

Colorado Oil & Gas Conservation

Sample Delivery Group: L1458830

Samples Received: 02/08/2022

Project Number: 480698

Description:

Report To: Nikki Graber
5405 Sacramento Pl.
Colorado Springs, CO 80917

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

SW-5@3.5' L1458830-01 Solid

Collected by
Alex Ahmadian

Collected date/time
02/04/22 10:30

Received date/time
02/08/22 15:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1815087	1	02/11/22 12:08	02/11/22 12:08	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1814764	1	02/09/22 07:00	02/09/22 09:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1814277	1	02/13/22 00:24	02/13/22 07:37	ARD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1815171	1	02/08/22 16:44	02/09/22 17:44	CAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1814967	1	02/08/22 16:44	02/09/22 16:56	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1817397	1	02/14/22 22:40	02/15/22 10:29	JAS	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

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⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Colorado Oil & Gas Conservation

PROJECT:

480698

SDG:

L1458830

DATE/TIME:

02/16/22 11:40

PAGE:

3 of 14

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	13.9		1	02/11/2022 12:08	WG1815087

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.96	T8	1	02/09/2022 09:00	WG1814764

Sample Narrative:

L1458830-01 WG1814764: 7.96 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	8140		10.0	1	02/13/2022 07:37	WG1814277

Sample Narrative:

L1458830-01 WG1814277: at 25C

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.250	B J3	0.100	1	02/09/2022 17:44	WG1815171
(S) a,a,a-Trifluorotoluene(FID)	95.5		77.0-120		02/09/2022 17:44	WG1815171

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	02/09/2022 16:56	WG1814967
Ethylbenzene	ND		0.00250	1	02/09/2022 16:56	WG1814967
Naphthalene	ND		0.0125	1	02/09/2022 16:56	WG1814967
Toluene	ND		0.00500	1	02/09/2022 16:56	WG1814967
1,2,4-Trimethylbenzene	0.00500		0.00500	1	02/09/2022 16:56	WG1814967
1,3,5-Trimethylbenzene	ND		0.00500	1	02/09/2022 16:56	WG1814967
Xylenes, Total	ND		0.00650	1	02/09/2022 16:56	WG1814967
(S) Toluene-d8	96.2		75.0-131		02/09/2022 16:56	WG1814967
(S) 4-Bromofluorobenzene	96.4		67.0-138		02/09/2022 16:56	WG1814967
(S) 1,2-Dichloroethane-d4	109		70.0-130		02/09/2022 16:56	WG1814967

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.04		4.00	1	02/15/2022 10:29	WG1817397
C28-C36 Motor Oil Range	ND		4.00	1	02/15/2022 10:29	WG1817397
(S) o-Terphenyl	75.5		18.0-148		02/15/2022 10:29	WG1817397

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

L1458653-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1458653-02 02/09/22 09:00 • (DUP) R3758314-3 02/09/22 09:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.68	7.66	1	0.261		1

Sample Narrative:

OS: 7.68 at 19.3C

DUP: 7.66 at 19.8C

Laboratory Control Sample (LCS)

(LCS) R3758314-1 02/09/22 09:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 18.4C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3759548-1 02/13/22 07:37

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

L1458164-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1458164-10 02/13/22 07:37 • (DUP) R3759548-3 02/13/22 07:37

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	399	384	1	3.83		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1458461-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1458461-08 02/13/22 07:37 • (DUP) R3759548-4 02/13/22 07:37

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3160	2800	1	12.2		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3759548-2 02/13/22 07:37

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	264	98.5	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

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Ss

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Cn

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Sr

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Qc

7

Gl

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Al

9

Sc

Method Blank (MB)

(MB) R3758807-1 02/09/22 10:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0262	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	87.5			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3758807-2 02/09/22 12:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.67	84.9	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	

L1458830-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1458830-01 02/09/22 17:44 • (MS) R3758807-3 02/09/22 18:05 • (MSD) R3758807-4 02/09/22 18:27

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 %
TPH (GC/FID) Low Fraction	5.50	0.250	2.95	1.49	49.1	22.5	1	10.0-151		J3	65.8	28
(S) a,a,a-Trifluorotoluene(FID)					106	91.1		77.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

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Sr

6
Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R3758817-2 02/09/22 11:08

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
Naphthalene	U		0.00488	0.0125
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	102			75.0-131
(S) 4-Bromofluorobenzene	94.1			67.0-138
(S) 1,2-Dichloroethane-d4	106			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3758817-1 02/09/22 10:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.110	88.0	70.0-123	
Ethylbenzene	0.125	0.112	89.6	74.0-126	
Naphthalene	0.125	0.114	91.2	59.0-130	
Toluene	0.125	0.108	86.4	75.0-121	
1,2,4-Trimethylbenzene	0.125	0.124	99.2	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.128	102	73.0-127	
Xylenes, Total	0.375	0.356	94.9	72.0-127	
(S) Toluene-d8			94.5	75.0-131	
(S) 4-Bromofluorobenzene			99.9	67.0-138	
(S) 1,2-Dichloroethane-d4			119	70.0-130	

L1458648-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1458648-01 02/09/22 12:42 • (MS) R3758817-3 02/09/22 20:07 • (MSD) R3758817-4 02/09/22 20:28

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 %
Benzene	0.155	ND	0.108	0.122	77.7	87.8	1.11	10.0-149			12.2	37
Ethylbenzene	0.155	ND	0.100	0.122	70.3	86.1	1.11	10.0-160			19.8	38
Naphthalene	0.155	ND	0.134	0.159	96.4	114	1.11	10.0-160			17.1	36
Toluene	0.155	ND	0.0936	0.116	67.3	83.5	1.11	10.0-156			21.4	38
1,2,4-Trimethylbenzene	0.155	ND	0.117	0.147	84.2	106	1.11	10.0-160			22.7	36
1,3,5-Trimethylbenzene	0.155	ND	0.113	0.145	81.3	104	1.11	10.0-160			24.8	38
Xylenes, Total	0.465	0.0115	0.328	0.417	75.9	97.2	1.11	10.0-160			23.9	38

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1458648-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1458648-01 02/09/22 12:42 • (MS) R3758817-3 02/09/22 20:07 • (MSD) R3758817-4 02/09/22 20:28

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 %
(S) Toluene-d8					94.8	95.8		75.0-131				
(S) 4-Bromofluorobenzene					97.3	100		67.0-138				
(S) 1,2-Dichloroethane-d4					116	111		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3760228-1 02/15/22 09:44

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	3.41	⌵	0.274	4.00
(S) o-Terphenyl	65.0			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3760228-2 02/15/22 09:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.1	70.2	50.0-150	
(S) o-Terphenyl			68.8	18.0-148	

L1458934-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1458934-02 02/15/22 12:44 • (MS) R3760267-1 02/15/22 12:58 • (MSD) R3760267-2 02/15/22 13:11

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 %
C10-C28 Diesel Range	50.0	12.1	49.8	49.8	75.4	75.4	1	50.0-150			0.000	20
(S) o-Terphenyl					81.7	73.9		18.0-148				

1
Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

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.

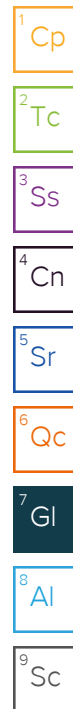
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
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

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
T8	Sample(s) received past/too close to holding time expiration.



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.







U1458830

Turn Around Time (check)		DISPOSAL	By Lab	PAGE	1	of	1
		<u>LAB USE ONLY:</u>					
Standard	x	Temperature upon receipt: _____					
72hr		Custody seals in tact: Yes No N/A					
48hr							
24hr							
Same Day							

[illegible]

Sample Receipt Checklist

COC Seal Present/Intact:	<u>Y</u>	N	If Applicable	
COC Signed/Accurate:	<u>Y</u>	N	VOA Zero Headspace:	<u>Y</u> N
Bottles arrive intact:	<u>Y</u>	N	Pres. Correct/Check:	<u>Y</u> N
Correct bottles used:	<u>Y</u>	N		
Sufficient volume sent:	<u>Y</u>	N		
RAD Screen <0.5 mR/hr:	<u>Y</u>	N		

	PRINTED NAME	SIGNATURE	DATE	TIME
RELINQUISHED BY	Alex Ahmadian		2/7/22	9:00
RECEIVED BY	James Citese		2/7/22	9:00
RELINQUISHED BY	James Citese		2/7/22	18:00
RECEIVED BY	Justin Abney		2/8/22	1500
RELINQUISHED BY				

$$3.6 + 0 = 3.6 \text{ BAA7}$$