

May 9, 2018

Olivia Yu Oil Conservation Division, District 1 1625 N. French Dr. Hobbs, NM 88240 **APPROVED** By Olivia Yu at 1:46 pm, Sep 14, 2018

NMOCD grants closure to 1RP-4853.

Re: Closure Letter Raspberry State Com #001H API #: 30-025-43179 RP#: 1RP-4853 Unit Letter P Section 27, Township 21S, Range 33E Lea County, NM

Ms. Yu,

COG Operating, LLC (COG) is pleased to submit for your consideration the following closure report for the Raspberry State Com #001H. This release occurred on October 20, 2017. Following the release an assessment of impacted soils was conducted. A remediation work plan was submitted to and subsequently approved by NMOCD on January 2, 2018.

BACKGROUND

The Raspberry State Com #001H release is located in Unit Letter P, Section 27, Township 21 South, and Range 33 East in Lea County, New Mexico. More specifically the latitude and longitude for this release are 32.44345842 North and -103.5524045 West.

On October 20, 2017, the throttle head did not engage to open the Kimray dump and sent fluid through the flare resulting in the release of approximately twelve (12) barrels (bbls) of oil. A vacuum truck was dispatched to the site to recover freestanding fluids. Approximately eight (8) bbls of oil were recovered.

On December 13, 2017, a site assessment and soil sampling were conducted in order to vertically and horizontally define the impacted area. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately five-hundred and eighty-two (582) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater	>100-feet
Distance to surface water body	>1000-feet
Wellhead Protection Area	>1000-feet

Analytical Results

Sample	Depth	Benzene	Total	Chloride	Total
ID	(feet)	(mg/kg)	BTEX (mg/kg)	(mg/kg)	TPH (mg/kg)
T-1	0	< 0.050	< 0.300	2070	4840
T-1	1	< 0.050	< 0.300	<10.0	72.8
T-1	2	< 0.050	< 0.300	<10.0	<10.0
T-1	3	< 0.050	< 0.300	19.3	<10.0
T-1	4	< 0.050	< 0.300	<10.0	<10.0
T-2	0	< 0.050	< 0.300	147	4063
T-2	1	< 0.050	< 0.300	12.2	66.7
T-2	2	< 0.050	< 0.300	<10.0	<10.0
T-2	3	< 0.050	< 0.300	<10.0	<10.0
T-2	4	< 0.050	< 0.300	<10.0	<10.0
T-3	0	< 0.050	< 0.300	57.4	757
T-3	1	< 0.050	< 0.300	11.8	<10.0
T-3	2	< 0.050	< 0.300	<10.0	<10.0
T-3	3	< 0.050	< 0.300	13.8	<10.0
NORTH	0	< 0.050	< 0.300	<10.0	<10.0
SOUTH	0	< 0.050	< 0.300	484	105
EAST	0	< 0.050	< 0.300	<10.0	<10.0
WEST	0	< 0.050	< 0.300	18.0	<10.0

Initial Soil Sampling (12/13/2017)

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	Total TPH (mg/kg)
T-1	1	< 0.050	< 0.300	48.6	103.3
T-1 N.	SIDEWALL	< 0.050	< 0.300	63.0	196.1
T-1 S.	SIDEWALL	< 0.050	< 0.300	203	<10.0
T-1 E.	SIDEWALL	< 0.050	< 0.300	45	<10.0
T-1 W.	SIDEWALL	< 0.050	< 0.300	10.7	<10.0
T-2	0	< 0.050	< 0.300	<10.0	<10.0

Confirmation Soil Sampling (3/23/18)

REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 was excavated to a depth of 1-foot BGS.
- Per New Mexico Oil Conservation Division (NMOCD) stipulations confirmation soil samples were taken from the bottom and sidewalls of the excavated area. The laboratory analysis of these soil samples confirmed that the remaining soil is below NMOCD Recommended Remedial Action Levels (RRAL's).
- Per NMOCD stipulations a soil sample was collected at sample location T-2. The laboratory analysis of this soil sample confirmed that the remaining soil is below NMOCD RRAL's.
- All of the excavated material was transported to an NMOCD approved solid waste disposal facility.
- The excavation was backfilled, contoured to match the surrounding terrain and seeded with a land owner requested seed mixture.

CLOSURE REQUEST

COG Operating, LLC respectfully requests that the New Mexico Oil Conservation Division grant closure approval for the Raspberry State Com #001H incident that occurred on October 20, 2017.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,

Sheldon gittom

Sheldon L. Hitchcock HSE Coordinator slhitchcock@concho.com

Enclosed:

Appendix I: Site Diagram Appendix II: Groundwater Data Appendix III: Initial C-141 (Copy) Appendix IV: Final C-141 Appendix V: Work Plan (Copy) Appendix VI: Photo Documentation Appendix VII: Analytical Reports and Chain-of-Custody Forms

APPENDIX I

October 20, 2017

Raspberry State Com #001H



APPENDIX II



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD has been replaced O=orphaned, C=the file is	(2=NE 3	=SW 4=S	SE) NAD83 UTM in m	otors)	(In feet)	
water fight file.	closed) POD	(qua	lere		C 311	nanes		Jesi) (eleisj	(in leet)	
	Sub-			Q								-	Depth	
POD Number	Code basin C	-	/ 64						>		Distance		Water	Column
CP 01411 POD1	CP	LE		2	2	34	21S	33E	635968	8 3590386 🌍	228	1149		
CP 01411 POD2	CP	LE		1	2	34	21S	33E	635534	4 3590380 🌍	463	1125		
CP 01349 POD1	CP	LE	2	3	1	27	21S	33E	635304	4 3591576 🌍	1153	1188	572	616
CP 01355 POD1	CP	LE	2	1	3	27	21S	33E	634773	3 3591061 🌍	1246	1192	582	610
CP 01357 POD1	CP	LE	4	3	1	27	21S	33E	634782	2 3591347 🌍	1368	1286	578	708
CP 01356 POD1	CP	LE	4	2	2	33	21S	33E	63456	0 3590014 🌍	1500	1098	555	543
										Avera	age Depth to	Water:	571 1	feet
											Minimum	Depth:	555 f	feet
											Maximum	Depth:	582	feet
Record Count: 6														

Basin/County Search:

County: Lea

UTMNAD83 Radius Search (in meters):

Easting (X): 635936

Northing (Y): 3590612

Radius: 2000

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

APPENDIX III

Form C-141 Revised April 3, 2017

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

			Rele	ease Notifie	catio	n and Co	orrec	tive A	ctior	1			
						OPERA				🛛 Initia	al Report		Final Repor
	Name of Company: COG Operating, LLC (OGRID# 229137) Address: 600 West Illinois Avenue, Midland TX 79701							Contact: Robert McNeill Telephone No.: 432-683-7443					
		erry State (Facility Typ						_	
Surface Ow	ner: Fee			Mineral C	Owner:	State				API No	.: 30-025-4	3179)
	LOCATION OF RELEASE												
Unit Letter P	Section 27	Township 21S	Range 33E	Feet from the 330	North	South Line South	Feet fi	rom the		West Line East	County	Le	a
	Latitude:32.44345842 Longitude: -103.5524045 NAD83												
				NAT	URE	OF REL	EASE	1					
Type of Relea	ase: Oil					Volume of 12bbls	Release			Volume R 8bbls	Recovered:		
Source of Re	lease: Flare					Date and F 10/20/17 7		Occurrenc	e:		Hour of Dis 7:00am	cover	y:
Was Immedia	ate Notice C		Yes 🛛	No 🛛 Not R	equired	If YES, To	Whom	?					
By Whom?					•	Date and F	lour:						
Was a Watero	ourse Reac		Yes 🛛	No		If YES, Vo	lume In	npacting t	he Wate	ercourse.			
If a Watercou	rse was Im	pacted, Descri	be Fully.*	2		REC	FIV	/FD					
Describe Cau	se of Proble	em and Reme	lial Action	n Taken.*					t 1:0	8 pm,	Oct 27,	, 20	17
The throttle h replaced with			en Kimray	dump and sent fl	luid thro	ough the flare.	The bac	ck pressur	re regula	ator was reb	ouilt and the	throt	le head was
Describe Are	a Affected a	and Cleanup A	ction Tak	en.*									
were recovere	d. Concho	will have the	spill area o	location. A vacuu evaluated for any mediation activiti	possible	: was dispatch e impact from	ed to re the rele	cover all f ase and w	free star vill pres	nding fluids ent a remed	. Approxima liation work	itely i plan (Bbbls of oil to the
regulations al public health should their o	l operators or the envir perations ha ment. In a	are required to conment. The ave failed to a ddition, NMO	o report an acceptanc dequately CD accep	is true and comp d/or file certain r e of a C-141 repo investigate and r tance of a C-141	elease n ort by the emediate	otifications and e NMOCD ma e contaminati	nd perfo arked as on that p e the op	rm correc Final R bose a thre erator of r	tive acti eport" d eat to gr responsi	ions for rele loes not reli round water ibility for co	eases which eve the oper , surface wa ompliance w	may e ator c ter, h ith ar	endanger of liability uman health
		٨					<u>OII</u>	L CONS	SERV	ATION	DIVISIO	<u>N</u>	
Signature:	lider	His								්	1-		
Printed Name	: Sheldon L	Hitchcock				Approved by	Environ	mental Sj	pecialist	tr (
Title: HSE Co	ordinator					Approval Dat	e: 10/	27/201	17	Expiration I	Date:		
E-mail Addre	ss: slhitchco	ock@concho.	com			Conditions of					Attached		/
Date: 10/23/2				ione: 575-746-20	10	see atta	cned	airecti	ve				
Attach Addit	ional Shee	ts If Necess	ary			1RP-485	3	nOY1	7300	48212] [ρΟΥ	′17 3	30048559

APPENDIX IV

Form C-141 Revised April 3, 2017

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1RP-4853

Release Notificat	tion and Corrective Action
	OPERATOR Initial Report Sinal Report
Name of Company: COG Operating, LLC (OGRID# 229137	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No.: 432-683-7443
Facility Name: Raspberry State Com #001H	Facility Type: Tank Battery
Surface Owner: Fee Mineral Own	ner: State API No.: 30-025-43179
LOCAT	TION OF RELEASE
Unit Letter Section Township Range Feet from the No.	North/South Line Feet from the East/West Line County
P 27 21S 33E 330	South 200 East Lea
Latitude:32.44345842 L	Longitude: -103.5524045 NAD83
NATU	RE OF RELEASE
Type of Release: Oil	Volume of Release: Volume Recovered:
Source of Release: Flare	12bbls 8bbls Date and Hour of Occurrence: Date and Hour of Discovery:
Source of Release: Flare	10/20/17 7:00am 10/20/17 7:00am
Was Immediate Notice Given?	If YES, To Whom?
By Whom?	Date and Hour:
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.
Yes X No	
If a Watercourse was Impacted, Describe Fully.*	APPROVED
Describe Cause of Problem and Remedial Action Taken.*	By Olivia Yu at 1:47 pm, Sep 14, 2018
The throttle head did not engage to open Kimray dump and sent fluid replaced with a snap head.	d through the flare. The back pressure regulator was rebuilt and the throttle head was
Describe Area Affected and Cleanup Action Taken.*	
COG had the impacted area evaluated and drafted a remediation work	k plan that was subsequently approved by NMOCD. The remediation was carried out
in accordance with the approved work plan.	
I hereby certify that the information given above is true and complete	e to the best of my knowledge and understand that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain relea	ase notifications and perform corrective actions for releases which may endanger
	by the NMOCD marked as "Final Report" does not relieve the operator of liability nediate contamination that pose a threat to ground water, surface water, human health
	port does not relieve the operator of responsibility for compliance with any other
federal, state, or local laws and/or regulations.	
	OIL CONSERVATION DIVISION
91 11	RA A
All all an Alita	
Signature: Sheldon Hitom	Approved by Environmental Specialist:
Signature: Sheldon Jutan Printed Name: Sheldon L. Hitchcock	Approved by Environmental Specialist:
Printed Name: Sheldon L. Hitchcock	9/14/2018
Printed Name: Sheldon L. Hitchcock	Approval Date: 9/14/2018 Expiration Date: XX/XX/XXXX
Printed Name: Sheldon L. Hitchcock Title: HSE Coordinator	Approval Date: 9/14/2018 Expiration Date: XX/XX/XXXX Conditions of Approval: Attached

APPENDIX V



December 28, 2017

Olivia Yu Oil Conservation Division, District 1 1625 N. French Dr. Hobbs, NM 88240 APPROVED

By Olivia Yu at 4:01 pm, Jan 02, 2018

NMOCD approves of the delineation completed for 1RP-4853. Proposed remediation is approved with stipulations indicated in email correspondence.

Re: Work Plan Raspberry State Com #001H API #: 30-025-43179 RP#: 1RP-4853 Unit Letter P Section 27, Township 21S, Range 33E Lea County, NM

Ms. Yu/Ms. Tucker,

COG Operating, LLC (COG) is pleased to submit for your consideration the following remediation work plan for the Raspberry State Com #001H. This plan is in response to an oil water release that occurred on October 20, 2017. Subsequent to the release a C-141 initial report was submitted to the New Mexico Oil Conservation Division (NMOCD) on October 23, 2017.

BACKGROUND

The Raspberry State Com #001H release is located in Unit Letter P, Section 27, Township 21 South, and Range 33 East in Lea County, New Mexico. More specifically the latitude and longitude for this release are 32.44345842 North and -103.5524045 West.

On October 20, 2017, the throttle head did not engage to open the Kimray dump and sent fluid through the flare resulting in the release of approximately twelve (12) barrels (bbls) of oil. A vacuum truck was dispatched to the site to recover freestanding fluids. Approximately eight (8) bbls of oil were recovered.

On December 13, 2017, a site assessment and soil sampling were conducted in order to vertically and horizontally define the impacted area. A site diagram is included in Appendix I. The analytical results from the soil sampling activities are summarized in the table below.

GROUNDWATER AND SITE RANKING

According to the New Mexico Office of the State Engineer (NMOSE) groundwater in the project vicinity is approximately five-hundred and eighty-two (582) feet below ground surface (BGS) (Appendix II). No water well or surface water was observed within one-thousand (1,000) feet of the release site. Therefore the site ranking for this release is zero (0) based on the following:

Depth to groundwater	>100-feet
Distance to surface water body	>1000-feet
Wellhead Protection Area	>1000-feet

Analytical Results

Sample ID	Depth (feet)	Benzene (mg/kg)	Total BTEX	Chloride (mg/kg)	Total TPH
ID	(1001)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
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T-1	2	< 0.050	< 0.300	<10.0	<10.0
T-1	3	< 0.050	< 0.300	19.3	<10.0
T-1	4	< 0.050	< 0.300	<10.0	<10.0
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T-2	1	< 0.050	< 0.300	12.2	66.7
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T-2	3	< 0.050	< 0.300	<10.0	<10.0
T-2	4	< 0.050	< 0.300	<10.0	<10.0
T-3	0	< 0.050	< 0.300	57.4	757
T-3	1	< 0.050	< 0.300	11.8	<10.0
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T-3	3	< 0.050	< 0.300	13.8	<10.0
NORTH	0	< 0.050	< 0.300	<10.0	<10.0
SOUTH	0	< 0.050	< 0.300	484	105
EAST	0	< 0.050	< 0.300	<10.0	<10.0
WEST	0	< 0.050	< 0.300	18.0	<10.0

PROPOSED REMEDIAL ACTIONS

- The impacted area in the vicinity of sample location T-1 will be excavated to a depth of one (1) foot BGS.
- All of the excavated material will be transported to an NMOCD approved solid waste disposal facility.
- The excavation will backfilled with clean "like" material and contoured to match the surrounding terrain.

Should you have any questions or concerns please do not hesitate to contact me.

Sincerely,

Sheldon Jutan

Sheldon L. Hitchcock HSE Coordinator slhitchcock@concho.com

Enclosed:

Appendix I: Site Diagram Appendix II: Groundwater Data Appendix III: Initial C-141 (Copy) Appendix IV: Analytical Reports and Chain-of-Custody Forms

APPENDIX VI



COG OPERATING LLC RASPBERRY STATE COM #1H UL P SEC.26–T21S–R33E 330' FSL & 200' FEL LEA COUNTY, NM API #30–025–43179







APPENDIX VII



December 27, 2017

SHELDON HITCHCOCK

P. O. BOX 1630

ARTESIA, NM 88210

RE: RASPBERRY ST. COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 12/13/17 13:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE	Reported: 27-Dec-17 16:55
--	--	------------------------------

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T-1 0'	H703451-01	Soil	13-Dec-17 11:20	13-Dec-17 13:25
T-1 1'	H703451-02	Soil	13-Dec-17 11:22	13-Dec-17 13:25
T-1 2'	H703451-03	Soil	13-Dec-17 11:24	13-Dec-17 13:25
T-1 3'	H703451-04	Soil	13-Dec-17 11:26	13-Dec-17 13:25
T-1 4'	H703451-05	Soil	13-Dec-17 11:28	13-Dec-17 13:25
T-2 0'	H703451-06	Soil	13-Dec-17 11:35	13-Dec-17 13:25
T-2 1'	H703451-07	Soil	13-Dec-17 11:37	13-Dec-17 13:25
T-2 2'	H703451-08	Soil	13-Dec-17 11:39	13-Dec-17 13:25
T-2 3'	H703451-09	Soil	13-Dec-17 11:41	13-Dec-17 13:25
T-2 4'	H703451-10	Soil	13-Dec-17 11:43	13-Dec-17 13:25
T-3 0'	H703451-11	Soil	13-Dec-17 12:00	13-Dec-17 13:25
T-3 1'	H703451-12	Soil	13-Dec-17 12:02	13-Dec-17 13:25
T-3 2'	H703451-13	Soil	13-Dec-17 12:04	13-Dec-17 13:25
T-3 3'	H703451-14	Soil	13-Dec-17 12:06	13-Dec-17 13:25

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether su claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project:RASPBERRY ST. COM #1HReportedProject Number:NONE GIVEN27-Dec-17Project Manager:SHELDON HITCHCOCKFax To:NONE									:55
				F-1 0' 451-01 (So	,iI)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			96.9 %	72-	148	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	3750		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	1090		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			65.8 %	28.3	-164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			131 %	34.7	-157	7121801	MS	18-Dec-17	8015B	
Soluble (DI Water Extraction)			Green Analy	tical Lab	oratories					

100

2070

Cardinal Laboratories

Chloride

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence ar any other cause whitstoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether su claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

mg/kg wet

100

B712171

JDA

27-Dec-17

EPA300.0

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Reported: Project Number: NONE GIVEN 27-Dec-17 10 Project Manager: SHELDON HITCHCOCK Fax To: NONE T-1 1'									55
				T-1 1' 451-02 (So	.;1)					
				431-02 (30	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			95.8 %	72-	148	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	25.9		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	46.9		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			97.5 %	28.3	-164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			96.2 %	34.7	-157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Lab	oratories					
Soluble (DI Water Extraction)										
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

Cardinal Laboratories

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Project Num Project Mana		e given Ldon hit	H	Reported: 27-Dec-17 16:55			
				T-1 2'	' 1\					
				451-03 (So	11)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Volatile Organic Compounds	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID))		93.6 %	72-1	48	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by C	GC FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			85.4 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			85.4 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Labo	oratories					
Soluble (DI Water Extraction)										
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

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Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Project Num Project Mana	ber: NON						
				T-1 3' 451-04 (So	il)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborate	ories					
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050	0021	0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			94.3 %	72-1	48	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by GC	C FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			95.8 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			97.0 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Analy	ytical Labo	oratories					
Soluble (DI Water Extraction)										
Chloride	19.3		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Project Num Project Mana		e given _don hit	H	Reported: 27-Dec-17 16:55				
				T-1 4'							
				451-05 (So	11)						
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes	
			Cardina	ıl Laborato	ories						
Volatile Organic Compounds b	y EPA Method	8021									
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Surrogate: 4-Bromofluorobenzene (PID)			94.8 %	72-1	48	7121503	MS	15-Dec-17	8021B		
Petroleum Hydrocarbons by G	C FID										
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B		
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B		
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B		
Surrogate: 1-Chlorooctane			96.3 %	28.3-	164	7121801	MS	18-Dec-17	8015B		
Surrogate: 1-Chlorooctadecane			95.8 %	34.7-	157	7121801	MS	18-Dec-17	8015B		
			Green Anal	ytical Labo	oratories						
Soluble (DI Water Extraction)											
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0		

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Project Num Project Mana		ie given Ldon hit	H	Reported: 27-Dec-17 16:55			
				T-2 0'	.1)					
			H /03	451-06 (So	11)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	ories					
Volatile Organic Compounds	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)		94.8 %	72-1	48	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by (GC FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	3170		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	893		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			93.9 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			146 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Lab	oratories					
Soluble (DI Water Extraction)										
Chloride	147		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

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Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Reported: Project Number: NONE GIVEN 27-Dec-17 16 Project Manager: SHELDON HITCHCOCK Fax To: NONE T-2. 1'									55
				T-2 1'	•••					
			H703	451-07 (So	oil)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			95.5 %	72-	148	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	24.1		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	42.6		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			97.0 %	28.3	-164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			97.2 %	34.7	-157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Lab	oratories					
Soluble (DI Water Extraction)										
Chloride	12.2		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

Cardinal Laboratories

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Re Project Number: NONE GIVEN 27-De Project Manager: SHELDON HITCHCOCK Fax To: NONE T_2 2'									
				T-2 2' 451-08 (So	:1)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborate	ories					
Volatile Organic Compounds b	v EPA Method	8021								
Benzene*	< 0.050	0021	0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			94.4 %	72-1	48	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			101 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			103 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Labo	oratories					
Soluble (DI Water Extraction)										
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Project Nun Project Mana		e given _don hit	H	Reported: 27-Dec-17 16:55				
				T-2 3'							
				451-09 (So	11)						
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes	
			Cardina	al Laborate	ories						
Volatile Organic Compounds b	y EPA Method	8021									
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B		
Surrogate: 4-Bromofluorobenzene (PID)			93.9 %	72-1	48	7121503	MS	15-Dec-17	8021B		
Petroleum Hydrocarbons by G	C FID										
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B		
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B		
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B		
Surrogate: 1-Chlorooctane			97.5 %	28.3-	164	7121801	MS	18-Dec-17	8015B		
Surrogate: 1-Chlorooctadecane			95.9 %	34.7-	157	7121801	MS	18-Dec-17	8015B		
			Green Anal	ytical Labo	oratories						
Soluble (DI Water Extraction)											
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0		

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Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H R Project Number: NONE GIVEN 27-E Project Manager: SHELDON HITCHCOCK Fax To: NONE									55
				T-2 4' 451-10 (So	:1)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborate	ories					
Volatile Organic Compounds b	v EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			94.9 %	72-1	48	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			99.5 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			99.9 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Labo	oratories					
Soluble (DI Water Extraction)										
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

Cardinal Laboratories

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Reported: Project Number: NONE GIVEN 27-Dec-17 1 Project Manager: SHELDON HITCHCOCK Fax To: NONE T-3 0'									55
			H703	451-11 (So	11)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Volatile Organic Compounds by l	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			93.8 %	72	148	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	593		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	164		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			88.6 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			99.8 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Lab	oratories					
Soluble (DI Water Extraction)										
Chloride	57.4		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Project Num Project Mana		H	Reported: 27-Dec-17 16:55				
				T-3 1'						
			H703-	451-12 (So	il)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Volatile Organic Compounds b	v EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			95.1 %	72-1	48	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			90.2 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			90.0 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	tical Lab	oratories					
Soluble (DI Water Extraction)	11.0		10.0	ma/lrc (10	B712171	JDA	23-Dec-17	EDA 200.0	
Chloride	11.8		10.0	mg/kg wet	10	B/121/1	JDA	23-Dec-17	EPA300.0	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE						Reported: 27-Dec-17 16:55			
				T-3 2'	•1\					
				451-13 (So	11)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborato	ories					
Volatile Organic Compounds b	oy EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	15-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			94.7 % 72-148		48	7121503	MS	15-Dec-17	8021B	
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			84.9 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			86.7 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Labo	oratories					
Soluble (DI Water Extraction)										
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

Cardinal Laboratories

*=Accredited Analyte

Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager


COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Project Num Project Mana	ber: NON	e given Ldon hit	T. Com #1 Chcock	H	2	Reported: 7-Dec-17 16:	55
				T-3 3'						
			H703	451-14 (So	il)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	ories					
Volatile Organic Compounds	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID))		95.8 %	72-1	48	7121503	MS	16-Dec-17	8021B	
Petroleum Hydrocarbons by C	GC FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			88.0 %	28.3-	164	7121801	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			87.5 %	34.7-	157	7121801	MS	18-Dec-17	8015B	
			Green Anal	ytical Labo	oratories					
Soluble (DI Water Extraction)										
Chloride	13.8		10.0	mg/kg wet	10	B712171	JDA	23-Dec-17	EPA300.0	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASP Project Number: NONE Project Manager: SHEL Fax To: NONE	LDON HITCHCOCK	Reported: 7-Dec-17 16:55
--	--	----------------	-----------------------------

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyte	Kesuit	Liiiit	Ollits	Level	Kesun	70KEC	Lillins	KF D	Liiiit	notes
Batch 7121503 - Volatiles										
Blank (7121503-BLK1)				Prepared &	Analyzed:	15-Dec-1	7			
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0955		mg/kg	0.100		95.5	72-148			
LCS (7121503-BS1)				Prepared &	analyzed:	15-Dec-1	7			
Benzene	2.01	0.050	mg/kg	2.00		100	79.5-124			
Toluene	1.97	0.050	mg/kg	2.00		98.4	75.5-127			
Ethylbenzene	1.90	0.050	mg/kg	2.00		95.1	77.7-125			
Total Xylenes	5.87	0.150	mg/kg	6.00		97.8	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0927		mg/kg	0.100		92.7	72-148			
LCS Dup (7121503-BSD1)				Prepared &	Analyzed:	15-Dec-1	7			
Benzene	2.00	0.050	mg/kg	2.00		99.8	79.5-124	0.651	6.5	
Toluene	1.94	0.050	mg/kg	2.00		96.9	75.5-127	1.51	7.02	
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.5	77.7-125	0.643	7.83	
Total Xylenes	5.85	0.150	mg/kg	6.00		97.6	70.9-124	0.266	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0941		mg/kg	0.100		94.1	72-148			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. Project Number: NONE GIVEN Project Manager: SHELDON HITCH Fax To: NONE	27-Dec-17 16:55	
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

A 1. 4-	Result	Reporting Limit	Units	Spike Level	Source	%REC	%REC Limits	RPD	RPD Limit	Net
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 7121801 - General Prep - Organics										
Blank (7121801-BLK1)				Prepared &	Analyzed:	18-Dec-17				
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	43.4		mg/kg	50.0		86.8	28.3-164			
Surrogate: 1-Chlorooctadecane	46.0		mg/kg	50.0		92.0	34.7-157			
LCS (7121801-BS1)				Prepared &	Analyzed:	18-Dec-17	,			
GRO C6-C10	173	10.0	mg/kg	200		86.4	76.6-119			
DRO >C10-C28	194	10.0	mg/kg	200		97.1	81.4-124			
Total TPH C6-C28	367	10.0	mg/kg	400		91.7	79.4-121			
Surrogate: 1-Chlorooctane	42.8		mg/kg	50.0		85.6	28.3-164			
Surrogate: 1-Chlorooctadecane	42.5		mg/kg	50.0		85.0	34.7-157			
LCS Dup (7121801-BSD1)				Prepared &	Analyzed:	18-Dec-17	,			
GRO C6-C10	177	10.0	mg/kg	200		88.5	76.6-119	2.41	7.94	
DRO >C10-C28	200	10.0	mg/kg	200		99.9	81.4-124	2.90	9.83	
Total TPH C6-C28	377	10.0	mg/kg	400		94.2	79.4-121	2.67	8.57	
Surrogate: 1-Chlorooctane	44.5		mg/kg	50.0		88.9	28.3-164			
Surrogate: 1-Chlorooctadecane	44.6		mg/kg	50.0		89.2	34.7-157			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



	COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE	Reported: 27-Dec-17 16:55
I		Soluble (DI Water Extraction) - Quality Control	

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B712171 - General Prep - Wet Chem										
Blank (B712171-BLK1)				Prepared: 2	20-Dec-17 A	Analyzed: 2	2-Dec-17			
Chloride	ND	10.0	mg/kg wet							
LCS (B712171-BS1)				Prepared: 2	20-Dec-17 A	Analyzed: 2	2-Dec-17			
Chloride	243	10.0	mg/kg wet	250		97.1	85-115			
LCS Dup (B712171-BSD1)				Prepared: 2	20-Dec-17 A	Analyzed: 2	2-Dec-17			
Chloride	244	10.0	mg/kg wet	250		97.5	85-115	0.489	20	

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Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

- ND
 Analyte NOT DETECTED at or above the reporting limit

 RPD
 Relative Percent Difference

 **
 Samples not received at proper temperature of 6°C or below.

 Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
 Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keine



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name: Concho Resources	BILL TO	ANALYSIS REQUEST
Address: 2407 Pecos Avenue	,	
city: Artesia state: NM zip: 88210	Attn: Robert MoNoill	
Phone #:575-703-6475 Fax #:	Address:600 W Illinois Ave	
Project #: Project Owner: CONChO	City: Midland	
Project Name: Rasp Berry St. Com #14	State: TX Zip: 79701	<i>b</i>
Project Location: 1 - 26 - 215 - 33E	- 0	30
Sampler Name: 5, Hitch co ch	Fax #:	4
MP.	MATRIX PRESERV. SAMPLING	EP,
Lab I.D. Sample I.D. B OR (C)OM TAINERS NDWATER	: ASE: DOL	X
G)RAB # CONT GROUN		BTE
27-1-1	/ 1/0/11 1/ 1/	
	1 11:24	
5 7-14 61		
0	82.11	
21	/ 11:37 /	
97-23	/ / / / / /	
$\frac{10}{1-24}$	11143 /	
service. In no event shall Cardinal be liable for incidental or onsequential carage whatsoever shall be deemed warved unless made in writing and received by Cardinal within 30 days after completion of the applicable artifuldes or successors arising out of or related to the period and any after completion of the applicable artifuldes or successors arising out of or related to the period and any after completion of the applicable artifuldes or successors arising out of or related to the period to by Cardinal within 30 days after completion of the applicable artifuldes or successors arising out of or related to the period to by Cardinal intradion, business interruptions, loss of use, or loss of profits incurned by client. Its subactives, there are also arising the above stated reasons or otherways in the applicable articles of whether such claim is based upon any of the above stated reasons or otherways in the applicable articles of whether such claim is based upon any of the above stated reasons or otherways articles of whether such claim is based upon any of the above stated reasons or otherways in the applicable articles of whether such claim is based upon any of the above stated reasons or otherways in the applicable articles of whether such claim is based upon any of the above stated reasons or otherways articles of the applicable articles of the above stated reasons or otherways articles of the above stated reasons or o	shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable including without limitation, business interruptions, loss of use, or loss of profils incurred by client, its subsidiaries, noter by Cardinal, repardless of whether such claim is based upon any of the above stated reasons or otherwaise	
14000 mar 25	Phone Result:	Yes □ No Add'I Phone #: Yes □ No Add'I Fax #:
Sampler - 105 Bun Other - 101 (0 pp - Cool Intact	Sample Condition CHECKED BY: Cool Intact Initiat	
+ Cardinal amount	THO NO SIN	
T Cardinal cannot accept verbal changes. Please fax written changes to (575) 392-2326	jes to (575) 393 2326	

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name: Concho Resources	BILL TO	
Project Manager: Sheldon Hitchcock	P.O. #:	ANALISIS REQUEST
Address: 2407 Pecos Avenue	Company: COG	
City: Artesia state: NM zip: 88210		
Phone #:575-703-6475 Fax #:	Address:600 W. Illinois Ave	
Project #: Project Owner: CONCho		
SP BONY S		00
15-3		30
5.1	Fax #:	2
FOR Loss USE ONLY MP.	MATRIX PRESERV. SAMPLING	E PI
(G)RAB OR (C)ON # CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER : DTHER :	TPH BTEX Chlorides (-
12 T-3 1 13 T-3 1 13 T-3 1		12:00
T-33		12/08 / / /
analyses. All claims including these for negligence and any other cause whatsoever shall be deemed waived unless not and or for, shall be limited to the amount paid by the claim for the service. In no evert shall Cardinal be liable for incidential consequential damages, including without limitation, business interruptions, loss of react votand within 30 days after completion of the spliciable antiliates or successors arising out of or related to the performance of services hereinder by Cardinal, installation, business interruptions, loss of use, or loss of polis incurred by client, its subsidiaries, and the services hereinder by Cardinal, its patienties of whether such claims based upon any of the above stated reasons or otherwise. References are also applied on the above stated reasons or otherwise.	and any other cause whatsoever shall be deemed wived uries made in whing and treaved by Cardinal within 30 days after completion of the retrat or consequential damages, including without limitation, business interruptions, loss of rule, or loss of profils incurded by claudiat the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise and the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal the service of the services here such claims is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal the services of the services here such claims is based upon any of the above stated reasons or otherwise the services hereunder by Cardinal the services here such claims is based upon any of the above stated reasons or otherwise the services hereunder by the services here such claims is based upon any of the above stated reasons or otherwise the services hereunder by the services here such claims is based upon any of the above stated reasons or otherwise the services hereunder by the	don for the effort of the applicable subsidiaries otherwise.
Relinquished By: HCC Time: 75 1001	flenson	Phone Result: Yes No Add'I Phone #: Fax Result: Yes No Add'I Fax #: REMARKS:
Sampler - UPS - Bus - Other: 22.65% 22.4%	Sample Condition CHECKED BY: Cool Intact: Ves Yes Unitials	
† Cardinal cannot accept verbal changes. Please fax written changes to (575) 353-2326	en changes to (575) 393-2326	

Page 22 of 22

P62012



December 27, 2017

SHELDON HITCHCOCK

P. O. BOX 1630

ARTESIA, NM 88210

RE: RASPBERRY ST. COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 12/13/17 13:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project Number:	SHELDON HITCHCOCK	Reported: 27-Dec-17 17:01
--	-----------------	-------------------	------------------------------

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	
N. 0'	H703452-01	Soil	13-Dec-17 12:08	13-Dec-17 13:25	
S. 0'	H703452-02	Soil	13-Dec-17 12:10	13-Dec-17 13:25	
E. 0'	H703452-03	Soil	13-Dec-17 12:12	13-Dec-17 13:25	
W. 0'	H703452-04	Soil	13-Dec-17 12:14	13-Dec-17 13:25	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE						2	Reported: 7-Dec-17 17:0	01	
			H703	N. 0' 8452-01 (So	il)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardin	al Laborat	ories					
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			95.4 %	72-1	48	7121503	MS	16-Dec-17	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121809	MS	18-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121809	MS	18-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121809	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctane			92.1 %	28.3-	164	7121809	MS	18-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			91.1 %	34.7-	157	7121809	MS	18-Dec-17	8015B	
			Green Anal	ytical Lab	oratories					
Soluble (DI Water Extraction)										
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0	

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Celeg D. Keine



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE							Reported: 27-Dec-17 17:01			
			H703	S. 0' 452-02 (Sa	il)						
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes	
			Cardina	ıl Laborat	ories						
Volatile Organic Compounds by	EPA Method	8021									
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B		
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B		
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B		
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B		
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B		
Surrogate: 4-Bromofluorobenzene (PID)			94.4 %	72	48	7121503	MS	16-Dec-17	8021B		
Petroleum Hydrocarbons by GC	FID										
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B		
DRO >C10-C28*	60.9		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B		
EXT DRO >C28-C36	44.5		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B		
Surrogate: 1-Chlorooctane			78.1 %	28.3-	164	7121809	MS	19-Dec-17	8015B		
Surrogate: 1-Chlorooctadecane			78.2 %	34.7-	157	7121809	MS	19-Dec-17	8015B		
			Green Anal	ytical Lab	oratories						
Soluble (DI Water Extraction) Chloride	484		10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0		

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Celeg D. Keine



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE							2	Reported: 7-Dec-17 17:	01
				E. 0'						
			H703	452-03 (So	il)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborato	ories					
Volatile Organic Compounds	by EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	7121503	MS	16-Dec-17	8021B	
Surrogate: 4-Bromofluorobenzene (PID))		94.9 %	72-1	48	7121503	MS	16-Dec-17	8021B	
Petroleum Hydrocarbons by C	GC FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121809	MS	19-Dec-17	8015B	
Surrogate: 1-Chlorooctane			87.6 %	28.3-	164	7121809	MS	19-Dec-17	8015B	
Surrogate: 1-Chlorooctadecane			85.3 %	34.7-	157	7121809	MS	19-Dec-17	8015B	
			Green Anal	ytical Labo	ratories					
Soluble (DI Water Extraction)										
Chloride	<10.0		10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE								Reported: 27-Dec-17 17:01			
				W. 0' 452-04 (So	;1)							
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
			Cardina	l Laborat	ories							
Volatile Organic Compounds	by EPA Method 8	8021										
Benzene*	< 0.050		0.050	mg/kg	50	7121805	MS	18-Dec-17	8021B			
Toluene*	< 0.050		0.050	mg/kg	50	7121805	MS	18-Dec-17	8021B			
Ethylbenzene*	< 0.050		0.050	mg/kg	50	7121805	MS	18-Dec-17	8021B			
Total Xylenes*	< 0.150		0.150	mg/kg	50	7121805	MS	18-Dec-17	8021B			
Total BTEX	< 0.300		0.300	mg/kg	50	7121805	MS	18-Dec-17	8021B			
Surrogate: 4-Bromofluorobenzene (PL	D)		96.2 %	72-1	48	7121805	MS	18-Dec-17	8021B			
Petroleum Hydrocarbons by	GC FID											
GRO C6-C10*	<10.0		10.0	mg/kg	1	7121803	MS	18-Dec-17	8015B			
DRO >C10-C28*	<10.0		10.0	mg/kg	1	7121803	MS	18-Dec-17	8015B			
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	7121803	MS	18-Dec-17	8015B			
Surrogate: 1-Chlorooctane			84.8 %	28.3-	164	7121803	MS	18-Dec-17	8015B			
Surrogate: 1-Chlorooctadecane			83.6 %	34.7-	157	7121803	MS	18-Dec-17	8015B			
			Green Anal	ytical Labo	oratories							
Soluble (DI Water Extraction Chloride	1) 18.0		10.0	mg/kg wet	10	B712171	JDA	22-Dec-17	EPA300.0			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project Number:	SHELDON HITCHCOCK	Reported: 27-Dec-17 17:01
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Volatile Organic Compounds by EPA Method 8021 - Quality Control

		Donartine		Smiles	Source		%REC		RPD	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit	Notes
Batch 7121503 - Volatiles										
Blank (7121503-BLK1)				Prepared &	Analyzed:	15-Dec-1	7			
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0955		mg/kg	0.100		95.5	72-148			
LCS (7121503-BS1)				Prepared &	Analyzed:	15-Dec-1	7			
Benzene	2.01	0.050	mg/kg	2.00		100	79.5-124			
foluene	1.97	0.050	mg/kg	2.00		98.4	75.5-127			
Ethylbenzene	1.90	0.050	mg/kg	2.00		95.1	77.7-125			
Total Xylenes	5.87	0.150	mg/kg	6.00		97.8	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0927		mg/kg	0.100		92.7	72-148			
LCS Dup (7121503-BSD1)				Prepared &	Analyzed:	15-Dec-1	7			
Benzene	2.00	0.050	mg/kg	2.00		99.8	79.5-124	0.651	6.5	
Toluene	1.94	0.050	mg/kg	2.00		96.9	75.5-127	1.51	7.02	
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.5	77.7-125	0.643	7.83	
Total Xylenes	5.85	0.150	mg/kg	6.00		97.6	70.9-124	0.266	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0941		mg/kg	0.100		94.1	72-148			
Matrix Spike (7121503-MS1)	Sou	rce: H703450-	-04	Prepared: 1	5-Dec-17	Analyzed:	16-Dec-17			
Benzene	2.02	0.050	mg/kg	2.00	ND	101	70.9-127			
Toluene	1.97	0.050	mg/kg	2.00	0.010	97.8	46-161			
Ethylbenzene	1.91	0.050	mg/kg	2.00	ND	95.5	38.8-164			
Total Xylenes	5.84	0.150	mg/kg	6.00	0.035	96.8	41.9-151			
Surrogate: 4-Bromofluorobenzene (PID)	0.0937		mg/kg	0.100		93.7	72-148			

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Celey D. Keine



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210		Project Ni Project Ma	umber:	Raspberry None Giver Sheldon H None	N				Reported: Dec-17 1	7:01
	Volatile Organic	-	•	A Method 8 ooratories	021 - Qu	ality Co	ntrol			
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7121503 - Volatiles										
Matrix Spike Dup (7121503-MSD1)	Sou	ırce: H703450-	-04	Prepared: 1	5-Dec-17 A	Analyzed: 1	6-Dec-17			
Benzene	2.02	0.050	mg/kg	2.00	ND	101	70.9-127	0.354	3.45	
Toluene	1.97	0.050	mg/kg	2.00	0.010	97.7	46-161	0.0450	5.27	
Ethylbenzene	1.91	0.050	mg/kg	2.00	ND	95.7	38.8-164	0.190	4.92	
Total Xylenes	5.87	0.150	mg/kg	6.00	0.035	97.3	41.9-151	0.520	6.95	
Surrogate: 4-Bromofluorobenzene (PID)	0.0937		mg/kg	0.100		93.7	72-148			
Batch 7121805 - Volatiles										
Blank (7121805-BLK1)				Prepared &	Analyzed:	18-Dec-17	7			
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0967		mg/kg	0.100		96.7	72-148			
LCS (7121805-BS1)				Prepared &	Analyzed:	18-Dec-17	7			
Benzene	1.96	0.050	mg/kg	2.00		98.0	79.5-124			
Toluene	1.95	0.050	mg/kg	2.00		97.5	75.5-127			
Ethylbenzene	1.87	0.050	mg/kg	2.00		93.4	77.7-125			
Total Xylenes	5.84	0.150	mg/kg	6.00		97.3	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0948		mg/kg	0.100		94.8	72-148			
LCS Dup (7121805-BSD1)	Prepared & Analyzed: 18-Dec-17									
Benzene	1.95	0.050	mg/kg	2.00		97.7	79.5-124	0.335	6.5	
Toluene	1.94	0.050	mg/kg	2.00		97.2	75.5-127	0.250	7.02	
Ethylbenzene	1.87	0.050	mg/kg	2.00		93.5	77.7-125	0.0455	7.83	
Total Xylenes	5.80	0.150	mg/kg	6.00		96.7	70.9-124	0.633	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0937		mg/kg	0.100		93.7	72-148			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project Number: N	SHELDON HITCHCOCK	Reported: 27-Dec-17 17:01
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Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 7121805 - Volatiles										
Matrix Spike (7121805-MS1)	Sour	ce: H703452-	-04	Prepared &	Analyzed:	18-Dec-17	,			
Benzene	1.99	0.050	mg/kg	2.00	ND	99.7	70.9-127			
Toluene	2.00	0.050	mg/kg	2.00	0.046	97.5	46-161			
Ethylbenzene	1.94	0.050	mg/kg	2.00	ND	97.1	38.8-164			
Total Xylenes	6.01	0.150	mg/kg	6.00	ND	100	41.9-151			
Surrogate: 4-Bromofluorobenzene (PID)	0.0926		mg/kg	0.100		92.6	72-148			
Matrix Spike Dup (7121805-MSD1)	Sour	ce: H703452-	-04	Prepared &	Analyzed:	18-Dec-17	,			
Benzene	2.01	0.050	mg/kg	2.00	ND	101	70.9-127	0.959	3.45	
Toluene	1.99	0.050	mg/kg	2.00	0.046	97.4	46-161	0.106	5.27	
Ethylbenzene	1.96	0.050	mg/kg	2.00	ND	98.0	38.8-164	0.937	4.92	
Total Xylenes	6.07	0.150	mg/kg	6.00	ND	101	41.9-151	0.898	6.95	
Surrogate: 4-Bromofluorobenzene (PID)	0.0928		mg/kg	0.100		92.8	72-148			

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COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project Number: N	SHELDON HITCHCOCK	Reported: 27-Dec-17 17:01
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Petroleum Hydrocarbons by GC FID - Quality Control

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Batch 7121803 - General Prep - Organics Prepared & Analyzed: 18-Dec-17 GRO C6-C10 ND 10.0 mg/kg DRO >C10-C28 ND 10.0 mg/kg EXT DRO >C28-C35 ND 10.0 mg/kg Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctadecane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 Colspan=10 Repared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 Colspan=10 Repared & Analyzed: 18-Dec-17 Repared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 20.0 90.1 81.4-124 Surrogate: 1-Chlorooctadecane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane <th>RPD Limit</th> <th>Notes</th>	RPD Limit	Notes
GRO C6-C10 ND 10.0 mg/kg DRO >C10-C28 ND 10.0 mg/kg EXT DRO >C28-C35 ND 10.0 mg/kg EXT DRO >C28-C36 ND 10.0 mg/kg Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctadecane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 90.1 81.4-124 Total TPH C6-C28 377 10.0 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctadecane 45.4 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctadecane 45.4 mg/kg 200 110 76.6-119 11.3 DRO >C10-C28 207 10.0 mg/kg 200 103		
DRO >C10-C28 ND 10.0 mg/kg EXT DRO >C28-C35 ND 10.0 mg/kg Surrogate: 1-Chlorooctane M3.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 98.3 76.4-119 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 45.4 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 45.4 mg/kg 200 110 76.6-119 11.3 Surogate: 1-Chlorooctane 207 10.0 mg/		
EXT DRO >C28-C35 ND 10.0 mg/kg EXT DRO >C28-C36 ND 10.0 mg/kg Total TPH C6-C28 ND 10.0 mg/kg Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctadecane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 90.1 81.4-124 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 90.9 34.7-157 LCS Dup (7121803-BSD1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 207 10.0 mg/kg 200 103 81.4-124 13.9 DRO >C10-C28 207 10.0 mg/kg 200 103 81.4-124 13.9 DRO >C10-C28 207 10.0 mg/kg 200 103 <td< td=""><td></td><td></td></td<>		
EXT DRO >C28-C36 ND 10.0 mg/kg Total TPH C6-C28 ND 10.0 mg/kg Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctadecane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 94.2 79.4-121 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 45.4 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 45.4 mg/kg 200 110 76.6-119 11.3 DRO >C10-C28 207 10.0 mg/kg 200 103 81.4-124 13.9 GRO C6-C10 220 10.0 mg/kg 20.0 103 81.4-124 13.9 T		
Total TPH C6-C28 ND 10.0 mg/kg Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctadecane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 90.1 81.4-124 Total TPH C6-C28 377 10.0 mg/kg 50.0 94.2 79.4-121 104 50.0 96.9 34.7-157 105 104 76.6-119 10.5 104 76.6-119 10.0 10.0 mg/kg 200 94.2 79.4-121 104 76.4-119 105 104 76.4 106 90.9 34.7-157 105 106 106 107 79.4-121 105 106 106 106 106 106 106 106 106 106 106 106 10.0 106 <td< td=""><td></td><td></td></td<>		
Surrogate: 1-Chlorooctane 43.4 mg/kg 50.0 86.7 28.3-164 Surrogate: 1-Chlorooctadecane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 90.1 81.4-124 Total TPH C6-C28 377 10.0 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 45.4 mg/kg 50.0 90.9 34.7-157 LCS Dup (7121803-BSD1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 220 10.0 mg/kg 200 11.0 76.6-119 11.3 Drotal TPH C6-C28 207 10.0 mg/kg 200 103 81.4-124 13.9 Surrogate: 1-C		
Surrogate: 1-Chlorooctadecane 43.4 mg/kg 50.0 86.9 34.7-157 LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 94.2 79.4-121 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 45.4 mg/kg 50.0 90.9 34.7-157 LCS Dup (7121803-BSD1) Prepared & Analyzed: 18-Dec-17 Context (18-Dec-17) Context (18-Dec-17) GRO C6-C10 220 10.0 mg/kg 200 100 76.6-119 11.3 DRO >C10-C28 207 10.0 mg/kg 200 100 76.6-119 11.3 DRO >C10-C28 207 10.0 mg/kg 200 103 81.4-124 13.9 Surrogate: 1-Chlorooctane 50.4 mg/kg		
LCS (7121803-BS1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 197 10.0 mg/kg 200 98.3 76.6-119 DRO >C10-C28 180 10.0 mg/kg 200 90.1 81.4-124 Total TPH C6-C28 377 10.0 mg/kg 400 94.2 79.4-121 Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctane 45.4 mg/kg 50.0 90.9 34.7-137 LCS Dup (7121803-BSD1) Prepared & Analyzed: 18-Dec-17 70.0 70.0 mg/kg 200 110 76.6-119 11.3 DRO >C10-C28 207 10.0 mg/kg 200 100 79.4-121 12.5 GRO C6-C10 200 10.0 mg/kg 400 107 79.4-121 12.5 Surrogate: 1-Chlorooctane 50.4 mg/kg 50.0 90.0 34.7-137 Matrix Spike (7121803-MS1) Source: H703452-04 mg/kg 50.0 90.0 34.7-137 Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 </td <td></td> <td></td>		
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Surrogate: 1-Chlorooctane 46.7 mg/kg 50.0 93.4 28.3-164 Surrogate: 1-Chlorooctadecane 45.4 mg/kg 50.0 90.9 34.7-157 LCS Dup (7121803-BSD1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 220 10.0 mg/kg 200 110 76.6-119 11.3 DRO >C10-C28 207 10.0 mg/kg 200 103 81.4-124 13.9 Total TPH C6-C28 427 10.0 mg/kg 50.0 101 28.3-164 Surrogate: 1-Chlorooctane 50.4 mg/kg 50.0 101 28.3-164 Surrogate: 1-Chlorooctane 49.5 mg/kg 50.0 99.0 34.7-157 Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 7 GRO C6-C10 209 10.0 mg/kg 200 3.85 103 39.3-131 DRO >C10-C28 199 10.0 mg/kg 200 2.77 98.0 18.2-177 Total TPH C6-C28		
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LCS Dup (7121803-BSD1) Prepared & Analyzed: 18-Dec-17 GRO C6-C10 220 10.0 mg/kg 200 110 76.6-119 11.3 DRO >C10-C28 207 10.0 mg/kg 200 103 81.4-124 13.9 Total TPH C6-C28 427 10.0 mg/kg 400 107 79.4-121 12.5 Surrogate: 1-Chlorooctane 50.4 mg/kg 50.0 101 28.3-164 Surrogate: 1-Chlorooctadecane 49.5 mg/kg 50.0 99.0 34.7-157 Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 GRO C6-C10 209 10.0 mg/kg 200 3.85 103 39.3-131 DRO >C10-C28 199 10.0 mg/kg 200 2.77 98.0 18.2-177 Total TPH C6-C28 408 10.0 mg/kg 400 6.63 100 30-150		
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DRO >C10-C28 207 10.0 mg/kg 200 103 81.4-124 13.9 Total TPH C6-C28 427 10.0 mg/kg 400 107 79.4-121 12.5 Surrogate: 1-Chlorooctane 50.4 mg/kg 50.0 101 28.3-164 Surrogate: 1-Chlorooctadecane 49.5 mg/kg 50.0 99.0 34.7-157 Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 7 GRO C6-C10 209 10.0 mg/kg 200 3.85 103 39.3-131 DRO >C10-C28 199 10.0 mg/kg 200 2.77 98.0 18.2-177 Total TPH C6-C28 408 10.0 mg/kg 400 6.63 100 30-150		
Total TPH C6-C28 427 10.0 mg/kg 400 107 79.4-121 12.5 Surrogate: 1-Chlorooctane 50.4 mg/kg 50.0 101 28.3-164 Surrogate: 1-Chlorooctadecane 49.5 mg/kg 50.0 99.0 34.7-157 Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 GRO C6-C10 209 10.0 mg/kg 200 3.85 103 39.3-131 DRO >C10-C28 199 10.0 mg/kg 200 2.77 98.0 18.2-177 Total TPH C6-C28 408 10.0 mg/kg 400 6.63 100 30-150	7.94	QR-0
Surrogate: 1-Chlorooctane 50.4 mg/kg 50.0 101 28.3-164 Surrogate: 1-Chlorooctadecane 49.5 mg/kg 50.0 99.0 34.7-157 Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 GRO C6-C10 209 10.0 mg/kg 200 3.85 103 39.3-131 DRO >C10-C28 199 10.0 mg/kg 200 2.77 98.0 18.2-177 Total TPH C6-C28 408 10.0 mg/kg 400 6.63 100 30-150	9.83	QR-0
Surrogate: 1-Chlorooctadecane 49.5 mg/kg 50.0 99.0 34.7-157 Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 GRO C6-C10 209 10.0 mg/kg 200 3.85 103 39.3-131 DRO >C10-C28 199 10.0 mg/kg 200 2.77 98.0 18.2-177 Total TPH C6-C28 408 10.0 mg/kg 400 6.63 100 30-150	8.57	QR-0
Matrix Spike (7121803-MS1) Source: H703452-04 Prepared & Analyzed: 18-Dec-17 GRO C6-C10 209 10.0 mg/kg 200 3.85 103 39.3-131 DRO >C10-C28 199 10.0 mg/kg 200 2.77 98.0 18.2-177 Total TPH C6-C28 408 10.0 mg/kg 400 6.63 100 30-150		
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Total TPH C6-C28 408 10.0 mg/kg 400 6.63 100 30-150		
Surrogate: 1-Chlorooctane 43.9 mg/kg 50.0 87.9 28.3-164		
Surrogate: 1-Chlorooctadecane 41.7 mg/kg 50.0 83.4 34.7-157		

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COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210		Project No Project Ma	umber: inager:	: Raspberry St. Com #1H : None given : Sheldon Hitchcock : None			Reported: 27-Dec-17 17:01			
	Petroleum	Hydrocarb	ons by	GC FID - Q	Quality C	ontrol				
		Cardiı	nal La	boratories						
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7121803 - General Prep - Organics										
Matrix Spike Dup (7121803-MSD1)	Sou	ırce: H703452-	-04	Prepared &	Analyzed:	18-Dec-17	7			
GRO C6-C10	221	10.0	mg/kg	200	3.85	109	39.3-131	5.47	18.5	
DRO >C10-C28	218	10.0	mg/kg	200	2.77	108	18.2-177	9.52	22.5	
Total TPH C6-C28	439	10.0	mg/kg	400	6.63	108	30-150	7.47	117	
Surrogate: 1-Chlorooctane	48.9		mg/kg	50.0		97.7	28.3-164			
Surrogate: 1-Chlorooctadecane	44.2		mg/kg	50.0		88.3	34.7-157			
Batch 7121809 - General Prep - Organics										
Blank (7121809-BLK1)				Prepared &	Analyzed:	18-Dec-17	7			
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	51.6		mg/kg	50.0		103	28.3-164			
Surrogate: 1-Chlorooctadecane	54.5		mg/kg	50.0		109	34.7-157			
LCS (7121809-BS1)				Prepared: 1	8-Dec-17	Analyzed: 1	19-Dec-17			
GRO C6-C10	206	10.0	mg/kg	200		103	76.6-119			
DRO >C10-C28	243	10.0	mg/kg	200		122	81.4-124			
Total TPH C6-C28	449	10.0	mg/kg	400		112	79.4-121			
Surrogate: 1-Chlorooctane	50.5		mg/kg	50.0		101	28.3-164			
Surrogate: 1-Chlorooctadecane	50.3		mg/kg	50.0		101	34.7-157			
LCS Dup (7121809-BSD1)				Prepared: 1	8-Dec-17	Analyzed:	19-Dec-17			
GRO C6-C10	199	10.0	mg/kg	200		99.5	76.6-119	3.27	7.94	
DRO >C10-C28	234	10.0	mg/kg	200		117	81.4-124	3.78	9.83	
Total TPH C6-C28	433	10.0	mg/kg	400		108	79.4-121	3.55	8.57	
Surrogate: 1-Chlorooctane	48.9		mg/kg	50.0		97.9	28.3-164			
Surrogate: 1-Chlorooctadecane	49.9		mg/kg	50.0		99.8	34.7-157			

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COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE	Reported: 27-Dec-17 17:01
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 7121809 - General Prep - Organics										
Matrix Spike (7121809-MS1)	Sour	ce: H703469	-29	Prepared:	18-Dec-17	Analyzed: 1	9-Dec-17			
GRO C6-C10	194	50.0	mg/kg	200	21.2	86.5	39.3-131			
DRO >C10-C28	1830	50.0	mg/kg	200	1760	36.9	18.2-177			
Total TPH C6-C28	2030	50.0	mg/kg	400	1780	61.7	30-150			
Surrogate: 1-Chlorooctane	43.4		mg/kg	50.0		86.8	28.3-164			
Surrogate: 1-Chlorooctadecane	69.9		mg/kg	50.0		140	34.7-157			
Matrix Spike Dup (7121809-MSD1)	Sour	e: H703469	-29	Prepared:	18-Dec-17	Analyzed: 1	9-Dec-17			
GRO C6-C10	212	50.0	mg/kg	200	21.2	95.4	39.3-131	9.77	18.5	
DRO >C10-C28	1810	50.0	mg/kg	200	1760	28.2	18.2-177	26.7	22.5	QM-0
Total TPH C6-C28	2030	50.0	mg/kg	400	1780	61.8	30-150	0.146	117	
Surrogate: 1-Chlorooctane	47.3		mg/kg	50.0		94.6	28.3-164			
Surrogate: 1-Chlorooctadecane	72.4		mg/kg	50.0		145	34.7-157			

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	COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project:RASPBERRY ST. COM #1HReported:Project Number:NONE GIVEN27-Dec-17 17:01Project Manager:SHELDON HITCHCOCKFax To:NONENONE							
L	Soluble (DI Water Extraction) - Quality Control								

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B712171 - General Prep - Wet Chem										
Blank (B712171-BLK1)				Prepared: 2	20-Dec-17 A	Analyzed: 2	2-Dec-17			
Chloride	ND	10.0	mg/kg wet							
LCS (B712171-BS1)				Prepared: 2	20-Dec-17 A	Analyzed: 2	2-Dec-17			
Chloride	243	10.0	mg/kg wet	250		97.1	85-115			
LCS Dup (B712171-BSD1)				Prepared: 2	20-Dec-17 A	Analyzed: 2	2-Dec-17			
Chloride	244	10.0	mg/kg wet	250		97.5	85-115	0.489	20	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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1 Carolinal cannot accept verbal changes. Please fax written changes to (575) 393-2326	NOTE: Luastry and Conneges, Caratinar's liability and cleart's exclusive termsdy for any of All characteristic status of the caratinative liable for incodential or consequential damages, including with results and or related to the performance of services hereander by Cardin quished By: quished By: Part 13/17 R quished By: Timp: 125 Date: B quished By: Circle One) Time: B vereed By: Circle One) Time: B		Sample I.D. PR (C)OMP. INERS WATER ATER	FOR LAB USE ONLY	" P-26-215-33E	Project Name: Rashborry St. Com #1H	•#:575-703-6475 •*#·	City: Artesia State: NM 7:0:00010	2407 Deed Mitchcock	Concho Resources	57	Laboratories	CARDINAL
s to (575) 393-2326	an nanicy wetter based in contrast or lort, shall be initiad to the anount paid by the cleat for the elect for the elect for the elect on the applicable out imation. based within so draws after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion of the applicable incurred by cleaned within 30 draw after completion draw after applicable incurred by cleaned within 30 draw after completion draw after applicable incurred by cleaned within 30 draw after completion draw after applicable incurred by cleaned within 30 draw after completion draw after applicable incurred by cleaned within 30 draw after completion draw after applicable incurred by cleaned within 30 draw after completion draw after applicable incurred by cleaned within 30 draw after applicable incurred by cleaned within 30 draw after completion draw after applicable incurred by cleaned within 30 draw after applicable incurred by the draw after applicable incurred by cleaned within 30 draw after applicable incurred by cleaned within 30 draw after applicable incurred by cleaned within 30 draw after applicable	OIL SLUDGE OTHER: ACID/BAS ICE / COO OTHER: CLUD/BAS ICE / COO OTHER: CLUD/BAS ICE / COO OTHER: ICE / COO OT		Fax #:			Address:600 W. Illinois Ave	Company: COG		BILL TO ANALYCIC	CHAIN-OF-CUSTODY AND ANALYSIS REQUEST		
	非 非 非										D ANALYSIS REQUEST		

PG 1 OF1



April 02, 2018

SHELDON HITCHCOCK COG OPERATING P. O. BOX 1630 ARTESIA, NM 88210

RE: RASPBERRY ST. COM #1H

Enclosed are the results of analyses for samples received by the laboratory on 03/26/18 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



COG OPERATINGProject:RASPBERRYP. O. BOX 1630Project Number:NONE GIVENARTESIA NM, 88210Project Manager:SHELDON HFax To:NONE	N 02-Apr-18 17:21
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T-1 1'	H800849-01	Soil	23-Mar-18 11:00	26-Mar-18 11:25
T-1 N. SIDEWALL	H800849-02	Soil	23-Mar-18 11:10	26-Mar-18 11:25
T-1 S. SIDEWALL	H800849-03	Soil	23-Mar-18 11:20	26-Mar-18 11:25
T-1 E. SIDEWALL	H800849-04	Soil	23-Mar-18 11:30	26-Mar-18 11:25
T-1 W. SIDEWALL	H800849-05	Soil	23-Mar-18 11:40	26-Mar-18 11:25
T-2	H800849-06	Soil	23-Mar-18 11:50	26-Mar-18 11:25

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	· · · · · · · · · · · · · · · · · · ·								Reported: 12-Apr-18 17:	21
				T-1 1'						
			H8008	849-01 (So))					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	l Laborat	ories					
Volatile Organic Compounds by	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			104 %	72-	148	8032801	MS	28-Mar-18	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	68.6		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	34.7		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctane			104 %	41-	142	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			105 %	37.6	-147	8032802	MS	28-Mar-18	8015B	
			Green Analy	vtical Lab	oratories					
Soluble (DI Water Extraction)										

10.0

48.6

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Chloride

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mg/kg wet

B803195

10

JDA

28-Mar-18

EPA300.0

Celeg D. Keine



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210		C	Reported: 02-Apr-18 17:21							
				SIDEWA 849-02 (So						
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Volatile Organic Compounds by	v EPA Method	8021								
Benzene*	< 0.050	0021	0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			105 %	72	148	8032801	MS	28-Mar-18	8021B	
Petroleum Hydrocarbons by G	C FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	156		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	40.1		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctane			95.6 %	41-	142	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			106 %	37.6-	-147	8032802	MS	28-Mar-18	8015B	
			Green Anal	ytical Lab	oratories					
Soluble (DI Water Extraction)	63.0		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	
	05.0		10.0	mg/kg wet	10	B 005175	5011	20-10101-10	21/1500.0	

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COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE								Reported: 02-Apr-18 17:21		
				SIDEWA 849-03 (So							
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes	
			Cardina	ıl Laborat	ories						
Volatile Organic Compounds by	EPA Method	8021									
Benzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B		
Toluene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B		
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B		
Total Xylenes*	< 0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B		
Total BTEX	< 0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B		
Surrogate: 4-Bromofluorobenzene (PID)			107 %	72	48	8032801	MS	28-Mar-18	8021B		
Petroleum Hydrocarbons by GC	C FID										
GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B		
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B		
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B		
Surrogate: 1-Chlorooctane			94.5 %	41-	42	8032802	MS	28-Mar-18	8015B		
Surrogate: 1-Chlorooctadecane			85.6 %	37.6-	147	8032802	MS	28-Mar-18	8015B		
			Green Anal	ytical Lab	oratories						
Soluble (DI Water Extraction)											
Chloride	203		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0		

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210			Pro Project Num Project Mana Fax	Η	Reported: 02-Apr-18 17:21					
				SIDEW/ 849-04 (So						
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Volatile Organic Compounds by 1	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			102 %	72-	148	8032801	MS	28-Mar-18	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctane			95.5 %	41-	142	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			86.1 %	37.6	-147	8032802	MS	28-Mar-18	8015B	
			Green Anal	ytical Lab	oratories					
Soluble (DI Water Extraction)										
Chloride	45.0		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	

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COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE								Reported: 02-Apr-18 17:21			
				. SIDEWA 849-05 (So								
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes		
			Cardina	ıl Laborat	ories							
Volatile Organic Compounds by	EPA Method	8021										
Benzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B			
Toluene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B			
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8032801	MS	28-Mar-18	8021B			
Total Xylenes*	< 0.150		0.150	mg/kg	50	8032801	MS	28-Mar-18	8021B			
Total BTEX	< 0.300		0.300	mg/kg	50	8032801	MS	28-Mar-18	8021B			
Surrogate: 4-Bromofluorobenzene (PID)			104 %	72-	48	8032801	MS	28-Mar-18	8021B			
Petroleum Hydrocarbons by GC	FID											
GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B			
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B			
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B			
Surrogate: 1-Chlorooctane			93.9 %	41-	42	8032802	MS	28-Mar-18	8015B			
Surrogate: 1-Chlorooctadecane			84.5 %	37.6	147	8032802	MS	28-Mar-18	8015B			
			Green Analy	ytical Lab	oratories							
Soluble (DI Water Extraction)												
Chloride	10.7		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project:RASPBERRY ST. COM #1HReported:Project Number:NONE GIVEN02-Apr-18 17:21Project Manager:SHELDON HITCHCOCKFax To:NONE									21
			H800	T-2 849-06 (So	il)					
Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Volatile Organic Compounds by I	EPA Method	8021								
Benzene*	< 0.050		0.050	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Toluene*	< 0.050		0.050	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Ethylbenzene*	< 0.050		0.050	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Total Xylenes*	< 0.150		0.150	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Total BTEX	< 0.300		0.300	mg/kg	50	8040203	MS	02-Apr-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			109 %	72	148	8040203	MS	02-Apr-18	8021B	
Petroleum Hydrocarbons by GC	FID									
GRO C6-C10*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctane			97.7 %	41-	142	8032802	MS	28-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			88.3 %	37.6	-147	8032802	MS	28-Mar-18	8015B	
Soluble (DI Water Extraction)			Green Anal	ytical Lab	oratories					
Chloride	<10.0		10.0	mg/kg wet	10	B803195	JDA	28-Mar-18	EPA300.0	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM #1H Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE	Reported: 02-Apr-18 17:21
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Volatile Organic Compounds by EPA Method 8021 - Quality Control Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 8032801 - Volatiles										
Blank (8032801-BLK1)				Prepared &	Analyzed:	28-Mar-18	3			
Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.106		mg/kg	0.100		106	72-148			
LCS (8032801-BS1)				Prepared &	Analyzed:	28-Mar-18	3			
Benzene	1.97	0.050	mg/kg	2.00		98.4	79.5-124			
Toluene	2.01	0.050	mg/kg	2.00		101	75.5-127			
Ethylbenzene	2.02	0.050	mg/kg	2.00		101	77.7-125			
Total Xylenes	5.90	0.150	mg/kg	6.00		98.3	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.102		mg/kg	0.100		102	72-148			
LCS Dup (8032801-BSD1)				Prepared &	Analyzed:	28-Mar-18	3			
Benzene	2.05	0.050	mg/kg	2.00		102	79.5-124	3.83	6.5	
Toluene	2.08	0.050	mg/kg	2.00		104	75.5-127	3.07	7.02	
Ethylbenzene	2.07	0.050	mg/kg	2.00		104	77.7-125	2.61	7.83	
Total Xylenes	6.02	0.150	mg/kg	6.00		100	70.9-124	2.03	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0989		mg/kg	0.100		98.9	72-148			

Batch 8040203 - Volatiles

Blank (8040203-BLK1)				Prepared & Analy	zed: 02-Apr-18		
Benzene	ND	0.050	mg/kg				
Toluene	ND	0.050	mg/kg				
Ethylbenzene	ND	0.050	mg/kg				
Total Xylenes	ND	0.150	mg/kg				
Total BTEX	ND	0.300	mg/kg				
Surrogate: 4-Bromofluorobenzene (PID)	0.102		mg/kg	0.100	102	72-148	

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Celey D. Keine



COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RASPBERRY ST. COM # Project Number: NONE GIVEN Project Manager: SHELDON HITCHCOCK Fax To: NONE	02-Apr-18 17:21
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Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 8040203 - Volatiles										
LCS (8040203-BS1)				Prepared &	Analyzed:	02-Apr-18				
Benzene	2.05	0.050	mg/kg	2.00		103	79.5-124			
Toluene	2.10	0.050	mg/kg	2.00		105	75.5-127			
Ethylbenzene	2.10	0.050	mg/kg	2.00		105	77.7-125			
Total Xylenes	6.10	0.150	mg/kg	6.00		102	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.104		mg/kg	0.100		104	72-148			
LCS Dup (8040203-BSD1)				Prepared &	Analyzed:	02-Apr-18				
Benzene	2.07	0.050	mg/kg	2.00		104	79.5-124	1.03	6.5	
Toluene	2.12	0.050	mg/kg	2.00		106	75.5-127	0.715	7.02	
Ethylbenzene	2.14	0.050	mg/kg	2.00		107	77.7-125	1.89	7.83	
Total Xylenes	6.20	0.150	mg/kg	6.00		103	70.9-124	1.71	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.105		mg/kg	0.100		105	72-148			

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Celey D. Keine



COG OPERATINGProject:RASPBERRYP. O. BOX 1630Project Number:NONE GIVERARTESIA NM, 88210Project Manager:SHELDON HFax To:NONE	N 02-Apr-18 17:21	
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Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 8032802 - General Prep - Organics										
Blank (8032802-BLK1)				Prepared &	k Analyzed:	28-Mar-18				
GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	53.0		mg/kg	50.0		106	41-142			
Surrogate: 1-Chlorooctadecane	48.2		mg/kg	50.0		96.5	37.6-147			
LCS (8032802-BS1)				Prepared &	k Analyzed:	28-Mar-18				
GRO C6-C10	214	10.0	mg/kg	200		107	76.5-133			
DRO >C10-C28	226	10.0	mg/kg	200		113	72.9-138			
Total TPH C6-C28	440	10.0	mg/kg	400		110	78-132			
Surrogate: 1-Chlorooctane	51.7		mg/kg	50.0		103	41-142			
Surrogate: 1-Chlorooctadecane	50.3		mg/kg	50.0		101	37.6-147			
LCS Dup (8032802-BSD1)				Prepared &	Analyzed:	28-Mar-18				
GRO C6-C10	217	10.0	mg/kg	200		108	76.5-133	1.18	20.6	
DRO >C10-C28	226	10.0	mg/kg	200		113	72.9-138	0.178	20.6	
Total TPH C6-C28	443	10.0	mg/kg	400		111	78-132	0.486	18	
Surrogate: 1-Chlorooctane	52.6		mg/kg	50.0		105	41-142			
Surrogate: 1-Chlorooctadecane	50.7		mg/kg	50.0		101	37.6-147			

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



COG OPERATING P. O. BOX 1630	Project: Project Number:	RASPBERRY ST. COM #1H NONE GIVEN	Reported: 02-Apr-18 17:21
ARTESIA NM, 88210	Project Manager:	SHELDON HITCHCOCK	
	Fax To:	NONE	

Soluble (DI Water Extraction) - Quality Control

Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B803195 - General Prep - Wet Chem										
Blank (B803195-BLK1)				Prepared &	Analyzed:	27-Mar-18				
Chloride	ND	10.0	mg/kg wet							
LCS (B803195-BS1)				Prepared: 2	27-Mar-18 A	Analyzed: 2	8-Mar-18			
Chloride	242	10.0	mg/kg wet	250		96.6	85-115			
LCS Dup (B803195-BSD1)				Prepared: 2	27-Mar-18 A	Analyzed: 2	8-Mar-18			
Chloride	242	10.0	mg/kg wet	250		96.7	85-115	0.0662	20	

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Celeg D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

- ND
 Analyte NOT DETECTED at or above the reporting limit

 RPD
 Relative Percent Difference

 **
 Samples not received at proper temperature of 6°C or below.

 Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
 Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keine

NM 882/0 393-2476 S S S FO <	Relinquished By: Relinquished By: Buddha Minister By: Relinquished By: (Circle One) Sampler - UPS - Bus - Other: † Cardinal cannot accept ve	Address: 2407 Pecos Avenue city: Artesia Phone #:575-703-6475 Project Name: $R_{ab}P_{b} = rry$ Project Location: $L \leq e_{c} \leq r/r$ Sampler Name: $C \ln ric \int rr$ FOR LAB U.D. Sample I. Lab I.D. $T-1 I'$ 2 T-1 N Side L 4 T-1 I' 2 T-1 N Side L 4 T-1 E Side L 5 T-1 N Side L	101 East Marland, Hobbs, (575) 393-2326 FAX (575) Company Name: Concho Resource Project Manager: Sheldon Hitchcock
CHAIN-OF-CUSTODY AND AND PO.# BILL TO AnALYSIS Company: COG Am: Robert McNeill Address: Address: Zip: None #: None #: Phone #: Prove: Zip: Address: Address: Phone #: Prove: Zip: Address: Address: Phone #: Prove: Zip: Address: Address: Prove: Date TIME Pressend Address: Pressend Name Pressend Address: Address: Pressend Name Pressend Address: Address: Pressend Name Pressend Bet FE x 8021 B Bet FE x 8021 B Chabride: EP # 300 Pressend Pressend: No Addressed Addressed Addressed Pressend: No Addressed Bet FE x 8021 B Chabride: EP # 300 Addressed Pressend: No Addressed Addressed Addressed Addressed Pressend: No Addressed Addressed Addressed Addressed P	Time: Received By: Time: Received By: Time: Received By: Time: Received By: Time: Received By: The Column Sample Cool No Pres	e: NN ct Ow CCA	LOPPALOPPES 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476 Concho Resources
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