

ACZ Laboratories Inc.

To: Analytical Staff
From: Kristen Russell
Cc: Audrey Stover, Matt Sowards
Subject: CAR879

PT Study WS-135 [L65875]

Open: 10/5/07

Close: 11/19/07

ACZ received the results of ERA's WS – 135 study. Unacceptable results and corrective actions follow:

Not Acceptable Results							
Parameter	Method	Units	Reported Value	Assigned Value	Limits	%R	WG#
Ag	200.8	ug/L	199	240	212 – 265	83	235000
Ca	200.7	mg/L	92.8	82.4	73.4 – 90.8	113	236123
Mg	200.7	mg/L	7.87	6.96	6.23 – 7.83	113	236123
Na	200.7	mg/L	18.7	16.3	14.3 – 18.0	115	236123
Ca Hardness	SM2340B	mg/L	264	206	183 – 227	128	

CORRECTIVE ACTIONS

Silver – Ag was analyzed by EPA 200.8 and the reported value was outside of the acceptance limits. A review of the workgroup indicates that ICV = 106%, LFB = 104%, CCV2 = 97%, and CCV3 = 99%. The sample was subjected to a total recoverable digestion prior to analysis and was tested on a 5x dilution.

A full-volume QC standard was analyzed as a single-blind sample (L68544-02). The measured concentration of 286 ug/L is within the QC PALs acceptance limits (92% of assigned value). The system is judged to be in control.

Calcium, Magnesium, Sodium – Ca, Mg, and Na were analyzed by EPA 200.7 and the reported values were outside of the acceptance limits. No problems or anomalies with the analysis were noted. The accuracy achieved for each analyte is at the level of performance reported to clients (LFB limits for 200.7 are 85 – 115%), and the system is judged to be in control.

No further corrective action required.

Calcium Hardness – The value of 264 mg/L reported as Ca Hardness should have been reported as Total Hardness by SM2340B. For environmental samples, Total Hardness is determined by a calculation performed in the database; therefore, this error would not have occurred.

No further corrective action is required.



**ENVIRONMENTAL
RESOURCE ASSOCIATES®**
The Industry Standard™

L 65875

Kristen Russell
ACZ Laboratories
2773 Downhill Drive
Steamboat Springs, CO 80487

WS-135



Final Report

WatR™ Supply Proficiency Testing

WatR™ Supply Study

Open Date: 10/05/07

Close Date: 11/19/07

Report Issued Date: 12/10/07



**ENVIRONMENTAL
RESOURCE ASSOCIATES®**
The Industry Standard™

Study: **WS-135**

ERA Customer Number: **A144801**

Laboratory Name: **ACZ Laboratories**

Inorganic Results



WS-135 Final Complete Report



**ENVIRONMENTAL
RESOURCE ASSOCIATES®**
The Industry Standard™

Kristen Russell
QA/QC Officer
ACZ Laboratories
2773 Downhill Drive
Steamboat Springs, CO 80487
(970) 879-6590

EPA ID: CO00028
ERA Customer Number: A144801
Report Issued: 12/10/07
Study Dates: 10/05/07 - 11/19/07

Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
WS Metals							
1000	Aluminum	µg/L	607	620	527 - 702	Acceptable	EPA 200.7
0140	Antimony	µg/L	14.8	12.9	9.03 - 16.8	Acceptable	EPA 200.8
0001	Arsenic	µg/L	41.4	37.7	26.4 - 49.0	Acceptable	EPA 200.8
0002	Barium	µg/L	982	923	784 - 1060	Acceptable	EPA 200.8
0141	Beryllium	µg/L	6.63	6.64	5.64 - 7.64	Acceptable	EPA 200.8
0226	Boron	µg/L		1680	1470 - 1860	Not Reported	
0003	Cadmium	µg/L	44.5	45.0	36.0 - 54.0	Acceptable	EPA 200.8
0004	Chromium	µg/L	151	148	126 - 170	Acceptable	EPA 200.8
0091	Copper	µg/L	989	963	867 - 1060	Acceptable	EPA 200.8
1070	Iron	µg/L	577	570	500 - 631	Acceptable	EPA 200.7
0005	Lead	µg/L	22.1	21.3	14.9 - 27.7	Acceptable	EPA 200.8
0236	Manganese	µg/L	795	792	713 - 871	Acceptable	EPA 200.7
0237	Molybdenum	µg/L		105	91.4 - 116	Not Reported	
0142	Nickel	µg/L	126	122	104 - 140	Acceptable	EPA 200.8
0007	Selenium	µg/L	76.2	72.4	57.9 - 86.9	Acceptable	EPA 200.8
1150	Silver	µg/L	199	240	212 - 265	Not Acceptable	EPA 200.8
0143	Thallium	µg/L	4.79	4.69	3.28 - 6.10	Acceptable	EPA 200.8
1185	Vanadium	µg/L		665	598 - 732	Not Reported	
0239	Zinc	µg/L	1070	1070	963 - 1180	Acceptable	EPA 200.7

WS pH

0026	pH	S.U.	5.34	5.30	5.10 - 5.50	Acceptable	SM 4500 H+ B
------	----	------	------	------	-------------	------------	--------------

WS Inorganics

0027	Alkalinity as CaCO ₃	mg/L	28.7	29.8	26.8 - 33.8	Acceptable	SM 2320 B
1575	Chloride	mg/L	41.2	40.9	36.7 - 45.3	Acceptable	EPA 300.0
1610	Conductivity at 25°C	µmhos/cm	464	439	395 - 483	Acceptable	SM 2510 B
0010	Fluoride	mg/L	5.41	5.54	4.99 - 6.09	Acceptable	EPA 300.0
1820	Nitrate + Nitrite as N	mg/L	4.29	3.97	3.51 - 4.37	Acceptable	EPA 353.2
0009	Nitrate as N	mg/L	4.29	3.97	3.57 - 4.37	Acceptable	EPA 353.2
1125	Potassium	mg/L		22.5	19.4 - 25.9	Not Reported	
0145	Sulfate	mg/L	73.7	74.8	65.4 - 83.8	Acceptable	EPA 300.0
0024	Total Dissolved Solids at 180°C	mg/L	278	278	183 - 373	Acceptable	SM 2540 C



WS-135 Final Complete Report



**ENVIRONMENTAL
RESOURCE ASSOCIATES®**
The Industry Standard™

Kristen Russell
QA/QC Officer
ACZ Laboratories
2773 Downhill Drive
Steamboat Springs, CO 80487
(970) 879-6590

EPA ID: CO00028
ERA Customer Number: A144801
Report Issued: 12/10/07
Study Dates: 10/05/07 - 11/19/07

Anal. No.	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
WS Inorganics							
0027	Alkalinity as CaCO ₃	mg/L		29.8	26.8 - 33.8	Not Reported	SM 4500 F- C
1575	Chloride	mg/L		40.9	36.7 - 45.3	Not Reported	
1610	Conductivity at 25 °C	µmhos/cm		439	395 - 483	Not Reported	
0010	Fluoride	mg/L	5.35	5.54	4.99 - 6.09	Acceptable	
1820	Nitrate + Nitrite as N	mg/L		3.97	3.51 - 4.37	Not Reported	
0009	Nitrate as N	mg/L		3.97	3.57 - 4.37	Not Reported	
1125	Potassium	mg/L		22.5	19.4 - 25.9	Not Reported	
0145	Sulfate	mg/L		74.8	65.4 - 83.8	Not Reported	
0024	Total Dissolved Solids at 180 °C	mg/L		278	183 - 373	Not Reported	
WS Turbidity							
0023	Turbidity	NTU	3.92	4.29	3.76 - 5.13	Acceptable	EPA 180.1
WS Nitrite							
0092	Nitrite as N	mg/L	1.60	1.49	1.27 - 1.71	Acceptable	EPA 353.2
WS o-Phosphate Nutrients							
0261	ortho-Phosphate as P	mg/L	1.22	1.30	1.12 - 1.50	Acceptable	EPA 365.1
WS Cyanide							
0146	Cyanide	mg/L	0.364	0.382	0.286 - 0.478	Acceptable	EPA 335.4
WS Organic Carbon							
1710	Dissolved Organic Carbon (DOC)	mg/L		2.82	2.32 - 3.36	Not Reported	SM 5310 B
0263	Total Organic Carbon (TOC)	mg/L	2.87	2.82	2.32 - 3.36	Acceptable	
WS Bromide, Bromate & Chlorate							
0193	Bromate	µg/L		38.1	26.7 - 49.5	Not Reported	EPA 300.0
0260	Bromide	µg/L	419	439	341 - 542	Acceptable	
0194	Chlorate	µg/L		123	100 - 142	Not Reported	
WS Hardness							
1035	Calcium	mg/L	92.8	82.4	73.4 - 90.8	Not Acceptable	EPA 200.7
1085	Magnesium	mg/L	7.87	6.96	6.23 - 7.83	Not Acceptable	EPA 200.7
0029	Sodium	mg/L	18.7	16.3	14.3 - 18.0	Not Acceptable	EPA 200.7
0025	Calcium Hardness as CaCO ₃	mg/L	264	206	183 - 227	Not Acceptable	SM 2340 B
1755	Total Hardness as CaCO ₃	mg/L		234	209 - 259	Not Reported	
WS Silica							
1990	Silica as SiO ₂	mg/L	42.6	39.9	33.9 - 45.9	Acceptable	EPA 200.7

