

October 07, 2021

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Utah Gas Corporation

Sample Delivery Group: L1411938
Samples Received: 10/01/2021
Project Number: FED K26
Description: FED K26 P&A
Site: FED K26
Report To: Robert Bleil
1125 Escalante Drive
Rangely, CO 81648

Entire Report Reviewed By:



Chris Ward
Project Manager

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Pace Analytical National

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¹ Cp

² Tc

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⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

FED K26 WELLHEAD L1411938-01 Solid

Collected by
Dava Pollack

Collected date/time
09/29/21 12:40

Received date/time
10/01/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1751105	1	10/06/21 13:20	10/06/21 13:20	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751996	1	10/06/21 00:28	10/06/21 10:55	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752136	1	10/06/21 08:00	10/06/21 10:22	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1751306	1	10/05/21 11:47	10/05/21 15:11	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750765	1	10/04/21 12:44	10/06/21 12:44	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749750	1	10/03/21 15:22	10/05/21 13:15	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1750766	5	10/04/21 12:40	10/05/21 02:13	LAT	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1750930	1	10/01/21 22:03	10/05/21 14:19	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750689	1	10/01/21 22:03	10/03/21 18:13	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1751791	1	10/05/21 19:14	10/06/21 03:30	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1751686	1	10/05/21 15:54	10/06/21 03:12	AAT	Mt. Juliet, TN

¹Cp

²Tc

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⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0476		1	10/06/2021 13:20	WG1751105

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/06/2021 10:55	WG1751996

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.38	T8	1	10/06/2021 10:22	WG1752136

Sample Narrative:

L1411938-01 WG1752136: 8.38 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	150		10.0	1	10/05/2021 15:11	WG1751306

Sample Narrative:

L1411938-01 WG1751306: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	68.7		0.0852	0.500	1	10/06/2021 12:44	WG1750765
Cadmium	0.320	J	0.0471	0.500	1	10/06/2021 12:44	WG1750765
Copper	17.8		0.400	2.00	1	10/06/2021 12:44	WG1750765
Lead	12.2		0.208	0.500	1	10/06/2021 12:44	WG1750765
Nickel	13.0		0.132	2.00	1	10/06/2021 12:44	WG1750765
Selenium	U		0.764	2.00	1	10/06/2021 12:44	WG1750765
Silver	U		0.127	1.00	1	10/06/2021 12:44	WG1750765
Zinc	58.6		0.832	5.00	1	10/06/2021 12:44	WG1750765

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.189	J	0.0167	0.200	1	10/05/2021 13:15	WG1749750

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.02		0.100	1.00	5	10/05/2021 02:13	WG1750766

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.214		0.0217	0.100	1	10/05/2021 14:19	WG1750930
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	99.4			77.0-120		10/05/2021 14:19	WG1750930

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/03/2021 18:13	WG1750689
Toluene	U		0.00130	0.00500	1	10/03/2021 18:13	WG1750689
Ethylbenzene	U		0.000737	0.00250	1	10/03/2021 18:13	WG1750689
Xylenes, Total	U		0.000880	0.00650	1	10/03/2021 18:13	WG1750689
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/03/2021 18:13	WG1750689
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/03/2021 18:13	WG1750689
(S) Toluene-d8	105			75.0-131		10/03/2021 18:13	WG1750689
(S) 4-Bromofluorobenzene	97.8			67.0-138		10/03/2021 18:13	WG1750689
(S) 1,2-Dichloroethane-d4	93.4			70.0-130		10/03/2021 18:13	WG1750689

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.75		1.61	4.00	1	10/06/2021 03:30	WG1751791
C28-C36 Motor Oil Range	31.9		0.274	4.00	1	10/06/2021 03:30	WG1751791
(S) o-Terphenyl	70.7			18.0-148		10/06/2021 03:30	WG1751791

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	10/06/2021 03:12	WG1751686
Acenaphthene	U		0.00209	0.00600	1	10/06/2021 03:12	WG1751686
Acenaphthylene	U		0.00216	0.00600	1	10/06/2021 03:12	WG1751686
Benzo(a)anthracene	U		0.00173	0.00600	1	10/06/2021 03:12	WG1751686
Benzo(a)pyrene	U		0.00179	0.00600	1	10/06/2021 03:12	WG1751686
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/06/2021 03:12	WG1751686
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	10/06/2021 03:12	WG1751686
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/06/2021 03:12	WG1751686
Chrysene	U		0.00232	0.00600	1	10/06/2021 03:12	WG1751686
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/06/2021 03:12	WG1751686
Fluoranthene	U		0.00227	0.00600	1	10/06/2021 03:12	WG1751686
Fluorene	U		0.00205	0.00600	1	10/06/2021 03:12	WG1751686
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/06/2021 03:12	WG1751686
Naphthalene	U		0.00408	0.0200	1	10/06/2021 03:12	WG1751686
Phenanthrene	U		0.00231	0.00600	1	10/06/2021 03:12	WG1751686
Pyrene	U		0.00200	0.00600	1	10/06/2021 03:12	WG1751686
1-Methylnaphthalene	U		0.00449	0.0200	1	10/06/2021 03:12	WG1751686
2-Methylnaphthalene	U		0.00427	0.0200	1	10/06/2021 03:12	WG1751686
2-Chloronaphthalene	U		0.00466	0.0200	1	10/06/2021 03:12	WG1751686
(S) p-Terphenyl-d14	76.9			23.0-120		10/06/2021 03:12	WG1751686
(S) Nitrobenzene-d5	49.4			14.0-149		10/06/2021 03:12	WG1751686
(S) 2-Fluorobiphenyl	62.5			34.0-125		10/06/2021 03:12	WG1751686

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3712998-1 10/06/21 10:45

Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	U		0.255	1.00

Laboratory Control Sample (LCS)

(LCS) R3712998-2 10/06/21 10:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Hexavalent Chromium	10.0	9.84	98.4	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3712960-2 10/06/21 10:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su			%		%
pH	8.25		1	0.121		1

Sample Narrative:

DUP: 8.25 at 20.4C

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3712960-3 10/06/21 10:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su			%		%
pH	9.00		1	0.111		1

Sample Narrative:

DUP: 9 at 20.4C

Laboratory Control Sample (LCS)

(LCS) R3712960-1 10/06/21 10:22

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.09 at 20.3C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3712630-1 10/05/21 15:11

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1411896-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1411896-01 10/05/21 15:11 • (DUP) R3712630-3 10/05/21 15:11

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	397	398	1	0.252		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1411944-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1411944-01 10/05/21 15:11 • (DUP) R3712630-4 10/05/21 15:11

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	242	242	1	0.165		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3712630-2 10/05/21 15:11

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	271	101	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3713123-1 10/06/21 11:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3713123-2 10/06/21 11:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	101	101	80.0-120	
Cadmium	100	95.1	95.1	80.0-120	
Copper	100	95.7	95.7	80.0-120	
Lead	100	95.7	95.7	80.0-120	
Nickel	100	97.1	97.1	80.0-120	
Selenium	100	98.4	98.4	80.0-120	
Silver	20.0	18.6	93.2	80.0-120	
Zinc	100	95.4	95.4	80.0-120	

L1410191-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410191-01 10/06/21 11:30 • (MS) R3713123-5 10/06/21 11:40 • (MSD) R3713123-6 10/06/21 11:43

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	199	251	251	52.3	52.1	1	75.0-125	J6	J6	0.0619	20
Cadmium	100	0.584	99.4	113	98.8	112	1	75.0-125			12.6	20
Copper	100	21.3	123	140	101	118	1	75.0-125			12.9	20
Lead	100	11.3	109	122	97.8	111	1	75.0-125			11.3	20
Nickel	100	17.4	116	128	98.6	110	1	75.0-125			9.53	20
Selenium	100	U	99.5	113	99.5	113	1	75.0-125			12.9	20
Silver	20.0	U	19.6	22.1	98.1	110	1	75.0-125			11.9	20
Zinc	100	66.2	152	162	86.2	96.2	1	75.0-125			6.35	20

Method Blank (MB)

(MB) R3712597-1 10/05/21 12:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3712597-2 10/05/21 12:27 • (LCSD) R3712597-3 10/05/21 12:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.942	1.01	94.2	101	80.0-120			6.57	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3712338-1 10/05/21 00:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3712338-2 10/05/21 00:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	86.1	86.1	80.0-120	

L1410191-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410191-01 10/05/21 00:51 • (MS) R3712338-5 10/05/21 01:01 • (MSD) R3712338-6 10/05/21 01:04

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	6.31	85.3	100	79.0	94.0	5	75.0-125			16.2	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3713332-3 10/05/21 10:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	103			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3713332-1 10/05/21 09:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.15	112	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			99.7	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3713067-3 10/03/21 14:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	101			75.0-131
(S) 4-Bromofluorobenzene	97.8			67.0-138
(S) 1,2-Dichloroethane-d4	97.2			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3713067-1 10/03/21 13:10 • (LCSD) R3713067-2 10/03/21 13:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.128	0.128	102	102	70.0-123			0.000	20
Ethylbenzene	0.125	0.111	0.116	88.8	92.8	74.0-126			4.41	20
Toluene	0.125	0.116	0.115	92.8	92.0	75.0-121			0.866	20
1,2,4-Trimethylbenzene	0.125	0.111	0.109	88.8	87.2	70.0-126			1.82	20
1,3,5-Trimethylbenzene	0.125	0.105	0.105	84.0	84.0	73.0-127			0.000	20
Xylenes, Total	0.375	0.340	0.337	90.7	89.9	72.0-127			0.886	20
(S) Toluene-d8				99.3	99.7	75.0-131				
(S) 4-Bromofluorobenzene				97.2	99.0	67.0-138				
(S) 1,2-Dichloroethane-d4				107	109	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3712877-1 10/06/21 01:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	67.9			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3712877-2 10/06/21 01:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.0	78.0	50.0-150	
(S) o-Terphenyl			74.9	18.0-148	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3712877-3 10/06/21 07:19 • (MSD) R3712877-4 10/06/21 07:32

Analyte	Spike Amount mg/kg	Original Result	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0		37.0	35.7	74.0	71.4	1	50.0-150			3.58	20
(S) o-Terphenyl					66.7	60.1		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3712855-2 10/05/21 22:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	66.4			14.0-149
(S) 2-Fluorobiphenyl	76.5			34.0-125
(S) p-Terphenyl-d14	91.5			23.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3712855-1 10/05/21 21:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0676	84.5	50.0-126	
Acenaphthene	0.0800	0.0663	82.9	50.0-120	
Acenaphthylene	0.0800	0.0740	92.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0690	86.3	45.0-120	
Benzo(a)pyrene	0.0800	0.0547	68.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0590	73.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0590	73.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0605	75.6	49.0-125	
Chrysene	0.0800	0.0654	81.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0601	75.1	47.0-125	
Fluoranthene	0.0800	0.0702	87.8	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3712855-1 10/05/21 21:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0686	85.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0627	78.4	46.0-125	
Naphthalene	0.0800	0.0664	83.0	50.0-120	
Phenanthrene	0.0800	0.0658	82.3	47.0-120	
Pyrene	0.0800	0.0660	82.5	43.0-123	
1-Methylnaphthalene	0.0800	0.0691	86.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0646	80.7	50.0-120	
2-Chloronaphthalene	0.0800	0.0651	81.4	50.0-120	
(S) Nitrobenzene-d5			82.5	14.0-149	
(S) 2-Fluorobiphenyl			89.3	34.0-125	
(S) p-Terphenyl-d14			103	23.0-120	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3712855-3 10/06/21 05:11 • (MSD) R3712855-4 10/06/21 05:31

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0768		0.0516	0.0533	67.2	69.4	1	10.0-145			3.24	30
Acenaphthene	0.0768		0.0530	0.0552	69.0	71.9	1	14.0-127			4.07	27
Benzo(a)anthracene	0.0768		0.0553	0.0552	69.1	68.9	1	10.0-139			0.181	30
Acenaphthylene	0.0768		0.0574	0.0604	74.7	78.6	1	21.0-124			5.09	25
Benzo(a)pyrene	0.0768		0.0485	0.0492	63.2	64.1	1	10.0-141			1.43	31
Benzo(b)fluoranthene	0.0768		0.0513	0.0484	62.2	58.5	1	10.0-140			5.82	36
Benzo(g,h,i)perylene	0.0768		0.0411	0.0470	53.5	61.2	1	10.0-140			13.4	33
Benzo(k)fluoranthene	0.0768		0.0464	0.0464	60.4	60.4	1	10.0-137			0.000	31
Chrysene	0.0768		0.0541	0.0537	66.1	65.6	1	10.0-145			0.742	30
Dibenz(a,h)anthracene	0.0768		0.0444	0.0505	57.8	65.8	1	10.0-132			12.9	31
Fluoranthene	0.0768		0.0598	0.0595	69.0	68.6	1	10.0-153			0.503	33
Fluorene	0.0768		0.0530	0.0557	69.0	72.5	1	11.0-130			4.97	29
Indeno(1,2,3-cd)pyrene	0.0768		0.0441	0.0495	55.0	62.0	1	10.0-137			11.5	32
Naphthalene	0.0768		0.0580	0.0583	75.5	75.9	1	10.0-135			0.516	27
Phenanthrene	0.0768		0.0565	0.0564	62.8	62.7	1	10.0-144			0.177	31
Pyrene	0.0768		0.0582	0.0569	67.0	65.4	1	10.0-148			2.26	35
1-Methylnaphthalene	0.0768		0.0598	0.0607	71.4	72.6	1	10.0-142			1.49	28
2-Methylnaphthalene	0.0768		0.0563	0.0572	66.2	67.4	1	10.0-137			1.59	28
2-Chloronaphthalene	0.0768		0.0508	0.0529	66.1	68.9	1	29.0-120			4.05	24
(S) Nitrobenzene-d5					64.0	66.2		14.0-149				
(S) 2-Fluorobiphenyl					71.0	72.8		34.0-125				
(S) p-Terphenyl-d14					78.8	79.7		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



UTAH GAS CORP
*UTAHGASRCO

Billing Information:

Ronnie Plummer
1125 Escalante Dr
Rangely, CO 81648

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Ronnie Plummer / Rob Bleil

Email To: rplummer@uthgascorp.com

Project Description:

FED K26 P+R

City/State
Collected:

Please Circle:
PT MT CT ET

Phone: 970-629-3520

Client Project #

Lab Project #

FED K26

Collected by (print):

DAVID P. BLOOM

Site/Facility ID #

FED K26

P.O. #

Collected by (signature):

David P. Bloom

Rush? (Lab MUST Be Notified)

Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
☒ Three Day

Quote #

Date Results Needed

No.
of
Cntrs

Immediately
Packed on Ice N ☐ Y ☒

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

Fed K26 Wellhead

Grab

SS

2'

9/29/21

1240

3

X

X

X

X

X

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:

UPS FedEx Courier

Tracking #

5016 1236 2816

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N
RAD Screen <0.5 mR/hr: ☒ Y ☐ N

Relinquished by: (Signature)

David P. Bloom

Date:

9/29/21

Time:

1800

Received by: (Signature)

Rob Bleil

Trip Blank Received: Yes/No

HCL/MeOH

TBR

Temp: 3.1/10-3.1 3

Bottles Received:

If preservation required by Login: Date/Time

Relinquished by: (Signature)

David P. Bloom

Date:

9/29/21

Time:

1800

Received by: (Signature)

Rob Bleil

Date: 10/1/21

Time: 0900

Hold:

Condition:

NCF / OK