0.734	+/-1.50	2.62		pCi/L						
Cobalt-58	U	0.872	+/-1.50	2.63		pCi/L						
Cobalt-60	U	-0.837	+/-1.53	2.46		pCi/L						
Europium-152	U	3.26	+/-5.31	8.41		pCi/L						
Europium-154	U	-0.718	+/-4.46	7.50		pCi/L						
Europium-155	U	2.62	+/-6.52	11.4		pCi/L						
Iridium-192	U	-0.451	+/-1.61	2.64		pCi/L						
Iron-59	U	-1.68	+/-3.19	4.98		pCi/L						
Krypton-85	U	-1700	+/-479	699		pCi/L		UJ			D-I	
Lead-210	U	118	+/-335	558		pCi/L						
Lead-212	U	4.63	+/-5.85	6.35		pCi/L						
Lead-214	U	7.56	+/-6.92	7.97		pCi/L						
Manganese-54	U	-0.599	+/-1.67	2.73		pCi/L						
Mercury-203	U	0.263	+/-1.85	3.12		pCi/L						
Neodymium-147	U	-9.37	+/-13.8	22.6		pCi/L						
Neptunium-239	U	-1.34	+/-11.5	19.8		pCi/L						
Niobium-94	U	-0.859	+/-1.53	2.49		pCi/L		UJ			D-I	
Niobium-95	U	1.70	+/-1.82	3.24		pCi/L						
Potassium-40		172	+/-54.6	26.9		pCi/L						
Promethium-144	U	-1.75	+/-2.04	2.48		pCi/L						
Promethium-146	U	-0.573	+/-2.22	3.58		pCi/L						

ER 5/11/09

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : URS Corporation
 Address : 8181 E. Tufts Avenue
 Denver, Colorado 80237

Report Date: March 2, 2009

Contact: Ms. Sheri O'Connor
 Project: **Williams 2008**

Client Sample ID: FE-RG-11-7-397-PW-GPTF
 Sample ID: 224539001

Project: URSC01104
 Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rad Gamma Spec Analysis											
<i>Gammaspac, Gamma, Liquid "As Received"</i>											
Radium-228		16.3	+/-11.4	8.46		pCi/L					
Ruthenium-106	U	-10.9	+/-14.4	23.4		pCi/L					
Silver-110m	U	-1.22	+/-1.47	2.35		pCi/L					
Sodium-22	U	-0.256	+/-1.59	2.67		pCi/L					
Thallium-208 R	U	0.00	+/-3.33	3.76		pCi/L					
Thorium-230	U	1030	+/-6630	1360		pCi/L					
Thorium-234	U	27.6	+/-143	175		pCi/L					
Tin-113	U	-0.139	+/-2.02	3.32		pCi/L					
Uranium-235	U	11.2	+/-18.9	20.8		pCi/L					
Uranium-238	U	27.6	+/-143	158		pCi/L					
Yttrium-88	U	1.15	+/-1.80	3.23		pCi/L					
Zinc-65	U	1.34	+/-3.76	5.58		pCi/L					
Zirconium-95	U	-1.12	+/-2.85	4.67		pCi/L					
Rad Gas Flow Proportional Counting											
<i>GFPC, Chlorine-36 liquid "As Received"</i>											
Chlorine-36	U	166	+/-130	214	100	pCi/L		BXF1 02/28/09	1454	846156	2
<i>GFPC, Gross A/B, liquid "As Received"</i>											
Alpha	U	14.6	+/-22.6	38.9	5.00	pCi/L		DXF3 02/18/09	1957	842456	3
Beta		74.2	+/-18.1	25.5	5.00	pCi/L					
<i>GFPC, Sr90, liquid "As Received"</i>											
Strontium-90	U	-0.286	+/-0.485	0.898	2.00	pCi/L		BXF1 02/20/09	0955	842424	4
Rad Liquid Scintillation Analysis											
<i>Liquid Scint Tc99, Liquid "As Received"</i>											
Technetium-99	U	-10.1	+/-25.6	45.3	50.0	pCi/L		SXL4 02/23/09	0030	842598	5
Rad Total Uranium											
<i>KPA, Total U, Liquid "As Received"</i>											
Total Uranium	U	-0.00366	+/-0.00134	0.533	1.00	ug/L		AF1 02/24/09	1116	842631	6 UJ D-I

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 901.1	
2	GL-RAD-A-033	
3	EPA 900.0	
4	EPA 905.0 Modified	
5	DOE EML HASL-300, Tc-02-RC Modified	
6	ASTM D 5174	

EE 5/11/09

GEL LABORATORIES LLC

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Certificate of Analysis

Company : URS Corporation
Address : 8181 E. Tufts Avenue
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Contact: Ms. Sheri O'Connor
Project: **Williams 2008**

Report Date: March 2, 2009

Client Sample ID: FE-RG-11-7-397-PW-GPTF
Sample ID: 224539001

Project: URSC01104
Client ID: URSC011

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Surrogate/Tracer recovery	Test				Result	Nominal	Recovery%			Acceptable Limits	
Potassium Chloride Carrier	GFPC, Chlorine-36 liquid "As Received"						99			(25%-125%)	
Strontium Carrier	GFPC, Sr90, liquid "As Received"						116			(25%-125%)	
Technetium-99m Tracer	Liquid Scint Tc99, Liquid "As Received"						101			(15%-125%)	

EE 5/11/09

WILLIAMS – RIO BLANCO AREA DATA REVIEW SUMMARY

Data Package Number: Paragon Analytics 09-01-040 Sampling Event: January 7, 2009
 Sample-specific Parameter Review? **Yes** Laboratory Performance Parameters? **Yes**
 Data Reviewer: Liz Kraak Date Completed: 02/11/09
 Peer Reviewer: Geoff Webb Date Completed: 02/12/09

The table below summarizes the results presented in this data package.

Field ID	Sample Type	Lab ID	Matrix	Analyses	
				Total Metals ¹ (6010B/6020A)	Inorganic Parameters ²
FE-RG-24-13-398-PW-GPTF	SA	0901040-1	W	X	X
FE-RG-13-1-398-PW-GPTF	SA	0901040-2	W	X ^m	X
FE-RG-12-4-398-PW-GPTF	SA	0901040-3	W	X	X
FE-RG-31-8-398-PW-GPTF	SA	0901040-4	W	X	X
FE-RG-24-20-398-PW-GPTF	SA	0901040-5	W	X	X

Analyses:

¹ = Metals analysis include Barium, Boron, Calcium, Chromium, Iron, Lithium, Magnesium, Potassium, Sodium, Strontium (6010B) & Arsenic, Cadmium, Lead, Manganese, Selenium (6020A)

² = Inorganic Parameters include Alkalinity, Bicarbonate, and Carbonate (Method 310.1); pH (Method 9040B); TDS (Method 160.1); Chloride, Bromide, Fluoride, Nitrate as N, Nitrate as N, Orthophosphate as P, and Sulfate (Method 300.0)

--- Parameters not analyzed for

Matrix: W = Water

QC Type: SA = Sample X^m = Matrix Spike/Matrix Spike Duplicate

The data review was conducted in accordance with the Rulison Sampling and Analysis Plan for Operational and Environmental Monitoring within a Three-Mile Radius of Project Rulison, Revision 2, March, 2008.

General Overall Assessment:

 Data are usable without qualification.

 X Data are usable with qualification.

Case Narrative Summary: Except as noted in the table below, any of the issues noted in the laboratory case narrative potentially affecting data quality are addressed in the appropriate sections.

Review Parameter	Criteria Met?	Comments
<i>Sample-specific Parameters</i>	Complete with "Yes", "No", or "Not Applicable (N/A)".	For each "No" response, list what was out, associated acceptance limits, all qualified data, and bias direction or reference associated table with pertinent details.
COC & Sample Receipt	Yes	Samples were received intact and the cooler temperature was ≤ 6°C at the laboratory. Therefore, data qualification was not necessary.
	No	Due to the nature of the sample matrix, all metals containers for all samples were received at a pH>2. The laboratory added additional HNO ₃ to the bottles in an attempt to bring the final pH to <2 before proceeding with the analysis. Sample integrity was unlikely affected and qualification of data was not considered necessary.
Holding Times	No	The samples were analyzed for pH five days after collection, which exceeds the holding time requirement of immediate analysis. Therefore, the pH result for all samples were qualified as estimated (J HT-I) with an indeterminate bias.

Review Parameter	Criteria Met?	Comments
Method Blanks and CCBs	No	<p>With the exceptions listed below in Table 1, target analytes were not reported as detected within the associated method blanks (MBs) or continuing calibration blanks (CCBs).</p> <p>Several target metals were detected in the MB and CCBs. Only the results for the samples bracketed by the CCBs listed in the table were qualified. As no samples were bracketed by the initial calibration blank (ICB), data qualification was not issued based on ICB contamination. The highest CCB concentration associated with the samples reported in this data package was used to assign data qualification.</p>
Matrix QC <ul style="list-style-type: none"> • MS/MSD FE-RG-13-1-398-PW-GPTF (Metals) • LD FE-RG-24-13-398-PW-GPTF (pH) FE-RG-13-1-398-PW-GPTF (Metals) 	Yes	<p>MS/MSD</p> <p>The recoveries and RPDs for the matrix spike (MS) and matrix spike duplicate (MSD) analyses were within the laboratory-determined acceptance range. Data qualification was not required.</p> <p>The MS/MSD recoveries for sample FE-RG-13-1-398-PW-GPTF could not be evaluated for barium, boron, calcium, iron, manganese, lithium, potassium, sodium, and strontium because the results in the native sample were greater than four times the concentration of the spike added during digestion. Since the sample concentrations are so much greater than the spike added, the MS/MSD recoveries are not considered to be a representative measure of accuracy. Further action or data qualification was not necessary.</p>
	Yes	<p>Laboratory Duplicate</p> <p>The agreement between parent sample results and the lab duplicate sample results was evaluated for mercury and pH; and the results met the evaluation criteria.</p>
Field QC <ul style="list-style-type: none"> • Field Blanks (Ambient, Rinsate, or Trip) NA • Field Duplicate NA 	NA	A field duplicate was not collected in association with this sampling event.
Method QC <ul style="list-style-type: none"> • Serial Dilutions (SD) FE-RG-13-1-398-PW-GPTF • Post Digestion Spike (PDS) • Cation/Anion Balance & Total vs. Partial Analyses • Internal Standards • Surrogates 	No	<p>Serial Dilutions</p> <p>The serial dilution analysis was conducted on sample FE-RG-13-1-398-PW-GPTF for metals. Serial dilution results were applicable for 10 metals. The percent difference between undiluted and diluted sample results was compared to an evaluation criterion of $\pm 10\%$. With the exception listed in Table 2 below, applicable analytes met this criteria.</p>
	NA	<p>Post Digestion Spike</p> <p>A post digestion spike was not performed on samples from this data package.</p>
	NA	<p>Cation/Anion Balance and Total vs. Partial Analyses</p> <p>As only total metals results were reported in this data package, a cation/ anion balance and total vs. partial analysis could not be performed. Further action was not necessary.</p>
	Yes	<p>Internal Standards</p> <p>Internal standards were within the laboratory-determined acceptance limits. Data qualification was not considered necessary.</p>
	NA	<p>Surrogates</p> <p>Surrogate recoveries cannot be evaluated for metals and inorganic analyses.</p>
Interference Check Sample	Yes	No interferent elements were present in the samples at concentrations greater than that in the ICS A and ICS AB solutions. Also, the ICSA percent recoveries were within acceptance limits of 80-120%. Data qualification was not required.

Review Parameter	Criteria Met?	Comments
Non-detect Results with Elevated RLs?	No	Many of the analyses in this data package were run at dilutions and were reported as detected with the following exceptions. Due to high levels of dissolved salts in the sample the laboratory analyzed the anions at dilutions to minimize the amount of salts loaded into the analytical column and to protect the integrity of the instrument. Some anion results were reported as non-detect at elevated reporting limits. Some metals results were also reported as non-detect at elevated reporting limits. These elevated reporting limits will need to be evaluated by the end user in terms of the project objectives.
Package Completeness	Yes	Analytical results in this package are considered usable as qualified and are considered 100% complete.
Other Parameters <ul style="list-style-type: none"> • LCS • CCV • Laboratory Qualifiers 	Yes	LCS LCS recoveries were within the laboratory established acceptance limits. Therefore, data qualification was not considered necessary.
	Yes	CCV CCV recoveries bracketing samples were within the method acceptance limits. Therefore, data qualification was not considered necessary.
	Yes	Laboratory Qualifiers The laboratory flagged GRO, DRO, and RRO results with a Z, G, D, M, or L to indicate the location of the result in the carbon chain range. Further action was not considered necessary.

Table 1: Blank Outliers and Resultant Data Qualification

Analyte	Blank	Concentration	Data Qualification
Barium	MB	-0.39 µg/L	None. The listed analytical results in the associated samples were reported at concentrations >4X the negative blank contamination.
	CCB 3	-0.286 µg/L	
Boron	MB	-3.1 µg/L	
	CCB 3	-5.63 µg/L	
Calcium	MB	-190 µg/L	
	CCB 3	-228 µg/L	
Iron	MB	56 µg/L	None. The associated sample iron results were reported as non-detect or at concentrations >5x the positive blank contamination or >4x the negative blank contamination.
	CCB 3	-1.33 µg/L	
Lithium	MB	4.4 µg/L	None. The listed analytical results in the associated samples were reported at concentrations >5x the positive blank contamination or at concentrations >4X the negative blank contamination.
	CCB 4	4.37 µg/L	
Magnesium	MB	-11 µg/L	
	CCB 4	-8.57 µg/L	
Potassium	MB	300 µg/L	
	CCB 4	219 µg/L	
Sodium	MB	230 µg/L	
	CCB 6	208 µg/L	
Strontium	MB	-0.56 µg/L	
	CCB 3	-0.804 µg/L	
Chromium	CCB 4	-7.46 µg/L	Associated sample chromium results reported at concentrations <4x the negative blank contamination were qualified as estimated (J CCB-I).
Manganese	MB	0.59 µg/L	None. The associated manganese results were reported at concentrations >5x the positive blank contamination.
	CCB 7	0.00725 µg/L	
Selenium	MB	0.23 µg/L	Associated sample selenium and uranium results that were reported at concentrations <5x the positive blank contamination, were qualified as non-detect (U MB-I) at the reporting limit.
	CCB 5	0.0228 µg/L	
Uranium	MB	0.023 µg/L	
	CCB 6	3.65E-05 µg/L	
Arsenic	CCB 6	0.2 µg/L	None. The associated arsenic results were reported at concentrations >5x the positive blank contamination.
Cadmium	CCB 5	0.04429 µg/L	Associated sample cadmium results that were reported at concentrations <5x the positive blank contamination, were qualified as non-detect (U CCB-I) at the reporting limit.
Lead	CCB 7	0.00246 µg/L	None. The associated lead and mercury results were reported at concentrations >5x the positive blank contamination.
Mercury	MB	0.018 µg/L	
Chloride	MB	0.17 mg/L	None. The chloride results in the associated samples were reported at concentrations >5X the positive blank contamination.
	CCB 4	0.358 mg/L	
Nitrite as N	MB	0.049 mg/L	None. All associated sample nitrite as N results were reported as non-detect.
	CCB 2	0.0396 mg/L	
Bromide	MB	0.092 mg/L	None. The listed analytical results in the associated samples were reported at concentrations >5X the positive blank contamination.
Nitrate as N	MB	0.076 mg/L	
	CCB 2	0.0901 mg/L	

CCB – Continuing Calibration Blank MB – Method Blank mg/L – Milligrams per Liter µg/L – Micrograms per liter
 U – Non-detect I - Indeterminate

Table 2: Serial Dilution Outliers and Resultant Data Qualification

Analytes	Sample Result (µg/L)	Serial Dilution Result (µg/L)	%D	Action
FE-RG-13-1-398-PW-GPTF				
Potassium	32600	25900	20	Listed detected analytical results for sample FE-RG-13-1-398-PW-GPTF were qualified as estimated (J DL-H) to reflect the potential high bias.
Sodium	47600	41200	13	

%D – Percent Difference µg/L – Micrograms per Liter J – Estimated DL – Serial dilution failure. H – High Bias

BICARBONATE AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: URS
Client Project ID: Williams-Rio Blanca 22240417.00001
Work Order Number: 0901040 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-24-13-398-PW-GPTF	0901040-1	01/07/2009	01/15/2009	01/15/2009	N/A	1	980	100		5 ml
FE-RG-13-1-398-PW-GPTF	0901040-2	01/07/2009	01/15/2009	01/15/2009	N/A	1	900	100		5 ml
FE-RG-12-4-398-PW-GPTF	0901040-3	01/07/2009	01/15/2009	01/15/2009	N/A	1	1400	100		5 ml
FE-RG-31-8-398-PW-GPTF	0901040-4	01/07/2009	01/15/2009	01/15/2009	N/A	1	1600	100		5 ml
FE-RG-24-20-398-PW-GPTF	0901040-5	01/07/2009	01/15/2009	01/15/2009	N/A	1	2000	100		5 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon

LIMS Version: 6.234A

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FE 2/10/09

CARBONATE AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: URS
Client Project ID: Williams-Rio Blanca 22240417.00001
Work Order Number: 0901040 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-24-13-398-PW-GPTF	0901040-1	01/07/2009	01/15/2009	01/15/2009	N/A	1	100	100	U	5 ml
FE-RG-13-1-398-PW-GPTF	0901040-2	01/07/2009	01/15/2009	01/15/2009	N/A	1	100	100	U	5 ml
FE-RG-12-4-398-PW-GPTF	0901040-3	01/07/2009	01/15/2009	01/15/2009	N/A	1	100	100	U	5 ml
FE-RG-31-8-398-PW-GPTF	0901040-4	01/07/2009	01/15/2009	01/15/2009	N/A	1	100	100	U	5 ml
FE-RG-24-20-398-PW-GPTF	0901040-5	01/07/2009	01/15/2009	01/15/2009	N/A	1	100	100	U	5 ml

EV 2/10/09

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0901040-1

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: URS
Client Project ID: Williams-Rio Blanca 22240417.00001
Work Order Number: 0901040 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-24-13-398-PW-GPTF	0901040-1	01/07/2009	01/15/2009	01/15/2009	N/A	1	980	100		5 ml
FE-RG-13-1-398-PW-GPTF	0901040-2	01/07/2009	01/15/2009	01/15/2009	N/A	1	900	100		5 ml
FE-RG-12-4-398-PW-GPTF	0901040-3	01/07/2009	01/15/2009	01/15/2009	N/A	1	1400	100		5 ml
FE-RG-31-8-398-PW-GPTF	0901040-4	01/07/2009	01/15/2009	01/15/2009	N/A	1	1600	100		5 ml
FE-RG-24-20-398-PW-GPTF	0901040-5	01/07/2009	01/15/2009	01/15/2009	N/A	1	2000	100		5 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon
LIMS Version: 6.234A

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2/10/09

pH in water @25 Degrees Celsius

Method SW9040B

Sample Results

Lab Name: ALS Paragon

Client Name: URS

Client Project ID: Williams-Rio Blanca 22240417.00001

Work Order Number: 0901040

Final Volume: 20 ml

Reporting Basis: As Received

Matrix: WATER

Prep Method: NONE

Result Units: pH

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-24-13-398-PW-GPTF	0901040-1	01/07/2009	01/12/2009	01/12/2009	N/A	1	6.57	0.1		20 ml
FE-RG-13-1-398-PW-GPTF	0901040-2	01/07/2009	01/12/2009	01/12/2009	N/A	1	6.25	0.1		20 ml
FE-RG-12-4-398-PW-GPTF	0901040-3	01/07/2009	01/12/2009	01/12/2009	N/A	1	6.43	0.1		20 ml
FE-RG-31-8-398-PW-GPTF	0901040-4	01/07/2009	01/12/2009	01/12/2009	N/A	1	6.64	0.1		20 ml
FE-RG-24-20-398-PW-GPTF	0901040-5	01/07/2009	01/12/2009	01/12/2009	N/A	1	6.63	0.1		20 ml

J HT-I
↓

EE 2/10/09

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ph0901040-1*

Date Printed: Monday, January 19, 2009

ALS Paragon

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LIMS Version: 6.234A

TOTAL DISSOLVED SOLIDS

Method EPA160.1

Sample Results

Lab Name: ALS Paragon

Client Name: URS

Client Project ID: Williams-Rio Blanca 22240417.00001

Work Order Number: 0901040

Final Volume: 100 ml

Reporting Basis: As Received

Matrix: WATER

Prep Method: METHOD

Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-24-13-398-PW-GPTF	0901040-1	01/07/2009	01/12/2009	01/13/2009	N/A	1	11000	400		5 ml
FE-RG-13-1-398-PW-GPTF	0901040-2	01/07/2009	01/12/2009	01/13/2009	N/A	1	15000	400		5 ml
FE-RG-12-4-398-PW-GPTF	0901040-3	01/07/2009	01/12/2009	01/13/2009	N/A	1	14000	400		5 ml
FE-RG-31-8-398-PW-GPTF	0901040-4	01/07/2009	01/12/2009	01/13/2009	N/A	1	7600	200		10 ml
FE-RG-24-20-398-PW-GPTF	0901040-5	01/07/2009	01/12/2009	01/13/2009	N/A	1	8700	400		5 ml

FE 2/10/09

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *td0901040-1*

Date Printed: Monday, January 19, 2009

ALS Paragon

LIMS Version: 6.234A

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-24-13-398-PW-GPT
Lab ID: 0901040-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 07-Jan-09

Date Extracted: 09-Jan-09

Date Analyzed: 09-Jan-09

Prep Method: NONE

Prep Batch: IC090109-1

QCBatchID: IC090109-1-1

Run ID: ic090109-2a

Cleanup: NONE

Basis: As Received

File Name: 90109_032.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	20	1.6	2	0.67	J	J SQL-I
16887-00-6	CHLORIDE	500	6200	100	25		
14797-65-0	NITRITE AS N	20	2	2	0.67	U	
24959-67-9	BROMIDE	20	39	4	1.6		
14797-55-8	NITRATE AS N	20	1.6	4	1	J	J SQL-I
14265-44-2	ORTHOPHOSPHATE AS P	20	10	10	3	U	
14808-79-8	SULFATE	20	20	20	6.7	U	

Data Package ID: ic0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon
Work Order Number: 0901040
Client Name: URS
ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID:	FE-RG-13-1-398-PW-GPTF
Lab ID:	0901040-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 09-Jan-09
Date Analyzed: 09-Jan-09
Prep Method: NONE

Prep Batch: IC090109-1
QCBatchID: IC090109-1-1
Run ID: ic090109-2a
Cleanup: NONE
Basis: As Received
File Name: 90109_035.DXD

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	20	2	2	0.67	U	
16887-00-6	CHLORIDE	500	9100	100	25		
14797-65-0	NITRITE AS N	20	2	2	0.67	U	
24959-67-9	BROMIDE	20	54	4	1.6		
14797-55-8	NITRATE AS N	20	1.5	4	1	J	J SQL-I
14265-44-2	ORTHOPHOSPHATE AS P	20	10	10	3	U	
14808-79-8	SULFATE	20	26	20	6.7		

Data Package ID: ic0901040-1

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon
Work Order Number: 0901040
Client Name: URS
ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-12-4-398-PW-GPTF Lab ID: 0901040-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 09-Jan-09
Date Analyzed: 09-Jan-09
Prep Method: NONE

Prep Batch: IC090109-1
QCBatchID: IC090109-1-1
Run ID: ic090109-2a
Cleanup: NONE
Basis: As Received
File Name: 90109_036.DXD

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	20	2	2	0.67	U	
16887-00-6	CHLORIDE	500	8500	100	25		
14797-65-0	NITRITE AS N	20	2	2	0.67	U	
24959-67-9	BROMIDE	20	49	4	1.6		
14797-55-8	NITRATE AS N	20	1.6	4	1	J	J SQL-I
14265-44-2	ORTHOPHOSPHATE AS P	20	10	10	3	U	
14808-79-8	SULFATE	20	13	20	6.7	J	J SQL-I

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Data Package ID: ic0901040-1

Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-31-8-398-PW-GPTF
Lab ID: 0901040-4

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 07-Jan-09

Date Extracted: 09-Jan-09

Date Analyzed: 09-Jan-09

Prep Method: NONE

Prep Batch: IC090109-1

QCBatchID: IC090109-1-1

Run ID: ic090109-2a

Cleanup: NONE

Basis: As Received

File Name: 90109_037.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	10	1	1	0.33	U	
16887-00-6	CHLORIDE	500	3000	100	25		
14797-65-0	NITRITE AS N	10	1	1	0.33	U	
24959-67-9	BROMIDE	10	22	2	0.78		
14797-55-8	NITRATE AS N	10	1	2	0.5	J	J SQL-I
14265-44-2	ORTHOPHOSPHATE AS P	10	5	5	1.5	U	
14808-79-8	SULFATE	10	12	10	3.3		

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Data Package ID: ic0901040-1

Date Printed: Monday, January 19, 2009

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon
Work Order Number: 0901040
Client Name: URS
ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-24-20-398-PW-GPT Lab ID: 0901040-5	Sample Matrix: WATER % Moisture: N/A Date Collected: 07-Jan-09 Date Extracted: 09-Jan-09 Date Analyzed: 09-Jan-09 Prep Method: NONE	Prep Batch: IC090109-1 QCBatchID: IC090109-1-1 Run ID: ic090109-2a Cleanup: NONE Basis: As Received File Name: 90109_038.DXD	Sample Aliquot: 5 ml Final Volume: 5 ml Result Units: MG/L Clean DF: 1
---	--	---	---

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	10	1	1	0.33	U	
16887-00-6	CHLORIDE	500	3400	100	25		
14797-65-0	NITRITE AS N	10	1	1	0.33	U	
24959-67-9	BROMIDE	10	21	2	0.78		
14797-55-8	NITRATE AS N	10	0.82	2	0.5	J	J SQL-I
14265-44-2	ORTHOPHOSPHATE AS P	10	5	5	1.5	U	
14808-79-8	SULFATE	10	26	10	3.3		

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Data Package ID: ic0901040-1

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-24-13-398-PW-GPT
Lab ID: 0901040-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
QCBatchID: IP090112-2-1
Run ID: IT090113-2A3
Cleanup: NONE
Basis: As Received
File Name: 090113A.

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	10	23000	1000	1.4		
7440-42-8	BORON	10	13000	1000	26		
7440-70-2	CALCIUM	10	60000	10000	140		
7440-47-3	CHROMIUM	10	27,100 22	100	7.3	B	J CCB, S&L-I
7439-89-6	IRON	10	8400	1000	36		
7439-93-2	LITHIUM	10	5600	100	1.5		
7439-95-4	MAGNESIUM	10	5900	10000	52	B	J S&L-I
7440-09-7	POTASSIUM	10	200000	10000	300		
7440-23-5	SODIUM	100	3700000	100000	600		
7440-24-6	STRONTIUM	10	12000	100	0.6		

Data Package ID: it0901040-1

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Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID:	FE-RG-13-1-398-PW-GPTF
Lab ID:	0901040-2

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 07-Jan-09
 Date Extracted: 12-Jan-09
 Date Analyzed: 13-Jan-09
 Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
 QCBatchID: IP090112-2-1
 Run ID: IT090113-2A3
 Cleanup: NONE
 Basis: As Received
 File Name: 090113A.

Sample Aliquot: 50 g
 Final Volume: 50 g
 Result Units: UG/L
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	10	18000	1000	1.4		
7440-42-8	BORON	10	12000	1000	26		
7440-70-2	CALCIUM	10	170000	10000	140		
7440-47-3	CHROMIUM	10	100	100	7.3	U	
7439-89-6	IRON	10	62000	1000	36		
7439-93-2	LITHIUM	10	4800	100	1.5		
7439-95-4	MAGNESIUM	10	16000	10000	52		
7440-09-7	POTASSIUM	10	330000	10000	300		E
7440-23-5	SODIUM	100	4800000	100000	600		E
7440-24-6	STRONTIUM	10	20000	100	0.6		

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EL 2/10/09

Data Package ID: it0901040-1

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-12-4-398-PW-GPTF
Lab ID: 0901040-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
QCBatchID: IP090112-2-1
Run ID: IT090113-2A3
Cleanup: NONE
Basis: As Received
File Name: 090113A.

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	10	50000	1000	1.4		
7440-42-8	BORON	10	8500	1000	26		
7440-70-2	CALCIUM	10	130000	10000	140		
7440-47-3	CHROMIUM	10	100	100	7.3	U	
7439-89-6	IRON	10	4400	1000	36		
7439-93-2	LITHIUM	10	4300	100	1.5		
7439-95-4	MAGNESIUM	10	15000	10000	52		
7440-09-7	POTASSIUM	10	370000	10000	300		
7440-23-5	SODIUM	100	4700000	100000	600		
7440-24-6	STRONTIUM	10	18000	100	0.6		

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Data Package ID: it0901040-1

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-31-8-398-PW-GPTF
Lab ID: 0901040-4

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
QCBatchID: IP090112-2-1
Run ID: IT090113-2A3
Cleanup: NONE
Basis: As Received
File Name: 090113A.

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	10	13000	1000	1.4		
7440-42-8	BORON	10	6600	1000	26		
7440-70-2	CALCIUM	10	34000	10000	140		
7440-47-3	CHROMIUM	10	58	100	7.3	B	J SQL-I
7439-89-6	IRON	10	15000	1000	36		
7439-93-2	LITHIUM	10	3100	100	1.5		
7439-95-4	MAGNESIUM	10	3800	10000	52	B	J SQL-I
7440-09-7	POTASSIUM	10	140000	10000	300		
7440-23-5	SODIUM	10	2400000	10000	60		
7440-24-6	STRONTIUM	10	5200	100	0.6		

Data Package ID: it0901040-1

Date Printed: Monday, January 19, 2009

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Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-24-20-398-PW-GPT
Lab ID: 0901040-5

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
QCBatchID: IP090112-2-1
Run ID: IT090113-2A3
Cleanup: NONE
Basis: As Received
File Name: 090113A.

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	10	7900	1000	1.4		
7440-42-8	BORON	10	11000	1000	26		
7440-70-2	CALCIUM	10	28000	10000	140		
7440-47-3	CHROMIUM	10	10 100 10	100	7.3	B	EE VCCB-I JCCB,SQL-I
7439-89-6	IRON	10	7100	1000	36		
7439-93-2	LITHIUM	10	3400	100	1.5		
7439-95-4	MAGNESIUM	10	2800	10000	52	B	J SQL-I
7440-09-7	POTASSIUM	10	150000	10000	300		
7440-23-5	SODIUM	100	3000000	100000	600		
7440-24-6	STRONTIUM	10	4700	100	0.6		

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Data Package ID: it0901040-1

Date Printed: Monday, January 19, 2009

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Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-24-13-398-PW-GPT
Lab ID: 0901040-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
QCBatchID: IP090112-2-2
Run ID: IM090113-1A5
Cleanup: NONE
Basis: As Received
File Name: 13JAN08A

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-38-2	ARSENIC	10	2.2	2	0.11		
7440-43-9	CADMIUM	10	0.1	0.3	0.042	B	J SQL-I
7439-92-1	LEAD	10	0.55	0.5	0.045		
7439-96-5	MANGANESE	10	160	2	0.21		
7782-49-2	SELENIUM	10	1.046	1	0.11	B	U MB-I
7440-61-1	URANIUM	10	0.10835	0.1	0.0074	B	U MB-I

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Data Package ID: im0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon

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Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-13-1-398-PW-GPTF
Lab ID: 0901040-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A.

Prep Batch: IP090112-2
QCBatchID: IP090112-2-2
Run ID: IM090113-1A5
Cleanup: NONE
Basis: As Received
File Name: 13JAN08A

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-38-2	ARSENIC	10	1.2	2	0.11	B	J SQL-I
7440-43-9	CADMIUM	10	0.099	0.3	0.042	B	↓
7439-92-1	LEAD	10	0.075	0.5	0.045	B	
7439-96-5	MANGANESE	100	990	20	2.1		
7782-49-2	SELENIUM	10	0.23	1	0.11	B	U MB-I
7440-61-1	URANIUM	10	0.1 0.028	0.1	0.0074	B	U MB-I

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Data Package ID: im0901040-1

Date Printed: Monday, January 19, 2009

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Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-12-4-398-PW-GPTF
Lab ID: 0901040-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
QCBatchID: IP090112-2-2
Run ID: IM090113-1A5
Cleanup: NONE
Basis: As Received
File Name: 13JAN08A

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-38-2	ARSENIC	10	15	2	0.11		
7440-43-9	CADMIUM	10	0.056	0.3	0.042	B	J SQL-I
7439-92-1	LEAD	10	0.5	0.5	0.045	U	
7439-96-5	MANGANESE	10	120	2	0.21		
7782-49-2	SELENIUM	10	1.04	1	0.11	B	V MB-I
7440-61-1	URANIUM	10	0.1	0.1	0.0074	B	V MB-I

Data Package ID: im0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon

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Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID:	FE-RG-31-8-398-PW-GPTF
Lab ID:	0901040-4

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 07-Jan-09
 Date Extracted: 12-Jan-09
 Date Analyzed: 13-Jan-09
 Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
 QCBatchID: IP090112-2-2
 Run ID: IM090113-1A5
 Cleanup: NONE
 Basis: As Received
 File Name: 13JAN08A

Sample Aliquot: 50 g
 Final Volume: 50 g
 Result Units: UG/L
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-38-2	ARSENIC	10	4.9	2	0.11		
7440-43-9	CADMIUM	10	0.3	0.3	0.042	U	
7439-92-1	LEAD	10	0.095	0.5	0.045	B	J SQL-I
7439-96-5	MANGANESE	10	130	2	0.21		
7782-49-2	SELENIUM	10	1.3	1	0.11		
7440-61-1	URANIUM	10	0.2	0.1	0.0074		

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Data Package ID: im0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon

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Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0901040

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-24-20-398-PW-GPT
Lab ID: 0901040-5

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 07-Jan-09
Date Extracted: 12-Jan-09
Date Analyzed: 13-Jan-09
Prep Method: SW3005 Rev A

Prep Batch: IP090112-2
QCBatchID: IP090112-2-2
Run ID: IM090113-1A5
Cleanup: NONE
Basis: As Received
File Name: 13JAN08A

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-38-2	ARSENIC	10	10	2	0.11		
7440-43-9	CADMIUM	10	0.3 0.048	0.3	0.042	B	U CCB-I
7439-92-1	LEAD	10	0.16	0.5	0.045	B	J SQL-I
7439-96-5	MANGANESE	10	84	2	0.21		
7782-49-2	SELENIUM	10	1 0.86	1	0.11	B	U MB-I
7440-61-1	URANIUM	10	0.46	0.1	0.0074		

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Data Package ID: im0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon

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Total MERCURY

Method SW7470

Sample Results

Lab Name: ALS Paragon

Client Name: URS

Client Project ID: Williams-Rio Blanca 22240417.00001

Work Order Number: 0901040

Final Volume: 20 g

Reporting Basis: As Received

Matrix: WATER

Result Units: UG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	MDL	Flag	Sample Aliquot
FE-RG-24-13-398-PW-GPTF	0901040-1	1/7/2009	1/15/2009	01/16/2009	N/A	1	3.2	0.2	0.0081		20 g
FE-RG-13-1-398-PW-GPTF	0901040-2	1/7/2009	1/15/2009	01/16/2009	N/A	1	0.2 0.058	0.2	0.0081	B	20 g
FE-RG-12-4-398-PW-GPTF	0901040-3	1/7/2009	1/15/2009	01/16/2009	N/A	1	0.2	0.2	0.0081	U	20 g
FE-RG-31-8-398-PW-GPTF	0901040-4	1/7/2009	1/15/2009	01/16/2009	N/A	1	0.25	0.2	0.0081		20 g
FE-RG-24-20-398-PW-GPTF	0901040-5	1/7/2009	1/15/2009	01/16/2009	N/A	100	32	20	0.81		20 g

U MB

22
01/16/09

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: hg0901040-1

Date Printed: Monday, January 19, 2009

ALS Paragon

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LIMS Version: 6.234A

WILLIAMS – RIO BLANCO AREA DATA REVIEW SUMMARY

Data Package Number: Paragon Analytics 09-02-111 Sampling Event: February 12, 2009
 Sample-specific Parameter Review? **Yes** Laboratory Performance Parameters? **Yes**
 Data Reviewer: Liz Kraak Date Completed: 03/06/09
 Peer Reviewer: Geoff Webb Date Completed: 03/09/09

The table below summarizes the results presented in this data package.

Field ID	Sample Type	Lab ID	Matrix	Analyses					
				Total Metals	Inorganics ²	BTEX (8260B)	GRO (8015M)	DRO & MORO (8015M)	Dissolved Methane (RSK 175)
FE-RG-11-7-397-PW-GPTF	SA	0902111-1	W	X	X ^m	X	X	X	X ^m
Trip Blank 011309	TB	0902111-2	W	---	---	X	---	---	---

Analyses:

BTEX = Benzene, Toluene, Ethylbenzene, m+p-Xylene, & o-Xylene DRO – Diesel Range Organics GRO – Gasoline Range Organics

MORO = Motor Oil Range Organics

¹ = Metals analysis include Barium, Boron, Calcium, Chromium, Iron, Lithium, Magnesium, Potassium, Sodium, Strontium (6010B) & Arsenic, Cadmium, Lead, Manganese, Selenium, Uranium (6020A) & Mercury (7470A)

² = Inorganic Parameters include Alkalinity, Bicarbonate, and Carbonate (Method 310.1); ammonia as N (Method 350.1) pH (Method 9040B); TDS (Method 160.1); Chloride, Bromide, Fluoride, Nitrate as N, Nitrate as N, Orthophosphate as P, and Sulfate (Method 300.0)

--- Parameters not analyzed for

Matrix: W = Water

QC Type: SA = Sample TB = Trip Blank X^m = Matrix Spike/Matrix Spike Duplicate

The data review was conducted in accordance with the Rulison Sampling and Analysis Plan for Operational and Environmental Monitoring within a Three-Mile Radius of Project Rulison, Revision 2, March, 2008.

General Overall Assessment:

Data are usable without qualification.
 Data are usable with qualification.

Case Narrative Summary: Except as noted in the table below, any of the issues noted in the laboratory case narrative potentially affecting data quality are addressed in the appropriate sections.

Review Parameter	Criteria Met?	Comments
Sample-specific Parameters	Complete with "Yes", "No", or "Not Applicable (N/A)".	For each "No" response, list what was out, associated acceptance limits, all qualified data, and bias direction or reference associated table with pertinent details.
COC & Sample Receipt	Yes	Samples were received intact and the cooler temperature was ≤ 6°C at the laboratory. Therefore, data qualification was not necessary.
	No	Due to the nature of the sample matrix, the sample aliquot for metals analysis for sample FE-RG-11-7-397-PW-GPTF was received at a pH>2. The laboratory added additional HNO ₃ to the bottle in an attempt to bring the final pH to <2 before proceeding with the analysis. Sample integrity was unlikely affected and qualification of data was not considered necessary.
Holding Times	No	The sample was analyzed for pH four days after collection, which exceeds the holding time requirement of immediate analysis. Therefore, the pH result was qualified as estimated (J HT-I) with an indeterminate bias.

Review Parameter	Criteria Met?	Comments
Method Blanks and CCBs	No	<p>With the exceptions listed below in Table 1, target analytes were not reported as detected within the associated method blanks (MBs) or continuing calibration blanks (CCBs).</p> <p>Several target metals were detected in the MB and CCBs. Only the results for the samples bracketed by the CCBs listed in the table were qualified. As no samples were bracketed by the initial calibration blank (ICB), data qualification was not issued based on ICB contamination. The highest CCB concentration associated with the samples reported in this data package was used to assign data qualification.</p>
Matrix QC <ul style="list-style-type: none"> • MS/MSD FE-RG-11-7-397-PW-GPTF (Dissolved Methane, Anions) • LD FE-RG-11-7-397-PW-GPTF (Alkalinity, Bicarbonate, Carbonate, pH) 	No	<p>MS/MSD</p> <p>With the exceptions listed in Table 2 below, the recoveries and RPDs for the matrix spike (MS) and matrix spike duplicate (MSD) analyses were within the laboratory-determined acceptance range.</p> <p>The MS/MSD recoveries for sample FE-RG-11-7-397-PW-GPTF could not be evaluated for dissolved methane because the results in the native sample were greater than four times the concentration of the spike added during digestion. Since the sample concentrations are so much greater than the spike added, the MS/MSD recoveries are not considered to be a representative measure of accuracy. Further action or data qualification was not necessary.</p>
	Yes	<p>Laboratory Duplicate</p> <p>The agreement between parent sample results and the lab duplicate sample results was evaluated for alkalinities and pH; and the results met the evaluation criteria.</p>
Field QC <ul style="list-style-type: none"> • Field Blanks (Ambient, Rinsate, or Trip) Trip Blank 011309 • Field Duplicate NA 	Yes	<p>Target analytes were not reported as detected in the trip blank. Data qualification was not required.</p> <p>A field duplicate was not collected in association with this sampling event.</p>
Method QC <ul style="list-style-type: none"> • Serial Dilutions (SD) • Post Digestion Spike (PDS) • Cation/Anion Balance & Total vs. Partial Analyses • Internal Standards • Surrogates 	NA	<p>Serial Dilutions</p> <p>A serial dilution was not performed on samples from this data package.</p>
	NA	<p>Post Digestion Spike</p> <p>A post digestion spike was not performed on samples from this data package.</p>
	Yes	<p>Cation/Anion Balance and Total vs. Partial Analyses</p> <p>As only total metals results were reported in this data package, a cation/ anion balance and total vs. partial analysis could not be performed. Further action was not necessary.</p>
	Yes	<p>Internal Standards</p> <p>Internal standards were within the laboratory-determined acceptance limits. Data qualification was not considered necessary.</p>
	Yes	<p>Surrogates</p> <p>All surrogate recoveries were within the laboratory determined acceptance limits. Data qualification was not required.</p> <p>For the diluted DRO and MORO analysis of samples FE-RG-11-7-397-PW-GPTF, the surrogate recoveries for the surrogates could not be calculated because the extracts were diluted beyond the ability to quantitate the surrogate recoveries. Due to the dilutions, it was not considered applicable for the surrogate recoveries to be evaluated as a measure of accuracy and data qualification was not considered necessary.</p>
Interference Check Sample	Yes	<p>No interferent elements were present in the samples at concentrations greater than that in the ICS A and ICS AB solutions. Also, the ICSA percent recoveries were within acceptance limits of 80-120%. Data qualification was not required.</p>

Review Parameter	Criteria Met?	Comments
Non-detect Results with Elevated RLs?	No	<p>Many of the analyses in this data package were run at dilutions and were reported as detected with the following exceptions. Due to high levels of dissolved salts in the sample the laboratory analyzed the anions at dilutions to minimize the amount of salts loaded into the analytical column and to protect the integrity of the instrument. Some anion results were reported as non-detect at elevated reporting limits. Some metals results were also reported as non-detect at elevated reporting limits. These elevated reporting limits will need to be evaluated by the end user in terms of the project objectives.</p> <p>For the BTEX sample that was analyzed and re-analyzed at dilutions due to a high concentration of target analytes above the calibration levels, the analytical results that exceeded the calibration range in the lower diluted analysis were selected for reporting from the higher diluted analysis. The remaining analytes were selected for reporting from the lower diluted analysis, unless reported at a higher concentration in the higher diluted analyses. No results were reported as non-detect at elevated reporting limits.</p>
Package Completeness	Yes	Analytical results in this package are considered usable as qualified and are considered 100% complete.
Other Parameters <ul style="list-style-type: none"> • LCS • CCV • Laboratory Qualifiers 	Yes	LCS LCS recoveries were within the laboratory established acceptance limits. Therefore, data qualification was not considered necessary.
	Yes	CCV CCV recoveries bracketing samples were within the method acceptance limits. Therefore, data qualification was not considered necessary.
	Yes	Laboratory Qualifiers The laboratory flagged GRO, DRO, and RRO results with a Z, G, D, M, or L to indicate the location of the result in the carbon chain range. Further action was not considered necessary.

Table 1: Blank Outliers and Resultant Data Qualification

Analyte	Blank	Concentration	Data Qualification	
Metals				
Nitrate as N	MB	0.033 mg/L	None. The associated nitrate as N result was reported as non-detect.	
Chloride	CCB 1	0.11 mg/L	None. The associated chloride result was reported at a concentration >5x the blank contamination.	
Orthophosphate as P	CCB 2	0.577 mg/L	None. The associated orthophosphate as P result was reported as non-detect.	
Sulfate	CCB 1	0.257 mg/L	None. The associated sample results were either reported at concentrations >5x positive or >4x the negative blank contamination.	
Barium	MB CCB 3	0.27 µg/L 0.267 µg/L		
Boron	CCB 2	0.176 µg/L		
Calcium	CCB 3	-22.5 µg/L		
Chromium	CCB 3	-0.667 µg/L		
Iron	CCB 2	-2.06 µg/L		
Lithium	MB CCB 3	5.3 µg/L 5.34 µg/L		
Magnesium	MB CCB 3	-20 µg/L -19.1 µg/L		
Potassium	MB CCB 3	300 µg/L 305 µg/L		
Sodium	MB CCB 5	230 µg/L 237 µg/L		
Strontium	MB CCB 3	-0.55 µg/L -0.575 µg/L		
Arsenic	MB CCB 2	0.25 µg/L 0.0203 µg/L		
Cadmium	MB CCB 2	0.04 µg/L 0.00461 µg/L		The associated listed analytical results were qualified as non-detect (U MB-D) at the reporting limit.
Lead	MB CCB 2	0.048 µg/L 0.0070 µg/L		
Selenium	MB CCB 2	0.46 µg/L 0.0236 µg/L		
Uranium	MB CCB 2	0.024 µg/L 0.00344 µg/L		
Mercury	MB CCB 1	0.014 µg/L 0.0217 µg/L		

CCB – Continuing Calibration Blank MB – Method Blank mg/L – Milligrams per Liter µg/L – Micrograms per Liter
 U – Non-detect I – Indeterminate Bias

Table 2: MS/MSD Recovery Outliers and Resultant Data Qualification

Sample	Analyte	%R (Limits)	Qualification
Anions			
FE-RG-11-7-397-PW-GPTF	Fluoride	41/ 41 (85-115)	As the potential bias was considered to be low, the fluoride and nitrite as N results for sample FE-RG-11-7-397-PW-GPTF were qualified as estimated (J MS-L).
	Nitrite as N	71/ 68 (85-115)	
	Orthophosphate as P	123/ 116 (85-116)	None. As the potential bias is considered to be high and the results were reported as non-detect, data qualification was not necessary.

%R – Percent Recovery J – Estimated L – Low Bias H – High Bias

GC/MS Volatiles

Method SW8260B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: Trip Blank 011309
Lab ID: 0902111-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Feb-09
Date Extracted: 19-Feb-09
Date Analyzed: 19-Feb-09
Prep Method: SW5030 Rev C

Prep Batch: VL090219-2
QCBatchID: VL090219-2-2
Run ID: VL090219-2A
Cleanup: NONE
Basis: As Received
File Name: B55315

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
71-43-2	BENZENE	1	5	5	1.7	U	
108-88-3	TOLUENE	1	5	5	1.7	U	
100-41-4	ETHYLBENZENE	1	5	5	1.7	U	
136777-61-2	M+P-XYLENE	1	5	5	1.7	U	
95-47-6	O-XYLENE	1	5	5	1.7	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	52.9		50	106	74 - 123
1868-53-7	DIBROMOFLUOROMETHANE	43.4		50	87	79 - 120
2037-26-5	TOLUENE-D8	46.1		50	92	83 - 120

EE 3/6/09

Data Package ID: VL0902111-1

Date Printed: Wednesday, February 25, 2009

ALS Paragon

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LIMS Version: 6.247A

GC/MS Volatiles

Method SW8260B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Feb-09
Date Extracted: 19-Feb-09
Date Analyzed: 19-Feb-09
Prep Method: SW5030 Rev C

Prep Batch: VL090219-2
QCBatchID: VL090219-2-2
Run ID: VL090219-2A
Cleanup: NONE
Basis: As Received
File Name: B55336

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
71-43-2	BENZENE *	200	8000	1000	330		
108-88-3	TOLUENE	200	16000	1000	330		
100-41-4	ETHYLBENZENE	200	590	1000	330	J	J SQL-I
136777-61-2	M+P-XYLENE	200	6800	1000	330		
95-47-6	O-XYLENE DNR	200	1200	1000	330		

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	10800		10000	108	74 - 123
1868-53-7	DIBROMOFLUOROMETHANE	8560		10000	86	79 - 120
2037-26-5	TOLUENE-D8	9210		10000	92	83 - 120

* = Selected for reporting.
DNR = Do not report.

EE 3/6/09

Data Package ID: VL0902111-1

Date Printed: Wednesday, February 25, 2009

ALS Paragon

LIMS Version: 6.247A

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GC/MS Volatiles

Method SW8260B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1RR1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Feb-09
Date Extracted: 19-Feb-09
Date Analyzed: 19-Feb-09
Prep Method: SW5030 Rev C

Prep Batch: VL090219-2
QCBatchID: VL090219-2-2
Run ID: VL090219-2A
Cleanup: NONE
Basis: As Received
File Name: B55337

Sample Aliquot: 5 ml
Final Volume: 5 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
71-43-2	BENZENE <i>DNR</i>	50	8000	250	83	E	
108-88-3	TOLUENE <i>DNR</i>	50	16000	250	83	F	
100-41-4	ETHYLBENZENE	50	570	250	83		
136777-61-2	M+P-XYLENE	50	6700	250	83		
95-47-6	O-XYLENE *	50	1200	250	83		

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	2710		2500	108	74 - 123
1868-53-7	DIBROMOFLUOROMETHANE	2170		2500	87	79 - 120
2037-26-5	TOLUENE-D8	2320		2500	93	83 - 120

DNR = do not report.
** = selected for reporting.*

EE 3/6/09

Data Package ID: VL0902111-1

Date Printed: Wednesday, February 25, 2009

ALS Paragon

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LIMS Version: 6.247A

Dissolved Gasses

Method RSK175

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Feb-09

Date Extracted: 25-Feb-09

Date Analyzed: 25-Feb-09

Prep Method: METHOD

Prep Batch: HC090225-1

QC Batch ID: HC090225-1-2

Run ID: HC090225-1A

Cleanup: NONE

Basis: As Received

File Name: 00985.dat

Sample Aliquot: 38.5 ml

Final Volume: 38.5 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
74-82-8	METHANE	1	2400	1		

EE 3/6/09

Data Package ID: HC0902111-1

Date Printed: Friday, February 27, 2009

ALS Paragon

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LIMS Version: 6.248A

Total Extractable Hydrocarbons

Method SW8015MCALUFTB

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Feb-09
Date Extracted: 16-Feb-09
Date Analyzed: 18-Feb-09
Prep Method: SW3510 Rev C

Prep Batch: EX090216-5
QCBatchID: EX090216-5-1
Run ID: HCD090218-3A
Cleanup: NONE
Basis: As Received
File Name: F3F33467

Sample Aliquot: 1055 ml
Final Volume: 2.5 ml
Result Units: MG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
68334-30-5	DIESEL RANGE ORGANICS	100	830	9.5	3.2	D,Z	
	MOTOR OIL RANGE ORGANICS	100	120	9.5	3.2	Z	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
84-15-1	O-TERPHENYL		X	0.237		60 - 140

The chromatogram for DIESEL RANGE ORGANICS indicates the presence of hydrocarbons in the range of C8-C21.

The chromatogram for MOTOR OIL RANGE ORGANICS indicates the presence of hydrocarbons in the range of C21-C32.

ER 3/6/09

Data Package ID: HCD0902111-1

Date Printed: Friday, February 20, 2009

ALS Paragon

LIMS Version: 6.245A

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Gasoline Range Organics

Method SW8015B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF	Sample Matrix: WATER	Prep Batch: HCG090217-1	Sample Aliquot: 5 ml
Lab ID: 0902111-1	% Moisture: N/A	QC Batch ID: HCG090217-1-1	Final Volume: 5 ml
	Date Collected: 12-Feb-09	Run ID: HCG090217-1A	Result Units: MG/L
	Date Extracted: 17-Feb-09	Cleanup: NONE	Clean DF: 1
	Date Analyzed: 17-Feb-09	Basis: As Received	
	Prep Method: SW5030 Rev B	File Name: 00860.dat	

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
8006-61-9	GASOLINE RANGE ORGANICS	100	190	10	2.6	G,H	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
193533-92-5	2,3,4-TRIFLUOROTOLUENE	11.9		10	119	74 - 129

EW 3/6/09

Data Package ID: HCG0902111-1

Date Printed: Thursday, February 19, 2009

ALS Paragon

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LIMS Version: 6.245A

BICARBONATE AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: URS
Client Project ID: Williams-Rio Blanca 22240417.00001
Work Order Number: 0902111
Reporting Basis: As Received
Prep Method: NONE
Final Volume: 100 ml
Matrix: WATER
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-11-7-397-PW-GPTF	0902111-1	02/12/2009	02/16/2009	02/16/2009	N/A	1	1100	50		10 ml

EE 3/6/09

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0902111-1

CARBONATE AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: URS
Client Project ID: Williams-Rio Blanca 22240417.00001
Work Order Number: 0902111 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-11-7-397-PW-GPTF	0902111-1	02/12/2009	02/16/2009	02/16/2009	N/A	1	50	50	U	10 ml

EQ 3/6/09

Comments:

- 1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0902111-1

TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Sample Results

Lab Name: ALS Paragon
Client Name: URS
Client Project ID: Williams-Rio Blanca 22240417.00001
Work Order Number: 0902111 Final Volume: 100 ml
Reporting Basis: As Received Matrix: WATER
Prep Method: NONE Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
FE-RG-11-7-397-PW-GPTF	0902111-1	02/12/2009	02/16/2009	02/16/2009	N/A	1	1100	50		10 ml

EE 3/6/09

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0902111-1

Ammonia as N

Method EPA350.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF

Lab ID: 0902111-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Feb-09

Date Extracted: 20-Feb-09

Date Analyzed: 20-Feb-09

Prep Method: NONE

Prep Batch: NH090220-1

QC Batch ID: NH090220-1-1

Run ID: nh090220-2a

Cleanup: NONE

Basis: As Received

File Name: 0220NH.FDT

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7664-41-7	AMMONIA AS N	20	21	2	0.6		

EE 3/6/09

Data Package ID: nh0902111-1

Date Printed: Tuesday, February 24, 2009

ALS Paragon

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LIMS Version: 6.246A

pH

Method SW9040B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
 Lab ID: 0902111-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Feb-09

Date Extracted: 16-Feb-09

Date Analyzed: 16-Feb-09

Prep Method: NONE

Prep Batch: PH090216-1

QCBatchID: PH090216-1-2

Run ID: ph090216-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 20 ml

Final Volume: 20 ml

Result Units: pH

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-29-7	PH	1	7.09	0.1		JHT-I

EE 3/6/09

Data Package ID: *ph0902111-1*

Total Dissolved Solids

Method EPA160.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Feb-09

Date Extracted: 16-Feb-09

Date Analyzed: 17-Feb-09

Prep Method: METHOD

Prep Batch: TD090216-1

QC Batch ID: TD090216-1-1

Run ID: td090217-1a

Cleanup: NONE

Basis: As Received

File Name: Manual Entry

Sample Aliquot: 2 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	18000	1000		

EE 3/6/09

Data Package ID: td0902111-1

Date Printed: Tuesday, February 24, 2009

ALS Paragon

LIMS Version: 6.246A

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Ion Chromatography

Method EPA300.0 Revision 2.1

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Feb-09

Date Extracted: 13-Feb-09

Date Analyzed: 13-Feb-09

Prep Method: NONE

Prep Batch: IC090213-1

QCBatchID: IC090213-1-1

Run ID: ic090213-2a

Cleanup: NONE

Basis: As Received

File Name: 90213_018.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	50	5	5	1.1	U	N
16887-00-6	CHLORIDE	1000	9600	200	91		
14797-65-0	NITRITE AS N	50	5	5	1.9	U	N
24959-67-9	BROMIDE	50	58	10	4.8		
14797-55-8	NITRATE AS N	50	10	10	1.3	U	
14265-44-2	ORTHOPHOSPHATE AS P	50	25	25	6.5	U	N
14808-79-8	SULFATE	50	25	50	11	J	J SQL-I

UJ MS-L

UJ MS-L

EQ 3/6/09

Data Package ID: ic0902111-1

Date Printed: Tuesday, February 24, 2009

ALS Paragon

LIMS Version: 6.246A

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Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Feb-09

Date Extracted: 17-Feb-09

Date Analyzed: 18-Feb-09

Prep Method: SW3005 Rev A

Prep Batch: IP090217-1

QCBatchID: IP090217-1-3

Run ID: IT090218-2A2

Cleanup: NONE

Basis: As Received

File Name: 090218A

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	10	65000	1000	1.4		
7440-42-8	BORON	10	14000	1000	26		
7440-70-2	CALCIUM	10	180000	10000	140		
7440-47-3	CHROMIUM	10	100	100	7.3	U	
7439-89-6	IRON	10	12000	1000	36		
7439-93-2	LITHIUM	10	7400	100	1.5		
7439-95-4	MAGNESIUM	10	21000	10000	52		
7440-09-7	POTASSIUM	10	390000	10000	300		
7440-23-5	SODIUM	100	6000000	100000	600		
7440-24-6	STRONTIUM	10	33000	100	0.6		

Data Package ID: IT0902111-1

Date Printed: Wednesday, February 25, 2009

ALS Paragon

LIMS Version: 6.247A

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Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF
Lab ID: 0902111-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Feb-09
Date Extracted: 17-Feb-09
Date Analyzed: 18-Feb-09
Prep Method: SW3005 Rev A

Prep Batch: IP090217-1
QCBatchID: IP090217-1-4
Run ID: IM090218-1A2
Cleanup: NONE
Basis: As Received
File Name: 18FEB09A

Sample Aliquot: 50 g
Final Volume: 50 g
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7440-38-2	ARSENIC	10	3.6	2	0.16		
7440-43-9	CADMIUM	10	0.3 0.42	0.3	0.03	B	U MB-I
7439-92-1	LEAD	10	0.5 0.41	0.5	0.024	B	U MB-I
7439-96-5	MANGANESE	10	300	2	0.058		
7782-49-2	SELENIUM	10	1 0.93	1	0.18	B	U MB-I
7440-61-1	URANIUM	10	0.1 0.037	0.1	0.0041	B	U MB-I

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Data Package ID: IM0902111-1

Date Printed: Wednesday, February 25, 2009

ALS Paragon

LIMS Version: 6.247A

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Total Mercury

Method SW7470A

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902111

Client Name: URS

ClientProject ID: Williams-Rio Blanca 22240417.00001

Field ID: FE-RG-11-7-397-PW-GPTF	Sample Matrix: WATER	Prep Batch: HG090220-1	Sample Aliquot: 20 g
Lab ID: 0902111-1	% Moisture: N/A	QCBatchID: HG090220-1-1	Final Volume: 20 g
	Date Collected: 12-Feb-09	Run ID: HG090223-2A5	Result Units: UG/L
	Date Extracted: 20-Feb-09	Cleanup: NONE	Clean DF: 1
	Date Analyzed: 23-Feb-09	Basis: As Received	
	Prep Method: METHOD	File Name: 09022301	

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	MDL	Result Qualifier	EPA Qualifier
7439-97-6	MERCURY	1	0.24	0.2	0.0081		

EE 3/6/09

Data Package ID: HG0902111-1

Date Printed: Wednesday, February 25, 2009

ALS Paragon

LIMS Version: 6.247A

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