Mountain States ACCUTEST LABORATORIES

04/09/14

Technical Report for

Confluence Energy

Pertson Ridge 01-20H

Accutest Job Number: D56463

Sampling Date: 03/31/14

Report to:

Confluence Energy
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ATTN: Mark Mathis

Total number of pages in report: **81**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Sample Summary

Confluence Energy

Pertson Ridge 01-20H

Job No: D56463

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D56463-1	03/31/14	13:00	MJM	04/02/14	SO	Soil	PETESON RIDGE 01-20H CUTTINGS
D56463-1A	03/31/14	13:00	MJM	04/02/14	SO	Soil	PETESON RIDGE 01-20H CUTTINGS
D56463-2	03/31/14	13:00	MJM	04/02/14	SO	Soil	PETESON RIDGE 01-20H BACKGROUND
D56463-2A	03/31/14	13:00	MJM	04/02/14	SO	Soil	PETESON RIDGE 01-20H BACKGROUND

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Confluence Energy	**Job No**	D56463
Site:	Pertson Ridge 01-20H	**Report Date**	4/9/2014 3:41:52 PM

On 04/02/2014, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 22.4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D56463 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix SO **Batch ID:** V3V1750

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56609-1MS, D56609-2DUP were used as the QC samples indicated.

Extractables by GCMS By Method SW846 8270C BY SIM

Matrix SO **Batch ID:** OP9686

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D56389-1MS, D56389-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Volatiles by GC By Method SW846 8015B

Matrix SO **Batch ID:** GGB1336

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56463-1MS, D56463-1MSD were used as the QC samples indicated.
- The matrix spike duplicate (MSD) recovery(s) of TPH-GRO (C6-C10) are outside control limits. Probable cause due to matrix interference.

Extractables by GC By Method SW846-8015B

Matrix SO **Batch ID:** OP9681

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) D56366-6MS, D56366-6MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals By Method SW846 6010C

Matrix	AQ	Batch ID:	MP12679

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56389-8AMS, D56389-8AMSD, D56389-8ASDL were used as the QC samples for the metals analysis.
- The serial dilution RPD(s) for Magnesium are outside control limits for sample MP12679-SD1. Probable cause due to sample homogeneity.
- MP12679-SD1 for Magnesium: Serial dilution indicates possible matrix interference.

Matrix	SO	Batch ID:	MP12646

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56463-1MSD, D56463-1SDL, D56463-1MS, D56463-1MSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Zinc are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- The matrix spike (MS) recovery(s) of Barium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
- The serial dilution RPD(s) for Lead, Chromium, Nickel, Zinc are outside control limits for sample MP12646-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- MP12646-SD1 for Chromium: Serial dilution indicates possible matrix interference.
- MP12646-SD1 for Nickel: Serial dilution indicates possible matrix interference.
- MP12646-SD1 for Zinc: Serial dilution indicates possible matrix interference.

Metals By Method SW846 6020A

Matrix	SO	Batch ID:	MP12647

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56463-1MS, D56463-1MSD, D56463-1SDL were used as the QC samples for the metals analysis.

Metals By Method SW846 7471B

Matrix	SO	Batch ID:	MP12636

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56367-1MS, D56367-1MSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method ASTM D1498-76M

Matrix	SO	Batch ID:	GN24248

- Sample(s) D56577-1DUP were used as the QC samples for the Redox Potential Vs H2 analysis.

Wet Chemistry By Method SM2540G-2011 M

Matrix	SO	Batch ID:	GN24189

- The data for SM2540G-2011 M meets quality control requirements.

Wet Chemistry By Method SW846 3060A/7196A

Matrix	SO	Batch ID:	GP12292

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D56389-2MS, D56389-2MSD, D56389-2DUP were used as the QC samples for the Chromium, Hexavalent analysis.
- The duplicate RPD(s) for Chromium, Hexavalent are outside control limits for sample GP12292-D1. RPD acceptable due to low duplicate and sample concentrations.

Wet Chemistry By Method SW846 3060A/7196A M

Matrix	SO	Batch ID:	R21010

- The data for SW846 3060A/7196A M meets quality control requirements.
- D56463-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix	SO	Batch ID:	R21011

- The data for SW846 3060A/7196A M meets quality control requirements.
- D56463-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Wet Chemistry By Method SW846 9045D

Matrix	SO	Batch ID:	GN24215

- The following samples were run outside of holding time for method SW846 9045D: D56463-1, D56463-2

Wet Chemistry By Method USDA HANDBOOK 60

Matrix	SO	Batch ID:	MP12679

- D56463-1A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]
- D56463-2A for Sodium Adsorption Ratio: Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+(Mg meq/L)/2]

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D56463
Account: Confluence Energy
Project: Pertson Ridge 01-20H
Collected: 03/31/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D56463-1	**PETESON RIDGE 01-20H CUTTINGS**					
Benzene		53.3 J	98	37	ug/kg	SW846 8260B
Toluene		321	200	98	ug/kg	SW846 8260B
Ethylbenzene		234	200	37	ug/kg	SW846 8260B
Xylene (total)		857	390	200	ug/kg	SW846 8260B
Acenaphthene		11.4	6.4	4.9	ug/kg	SW846 8270C BY SIM
Benzo(a)anthracene		10.1	6.4	3.1	ug/kg	SW846 8270C BY SIM
Chrysene		13.3	6.4	3.1	ug/kg	SW846 8270C BY SIM
Fluoranthene		8.3	6.4	3.6	ug/kg	SW846 8270C BY SIM
Fluorene		43.8	6.4	4.6	ug/kg	SW846 8270C BY SIM
Naphthalene		65.8	6.4	3.8	ug/kg	SW846 8270C BY SIM
Pyrene		13.0	6.4	3.8	ug/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)		60.8	20	9.8	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		359	9.9	7.4	mg/kg	SW846-8015B
Arsenic		9.9	0.15		mg/kg	SW846 6020A
Barium		5540	15		mg/kg	SW846 6010C
Cadmium		2.1	1.5		mg/kg	SW846 6010C
Chromium		11.4	1.5		mg/kg	SW846 6010C
Copper		39.6	1.5		mg/kg	SW846 6010C
Lead		11.9	7.4		mg/kg	SW846 6010C
Nickel		24.9	4.5		mg/kg	SW846 6010C
Zinc		90.3	4.5		mg/kg	SW846 6010C
Specific Conductivity		2560	1.0		umhos/cm	SM 2510B-2011 MOD
Chromium, Trivalent [a]		11.4	2.5		mg/kg	SW846 3060A/7196A M
Redox Potential Vs H2		345			mv	ASTM D1498-76M
pH		8.63			su	SW846 9045D
D56463-1A	**PETESON RIDGE 01-20H CUTTINGS**					
Calcium		86.2	2.0		mg/l	SW846 6010C
Magnesium		9.29	1.0		mg/l	SW846 6010C
Sodium		684	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio [b]		18.7			ratio	USDA HANDBOOK 60
D56463-2	**PETESON RIDGE 01-20H BACKGROUND**					
Fluoranthene		3.0 J	5.1	2.8	ug/kg	SW846 8270C BY SIM
Fluorene		4.1 J	5.1	3.6	ug/kg	SW846 8270C BY SIM
Naphthalene		5.4	5.1	3.0	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)		23.3	7.8	5.8	mg/kg	SW846-8015B
Arsenic		2.0	0.11		mg/kg	SW846 6020A
Barium		224	1.1		mg/kg	SW846 6010C
Chromium		15.8	1.1		mg/kg	SW846 6010C
Copper		14.0	1.1		mg/kg	SW846 6010C

Summary of Hits

Job Number: D56463
Account: Confluence Energy
Project: Pertson Ridge 01-20H
Collected: 03/31/14

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Lead		6.3	5.7		mg/kg	SW846 6010C
Nickel		10.9	3.4		mg/kg	SW846 6010C
Zinc		38.6	3.4		mg/kg	SW846 6010C
Specific Conductivity		2300	1.0		umhos/cm	SM 2510B-2011 MOD
Chromium, Trivalent [a]		15.8	2.1		mg/kg	SW846 3060A/7196A M
Redox Potential Vs H2		506			mv	ASTM D1498-76M
pH		7.33			su	SW846 9045D
D56463-2A	**PETESON RIDGE 01-20H BACKGROUND**					
Calcium		220	2.0		mg/l	SW846 6010C
Magnesium		43.0	1.0		mg/l	SW846 6010C
Sodium		195	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio [b]		3.15			ratio	USDA HANDBOOK 60

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)
(b) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H CUTTINGS		
Lab Sample ID:	D56463-1	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
Method:	SW846 8260B	**Percent Solids:**	67.2
Project:	Pertson Ridge 01-20H		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V29919.D	1	04/08/14	JL	n/a	n/a	V3V1750
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	53.3	98	37	ug/kg	J
108-88-3	Toluene	321	200	98	ug/kg	
100-41-4	Ethylbenzene	234	200	37	ug/kg	
1330-20-7	Xylene (total)	857	390	200	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	93%		64-130%
460-00-4	4-Bromofluorobenzene	104%		62-131%
17060-07-0	1,2-Dichloroethane-D4	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H CUTTINGS		
Lab Sample ID:	D56463-1	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	67.2
Project:	Pertson Ridge 01-20H		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G18984.D	1	04/08/14	DC	04/07/14	OP9686	E3G940
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	11.4	6.4	4.9	ug/kg	
120-12-7	Anthracene	ND	6.4	4.4	ug/kg	
56-55-3	Benzo(a)anthracene	10.1	6.4	3.1	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	6.4	3.9	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	6.4	3.2	ug/kg	
50-32-8	Benzo(a)pyrene	ND	6.4	3.1	ug/kg	
218-01-9	Chrysene	13.3	6.4	3.1	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	6.4	3.1	ug/kg	
206-44-0	Fluoranthene	8.3	6.4	3.6	ug/kg	
86-73-7	Fluorene	43.8	6.4	4.6	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.4	3.1	ug/kg	
91-20-3	Naphthalene	65.8	6.4	3.8	ug/kg	
129-00-0	Pyrene	13.0	6.4	3.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		10-175%
321-60-8	2-Fluorobiphenyl	66%		25-130%
1718-51-0	Terphenyl-d14	71%		41-133%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H CUTTINGS		
Lab Sample ID:	D56463-1	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
Method:	SW846 8015B	**Percent Solids:**	67.2
Project:	Pertson Ridge 01-20H		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB24374.D	1	04/02/14	AR	n/a	n/a	GGB1336
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	60.8	20	9.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	129%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: PETESON RIDGE 01-20H CUTTINGS
Lab Sample ID: D56463-1
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: Pertson Ridge 01-20H

Date Sampled: 03/31/14
Date Received: 04/02/14
Percent Solids: 67.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI11668.D	1	04/07/14	JJ	04/04/14	OP9681	GFI735
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	359	9.9	7.4	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		20-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H CUTTINGS		
Lab Sample ID:	D56463-1	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
		Percent Solids:	67.2
Project:	Pertson Ridge 01-20H		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	9.9	0.15	mg/kg	5	04/03/14	04/04/14	NT	SW846 6020A [3]	SW846 3050B [7]
Barium	5540	15	mg/kg	10	04/03/14	04/04/14	KV	SW846 6010C [4]	SW846 3050B [6]
Cadmium	2.1	1.5	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Chromium	11.4	1.5	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Copper	39.6	1.5	mg/kg	1	04/03/14	04/04/14	KV	SW846 6010C [4]	SW846 3050B [6]
Lead	11.9	7.4	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Mercury	< 0.097	0.097	mg/kg	1	04/03/14	04/03/14	KV	SW846 7471B [2]	SW846 7471B [5]
Nickel	24.9	4.5	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Selenium	< 7.4	7.4	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Silver	< 4.5	4.5	mg/kg	1	04/03/14	04/04/14	KV	SW846 6010C [4]	SW846 3050B [6]
Zinc	90.3	4.5	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]

(1) Instrument QC Batch: MA4620
(2) Instrument QC Batch: MA4621
(3) Instrument QC Batch: MA4626
(4) Instrument QC Batch: MA4629
(5) Prep QC Batch: MP12636
(6) Prep QC Batch: MP12646
(7) Prep QC Batch: MP12647

RL = Reporting Limit

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H CUTTINGS		
Lab Sample ID:	D56463-1	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
		Percent Solids:	67.2
Project:	Pertson Ridge 01-20H		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	67.2		%	1	04/02/14	SWT	SM2540G-2011 M
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	2560	1.0	umhos/cm	1	04/08/14	JD	SM 2510B-2011 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	04/04/14	RW	SW846 3060A/7196A
Chromium, Trivalent [a]	11.4	2.5	mg/kg	1	04/04/14	RW	SW846 3060A/7196A M
Redox Potential Vs H2	345		mv	1	04/08/14	JD	ASTM D1498-76M
pH	8.63		su	1	04/03/14 11:10	JB	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H CUTTINGS		
Lab Sample ID:	D56463-1A	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
		Percent Solids:	67.2
Project:	Pertson Ridge 01-20H		

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	86.2	2.0	mg/l	1	04/08/14	04/08/14	KV	SW846 6010C [1]	SW846 3010A/M [2]
Magnesium	9.29	1.0	mg/l	1	04/08/14	04/08/14	KV	SW846 6010C [1]	SW846 3010A/M [2]
Sodium	684	2.0	mg/l	1	04/08/14	04/08/14	KV	SW846 6010C [1]	SW846 3010A/M [2]

(1) Instrument QC Batch: MA4639
(2) Prep QC Batch: MP12679

RL = Reporting Limit

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H CUTTINGS		
Lab Sample ID:	D56463-1A	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
		Percent Solids:	67.2
Project:	Pertson Ridge 01-20H		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	18.7		ratio	1	04/08/14 20:09	KV	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H BACKGROUND		
Lab Sample ID:	D56463-2	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
Method:	SW846 8260B	**Percent Solids:**	85.7
Project:	Pertson Ridge 01-20H		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V29920.D	1	04/08/14	JL	n/a	n/a	V3V1750
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	66	25	ug/kg	
108-88-3	Toluene	ND	130	66	ug/kg	
100-41-4	Ethylbenzene	ND	130	25	ug/kg	
1330-20-7	Xylene (total)	ND	260	130	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	90%		64-130%
460-00-4	4-Bromofluorobenzene	103%		62-131%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H BACKGROUND		
Lab Sample ID:	D56463-2	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
Method:	SW846 8270C BY SIM SW846 3546	**Percent Solids:**	85.7
Project:	Pertson Ridge 01-20H		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3G18985.D	1	04/08/14	DC	04/07/14	OP9686	E3G940
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.1	3.9	ug/kg	
120-12-7	Anthracene	ND	5.1	3.5	ug/kg	
56-55-3	Benzo(a)anthracene	ND	5.1	2.5	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	5.1	3.1	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	5.1	2.5	ug/kg	
50-32-8	Benzo(a)pyrene	ND	5.1	2.5	ug/kg	
218-01-9	Chrysene	ND	5.1	2.5	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	5.1	2.5	ug/kg	
206-44-0	Fluoranthene	3.0	5.1	2.8	ug/kg	J
86-73-7	Fluorene	4.1	5.1	3.6	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.1	2.5	ug/kg	
91-20-3	Naphthalene	5.4	5.1	3.0	ug/kg	
129-00-0	Pyrene	ND	5.1	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	72%		10-175%
321-60-8	2-Fluorobiphenyl	73%		25-130%
1718-51-0	Terphenyl-d14	66%		41-133%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H BACKGROUND		
Lab Sample ID:	D56463-2	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
Method:	SW846 8015B	**Percent Solids:**	85.7
Project:	Pertson Ridge 01-20H		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB24377.D	1	04/02/14	AR	n/a	n/a	GGB1336
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	99%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: PETESON RIDGE 01-20H BACKGROUND
Lab Sample ID: D56463-2
Matrix: SO - Soil
Method: SW846-8015B SW846 3546
Project: Pertson Ridge 01-20H

Date Sampled: 03/31/14
Date Received: 04/02/14
Percent Solids: 85.7

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI11632.D	1	04/04/14	JS	04/04/14	OP9681	GFI733
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	23.3	7.8	5.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	76%		20-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H BACKGROUND		
Lab Sample ID:	D56463-2	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
		Percent Solids:	85.7
Project:	Pertson Ridge 01-20H		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.0	0.11	mg/kg	5	04/03/14	04/04/14	NT	SW846 6020A [3]	SW846 3050B [7]
Barium	224	1.1	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Cadmium	< 1.1	1.1	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Chromium	15.8	1.1	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Copper	14.0	1.1	mg/kg	1	04/03/14	04/04/14	KV	SW846 6010C [4]	SW846 3050B [6]
Lead	6.3	5.7	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Mercury	< 0.090	0.090	mg/kg	1	04/03/14	04/03/14	KV	SW846 7471B [2]	SW846 7471B [5]
Nickel	10.9	3.4	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Selenium	< 5.7	5.7	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]
Silver	< 3.4	3.4	mg/kg	1	04/03/14	04/04/14	KV	SW846 6010C [4]	SW846 3050B [6]
Zinc	38.6	3.4	mg/kg	1	04/03/14	04/03/14	JB	SW846 6010C [1]	SW846 3050B [6]

(1) Instrument QC Batch: MA4620
(2) Instrument QC Batch: MA4621
(3) Instrument QC Batch: MA4626
(4) Instrument QC Batch: MA4629
(5) Prep QC Batch: MP12636
(6) Prep QC Batch: MP12646
(7) Prep QC Batch: MP12647

RL = Reporting Limit

Report of Analysis

Client Sample ID: PETESON RIDGE 01-20H BACKGROUND
Lab Sample ID: D56463-2
Matrix: SO - Soil
Project: Pertson Ridge 01-20H

Date Sampled: 03/31/14
Date Received: 04/02/14
Percent Solids: 85.7

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	85.7		%	1	04/02/14	SWT	SM2540G-2011 M
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	2300	1.0	umhos/cm	1	04/08/14	JD	SM 2510B-2011 MOD
Chromium, Hexavalent	< 1.0	1.0	mg/kg	1	04/04/14	RW	SW846 3060A/7196A
Chromium, Trivalent [a]	15.8	2.1	mg/kg	1	04/04/14	RW	SW846 3060A/7196A M
Redox Potential Vs H2	506		mv	1	04/08/14	JD	ASTM D1498-76M
pH	7.33		su	1	04/03/14 11:10	JB	SW846 9045D

(a) Calculated as: (Chromium) - (Chromium, Hexavalent)

RL = Reporting Limit

Report of Analysis

Client Sample ID: PETESON RIDGE 01-20H BACKGROUND
Lab Sample ID: D56463-2A
Matrix: SO - Soil
Project: Pertson Ridge 01-20H

Date Sampled: 03/31/14
Date Received: 04/02/14
Percent Solids: 85.7

SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Calcium	220	2.0	mg/l	1	04/08/14	04/08/14	KV	SW846 6010C [1]	SW846 3010A/M [2]
Magnesium	43.0	1.0	mg/l	1	04/08/14	04/08/14	KV	SW846 6010C [1]	SW846 3010A/M [2]
Sodium	195	2.0	mg/l	1	04/08/14	04/08/14	KV	SW846 6010C [1]	SW846 3010A/M [2]

(1) Instrument QC Batch: MA4639
(2) Prep QC Batch: MP12679

RL = Reporting Limit

Report of Analysis

Client Sample ID:	PETESON RIDGE 01-20H BACKGROUND		
Lab Sample ID:	D56463-2A	**Date Sampled:**	03/31/14
Matrix:	SO - Soil	**Date Received:**	04/02/14
		Percent Solids:	85.7
Project:	Pertson Ridge 01-20H		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio [a]	3.15		ratio	1	04/08/14 20:14	KV	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L)+ (Mg meq/L)/2]

RL = Reporting Limit

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST LABORATORIES

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

PAGE ___ OF

FED-EX Tracking # | Bottle Order Control #
Accutest Quote # | Accutest Job # D56463

Client / Reporting Information

Company Name: Confluence Energy
Street Address: 1809 Hwy 9 - PO Box 1387
City: Kremmling State: Colorado
Project Contact: Mark
Phone #: 970-724-9839
Sampler(s) Name(s):

Project Information

Project Name: Pertson Ridge 01-20H
Street:
City State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)

Company Name:
Street Address:
City:
Attention:

Requested Analysis (see TEST CODE sheet)

Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Co Table 910										
1	Peteson Ridge 01-20H cuttings		3/31/14	13:00	MJM	Soil	1									X										01
	Peteson Ridge 01-20H background		3/31/14	13:00	MJM	Soil	1									X										02

Turnaround Time (Business days)

- ☐ Std. 15 Business Days
- ☐ Std. 10 Business Days
- ☒ 5 Day RUSH
- ☐ 3 Day Emergency
- ☐ 2 Day Emergency
- ☐ 1 Day Emergency
- ☐

Approved By (Accutest PM): / Date:
Stand price

Emergency & Rush T/A data available VIA Labiink

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ COMMBN
- ☐ COMMBN+
- ☐
- ☐ State Forms Required
- ☐ Send Forms to State
- ☐ Report by Fax
- ☐ Report by PDF
- ☐ EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 mark	8:00	1 JacoB DeA	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal # FX	☐ Intact	Preserved where applicable: NA	On Ice: NO	Cooler: 22.4

4/2/14 1010

5.1 5

D56463: Chain of Custody
Page 1 of 1

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1750-MB	3V29916.D	1	04/08/14	JL	n/a	n/a	V3V1750

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56463-1, D56463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	19	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	200	100	ug/kg	

CAS No.	Surrogate Recoveries		Limits
2037-26-5	Toluene-D8	99%	64-130%
460-00-4	4-Bromofluorobenzene	93%	62-131%
17060-07-0	1,2-Dichloroethane-D4	107%	70-130%

Blank Spike Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1750-BS	3V29917.D	1	04/08/14	JL	n/a	n/a	V3V1750

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56463-1, D56463-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2640	106	70-130
100-41-4	Ethylbenzene	2500	2740	110	70-130
108-88-3	Toluene	2500	2600	104	70-130
1330-20-7	Xylene (total)	7500	7910	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	101%	64-130%
460-00-4	4-Bromofluorobenzene	100%	62-131%
17060-07-0	1,2-Dichloroethane-D4	99%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1750-BS	3V29918.D	1	04/08/14	JL	n/a	n/a	V3V1750

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56463-1, D56463-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	101%	64-130%
460-00-4	4-Bromofluorobenzene	99%	62-131%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56609-1MS	3V29922.D	1	04/08/14	JL	n/a	n/a	V3V1750
D56609-1	3V29924.D	1	04/08/14	JL	n/a	n/a	V3V1750

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56463-1, D56463-2

CAS No.	Compound	D56609-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits

CAS No.	Surrogate Recoveries	MS	D56609-1	Limits
2037-26-5	Toluene-D8	92%	91%	64-130%
460-00-4	4-Bromofluorobenzene	105%	102%	62-131%
17060-07-0	1,2-Dichloroethane-D4	97%	102%	70-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56609-1MS	3V29923.D	1	04/08/14	JL	n/a	n/a	V3V1750
D56609-1	3V29924.D	1	04/08/14	JL	n/a	n/a	V3V1750

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56463-1, D56463-2

CAS No.	Compound	D56609-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Limits
71-43-2	Benzene	ND		3530	3280	93	64-139
100-41-4	Ethylbenzene	ND		3530	3380	96	68-136
108-88-3	Toluene	ND		3530	3020	86	60-130
1330-20-7	Xylene (total)	ND		10600	9850	93	58-142

CAS No.	Surrogate Recoveries	MS	D56609-1	Limits
2037-26-5	Toluene-D8	93%	91%	64-130%
460-00-4	4-Bromofluorobenzene	107%	102%	62-131%
17060-07-0	1,2-Dichloroethane-D4	102%	102%	70-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56609-2DUP	3V29926.D	1	04/08/14	JL	n/a	n/a	V3V1750
D56609-2	3V29925.D	1	04/08/14	JL	n/a	n/a	V3V1750

The QC reported here applies to the following samples: **Method:** SW846 8260B

D56463-1, D56463-2

CAS No.	Compound	D56609-2 ug/kg	Q	DUP ug/kg	Q	RPD	Limits
71-43-2	Benzene	ND		ND		nc	30
100-41-4	Ethylbenzene	ND		ND		nc	30
108-88-3	Toluene	ND		ND		nc	30
1330-20-7	Xylene (total)	ND		ND		nc	30

CAS No.	Surrogate Recoveries	DUP	D56609-2	Limits
2037-26-5	Toluene-D8	91%	92%	64-130%
460-00-4	4-Bromofluorobenzene	100%	103%	62-131%
17060-07-0	1,2-Dichloroethane-D4	104%	106%	70-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9686-MB	3G18962.D	1	04/08/14	DC	04/07/14	OP9686	E3G940

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D56463-1, D56463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	3.3	ug/kg	
120-12-7	Anthracene	ND	4.3	3.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	4.3	2.1	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	4.3	2.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	4.3	2.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	4.3	2.1	ug/kg	
218-01-9	Chrysene	ND	4.3	2.1	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	4.3	2.1	ug/kg	
206-44-0	Fluoranthene	ND	4.3	2.4	ug/kg	
86-73-7	Fluorene	ND	4.3	3.1	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.3	2.1	ug/kg	
91-20-3	Naphthalene	ND	4.3	2.6	ug/kg	
129-00-0	Pyrene	ND	4.3	2.5	ug/kg	

CAS No.	Surrogate Recoveries		Limits
4165-60-0	Nitrobenzene-d5	101%	10-175%
321-60-8	2-Fluorobiphenyl	92%	25-130%
1718-51-0	Terphenyl-d14	93%	41-133%

Blank Spike Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9686-BS	3G18963.D	1	04/08/14	DC	04/07/14	OP9686	E3G940

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D56463-1, D56463-2

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	81.9	98	55-130
120-12-7	Anthracene	83.3	81.5	98	60-130
56-55-3	Benzo(a)anthracene	83.3	104	125	62-130
205-99-2	Benzo(b)fluoranthene	83.3	106	127	55-130
207-08-9	Benzo(k)fluoranthene	83.3	101	121	59-130
50-32-8	Benzo(a)pyrene	83.3	102	122	64-130
218-01-9	Chrysene	83.3	101	121	70-130
53-70-3	Dibenzo(a,h)anthracene	83.3	95.3	114	56-130
206-44-0	Fluoranthene	83.3	83.1	100	59-130
86-73-7	Fluorene	83.3	83.8	101	58-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	96.8	116	60-130
91-20-3	Naphthalene	83.3	65.1	78	56-130
129-00-0	Pyrene	83.3	73.6	88	65-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	91%	10-175%
321-60-8	2-Fluorobiphenyl	90%	25-130%
1718-51-0	Terphenyl-d14	92%	41-133%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9686-MS	3G18965.D	1	04/08/14	DC	04/07/14	OP9686	E3G940
OP9686-MSD	3G18966.D	1	04/08/14	DC	04/07/14	OP9686	E3G940
D56389-1	3G18964.D	1	04/08/14	DC	04/07/14	OP9686	E3G940

The QC reported here applies to the following samples: **Method:** SW846 8270C BY SIM

D56463-1, D56463-2

CAS No.	Compound	D56389-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		90	86.5	96	88.7	98	3	29-139/30
120-12-7	Anthracene	ND		90	86.7	96	89.6	99	3	10-182/30
56-55-3	Benzo(a)anthracene	ND		90	105	117	110	122	5	35-149/30
205-99-2	Benzo(b)fluoranthene	ND		90	114	127	123	136	8	22-174/30
207-08-9	Benzo(k)fluoranthene	ND		90	91.1	101	94.6	105	4	10-185/30
50-32-8	Benzo(a)pyrene	ND		90	105	117	113	125	7	10-168/30
218-01-9	Chrysene	ND		90	106	118	111	123	5	10-168/30
53-70-3	Dibenzo(a,h)anthracene	ND		90	104	116	110	122	6	12-160/30
206-44-0	Fluoranthene	ND		90	88.5	98	93.2	103	5	20-156/30
86-73-7	Fluorene	ND		90	90.7	101	95.7	106	5	10-164/30
193-39-5	Indeno(1,2,3-cd)pyrene	ND		90	105	117	112	124	6	29-136/30
91-20-3	Naphthalene	ND		90	70.1	78	68.6	76	2	10-258/30
129-00-0	Pyrene	ND		90	82.9	92	86.3	96	4	10-196/30

CAS No.	Surrogate Recoveries	MS	MSD	D56389-1	Limits
4165-60-0	Nitrobenzene-d5	83%	83%	100%	10-175%
321-60-8	2-Fluorobiphenyl	81%	83%	88%	25-130%
1718-51-0	Terphenyl-d14	85%	89%	90%	41-133%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1336-MB	GB24372.D	1	04/02/14	AR	n/a	n/a	GGB1336

The QC reported here applies to the following samples: **Method:** SW846 8015B

D56463-1, D56463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	9.9	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	100%	60-140%

Blank Spike Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1336-BS	GB24373.D	1	04/02/14	AR	n/a	n/a	GGB1336

The QC reported here applies to the following samples: **Method:** SW846 8015B

D56463-1, D56463-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	109	91.0	84	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D56463-1MS	GB24375.D	1	04/02/14	AR	n/a	n/a	GGB1336
D56463-1MSD	GB24376.D	1	04/02/14	AR	n/a	n/a	GGB1336
D56463-1	GB24374.D	1	04/02/14	AR	n/a	n/a	GGB1336

The QC reported here applies to the following samples: **Method:** SW846 8015B

D56463-1, D56463-2

CAS No.	Compound	D56463-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	60.8		216	212	70	204	66* [a]	4	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D56463-1	Limits
120-82-1	1,2,4-Trichlorobenzene	130%	130%	129%	60-140%

(a) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9681-MB	FI11606.D	1	04/04/14	JS	04/04/14	OP9681	GFI733

The QC reported here applies to the following samples: **Method:** SW846-8015B

D56463-1, D56463-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	95%	20-130%

Blank Spike Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9681-BS	FI11608.D	1	04/04/14	JS	04/04/14	OP9681	GFI733

The QC reported here applies to the following samples: **Method:** SW846-8015B

D56463-1, D56463-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	167	115	69	42-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	98%	20-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D56463
Account: CONECOK Confluence Energy
Project: Pertson Ridge 01-20H

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP9681-MS	FI11610.D	1	04/04/14	JS	04/04/14	OP9681	GFI733
OP9681-MSD	FI11612.D	1	04/04/14	JS	04/04/14	OP9681	GFI733
D56366-6	FI11613.D	1	04/04/14	JS	04/04/14	OP9681	GFI734

The QC reported here applies to the following samples: **Method:** SW846-8015B

D56463-1, D56463-2

CAS No.	Compound	D56366-6 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	8.43		198	135	64	132	62	2	20-150/30

CAS No.	Surrogate Recoveries	MS	MSD	D56366-6	Limits
84-15-1	o-Terphenyl	88%	87%	83%	20-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12636 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/03/14

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.083	.00088	.0067	-0.0018	<0.083

Associated samples MP12636: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12636 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/03/14

Metal	D56367-1 Original	MS	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.0065	0.38	0.368	101.4	75-125

Associated samples MP12636: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12636 Methods: SW846 7471B
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/03/14

Metal	D56367-1 Original	MSD	Spikelot HGWSR1	% Rec	MSD RPD	QC Limit
Mercury	0.0065	0.37	0.38	95.6	2.7	20

Associated samples MP12636: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12636
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 04/03/14

Metal	BSP Result	Spikelot HGWSR1	% Rec	QC Limits
Mercury	0.32	0.333	96.0	80-120

Associated samples MP12636: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/03/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.86	1.8		
Antimony	3.0	.32	.5		
Arsenic	2.5	.52	.63		
Barium	1.0	.14	.36	0.060	<1.0
Beryllium	1.0	.08	.06		
Boron	5.0	.67	.16		
Cadmium	1.0	.04	.28	0.060	<1.0
Calcium	40	.22	6.8		
Chromium	1.0	.04	.03	0.060	<1.0
Cobalt	0.50	.04	.039		
Copper	1.0	.12	.13	0.020	<1.0
Iron	7.0	.22	1.8		
Lead	5.0	.36	.25	-0.29	<5.0
Lithium	0.50	.19	.13		
Magnesium	20	1.4	1.8		
Manganese	0.50	.001	.038		
Molybdenum	1.0	.08	.13		
Nickel	3.0	.09	.07	0.17	<3.0
Phosphorus	10	1.5	1.2		
Potassium	200	13	12		
Selenium	5.0	.88	1.1	0.36	<5.0
Silicon	5.0	.52	1.1		
Silver	3.0	.04	.05	0.020	<3.0
Sodium	40	.49	3.7		
Strontium	5.0	.001	.022		
Thallium	1.0	.29	.46		
Tin	5.0	1.3	2.3		
Titanium	1.0	.015	.46		
Uranium	5.0	.37	.31		
Vanadium	1.0	.04	.043		
Zinc	3.0	.06	.16	0.16	<3.0

Associated samples MP12646: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/03/14

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/03/14

Metal	D56463-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	5540	6880	298	449.7(a)	75-125
Beryllium					
Boron					
Cadmium	2.1	69.6	74.4	90.7	75-125
Calcium					
Chromium	11.5	77.0	74.4	88.2	75-125
Cobalt					
Copper	39.6	106	74.4	89.2	75-125
Iron					
Lead	11.8	143	149	88.1	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	23.8	88.6	74.4	85.6	75-125
Phosphorus					
Potassium					
Selenium	0.0	137	149	92.1	75-125
Silicon					
Silver	0.0	25.4	29.8	85.3	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	90.3	143	74.4	70.8N(b)	75-125

Associated samples MP12646: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/03/14

Metal	D56463-1 Original MS	Spikelot ICPALL2	% Rec	QC Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/03/14

Metal	D56463-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	5540	6690	301	382.1(a)	2.8	20
Beryllium						
Boron						
Cadmium	2.1	70.1	75.2	90.5	0.7	20
Calcium						
Chromium	11.5	77.7	75.2	88.2	0.9	20
Cobalt						
Copper	39.6	109	75.2	92.3	2.8	20
Iron						
Lead	11.8	144	150	87.9	0.7	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	23.8	90.8	75.2	87.7	2.5	20
Phosphorus						
Potassium						
Selenium	0.0	134	150	89.1	2.2	20
Silicon						
Silver	0.0	25.1	30.1	83.5	1.2	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	90.3	161	75.2	94.1	11.8	20

Associated samples MP12646: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646 Methods: SW846 6010C
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/03/14

Metal	D56463-1 Original MSD	Spikelot ICPALL2 % Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/03/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	196	200	98.0	80-120
Beryllium				
Boron				
Cadmium	47.7	50	95.4	80-120
Calcium				
Chromium	49.3	50	98.6	80-120
Cobalt				
Copper	47.7	50	95.4	80-120
Iron				
Lead	96.5	100	96.5	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	49.8	50	99.6	80-120
Phosphorus				
Potassium				
Selenium	91.4	100	91.4	80-120
Silicon				
Silver	19.3	20	96.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	50.6	50	101.2	80-120

Associated samples MP12646: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 04/03/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646
Matrix Type: SOLID

Methods: SW846 6010C
Units: ug/l

Prep Date: 04/03/14

Metal	D56463-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	100000000037100		0.0	0-10
Beryllium				
Boron				
Cadmium	14.4	14.0	2.8	0-10
Calcium				
Chromium	97.0	101	30.7*(a)	0-10
Cobalt				
Copper	247	265	0.6	0-10
Iron				
Lead	80.1	111	38.6 (b)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	160	196	16.6*(a)	0-10
Phosphorus				
Potassium				
Selenium	0.00	0.00	NC	0-10
Silicon				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	818	805	32.5*(a)	0-10

Associated samples MP12646: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12646 Methods: SW846 6010C
Matrix Type: SOLID Units: ug/l

Prep Date: 04/03/14

	D56463-1		QC
Metal	Original	SDL 1:5 %DIF	Limits

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.
(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12647 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/03/14

Metal	RL	IDL	MDL	MB raw	final
Arsenic	0.10	.0085	.024	-0.016	<0.10

Associated samples MP12647: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12647
Matrix Type: SOLID

Methods: SW846 6020A
Units: mg/kg

Prep Date: 04/03/14

Metal	D56463-1 Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Arsenic	9.9	164	149	103.6	75-125

Associated samples MP12647: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12647 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/03/14

Metal	D56463-1 Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Arsenic	9.9	167	150	104.5	1.8	20

Associated samples MP12647: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12647 Methods: SW846 6020A
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/03/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Arsenic	103	100	103.0	80-120

Associated samples MP12647: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12647
Matrix Type: SOLID

Methods: SW846 6020A
Units: ug/l

Prep Date: 04/03/14

Metal	D56463-1 Original	SDL 5:25	%DIF	QC Limits
Arsenic	66.3	60.2	9.3	0-10

Associated samples MP12647: D56463-1, D56463-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	43	210		
Antimony	150	16	95		
Arsenic	130	26	28		
Barium	50	7	7		
Beryllium	50	4	6		
Boron	250	34	33		
Cadmium	50	2	1.8		
Calcium	2000	11	210	27.5	<2000
Chromium	50	2	2		
Cobalt	25	2	2.9		
Copper	50	6	9.5		
Iron	350	11	48		
Lead	250	18	110		
Lithium	25	9.5	14		
Magnesium	1000	70	95	119	<1000
Manganese	25	.05	2.3		
Molybdenum	50	4	4.2		
Nickel	150	4.5	4.4		
Phosphorus	500	75	100		
Potassium	5000	650	1400		
Selenium	250	44	55		
Silicon	250	26	26		
Silver	150	2	3		
Sodium	2000	25	850	433	<2000
Strontium	25	.05	.6		
Thallium	50	15	20		
Tin	250	65	80		
Titanium	50	.75	11		
Uranium	250	19	28		
Vanadium	50	2	2		
Zinc	150	3	16		

Associated samples MP12679: D56463-1A, D56463-2A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	D56389-8A Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	23300	156000	125000	106.2	75-125
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium	6270	137000	125000	104.6	75-125
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	49900	179000	125000	103.3	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP12679: D56463-1A, D56463-2A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	D56389-8A Original MS	Spikelot ICPALL2	% Rec	QC Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	D56389-8A Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	23300	160000	125000	109.4	2.5	20
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium	6270	139000	125000	106.2	1.4	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	49900	184000	125000	107.3	2.8	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP12679: D56463-1A, D56463-2A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	D56389-8A Original MSD	Spikelot ICPALL2 % Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	134000	125000	107.2	80-120
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	131000	125000	104.8	80-120
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	130000	125000	104.0	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP12679: D56463-1A, D56463-2A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

Metal	D56389-8A Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	4660	4610	1.0	0-10
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium	1210	1470	17.1*(a)	0-10
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	9980	10200	2.5	0-10
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP12679: D56463-1A, D56463-2A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SERIAL DILUTION RESULTS SUMMARY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

QC Batch ID: MP12679
Matrix Type: AQUEOUS

Methods: SW846 6010C, USDA HANDBOOK 60
Units: ug/l

Prep Date: 04/08/14

	D56389-8A		QC
Metal	Original SDL 1:5	%DIF	Limits

(anr) Analyte not requested
(a) Serial dilution indicates possible matrix interference.

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GP12292/GN24222	1.0	0.0	mg/kg	141.5	137	97.1	80-120%
Chromium, Hexavalent	GP12292/GN24222	1.0	0.0	mg/kg	141.5	136	96.2	80-120%
Specific Conductivity	GP12306/GN24252			umhos/cm	9995	9910	99.1	90-110%
pH	GN24215			su	8.00	8.02	100.2	99.3-100.7%

Associated Samples:
Batch GN24215: D56463-1, D56463-2
Batch GP12292: D56463-1, D56463-2
Batch GP12306: D56463-1, D56463-2
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Chromium, Hexavalent	GP12292/GN24222	D56389-2	mg/kg	0.0	0.0	200.0(a)	0-20%
Redox Potential Vs H2	GN24248	D56577-1	mv	331	336	1.5	0-20%

Associated Samples:
Batch GN24248: D56463-1, D56463-2
Batch GP12292: D56463-1, D56463-2
(*) Outside of QC limits
(a) RPD acceptable due to low duplicate and sample concentrations.

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chromium, Hexavalent	GP12292/GN24222	D56389-2	mg/kg	0.0	40.0	41.4	104.0	75-125%

Associated Samples:
Batch GP12292: D56463-1, D56463-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D56463
Account: CONECOK - Confluence Energy
Project: Pertson Ridge 01-20H

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chromium, Hexavalent	GP12292/GN24222	D56389-2	mg/kg	0.0	40.0	38.4	8.0	20%

Associated Samples:
Batch GP12292: D56463-1, D56463-2
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits