State of New Mexico Energy, Minerals and Natural Resources Department

Oil Conservation Division

Cabinet Secretary

Matthias Saver **Deputy Cabinet Secretary**

MEMORANDUM

Date: October 24, 2017

To: Files: Administrative Orders SWD-806-B, SWD-1010, SWD-1055

From: Phillip Goetze, Engineering Bureau, OCH

RE: ADDITION OF NEW WATER SOURCES FOR THREE CLASS II DISPOSAL WELLS, SAN JUAN COUNTY, NEW MEXICO

CLASS II WELL INFORMATION:

- 1. Well Name: Juniper SWD Well No. 1 API No. 30-045-29732 Well Location: Unit D, Section 16, T24N, R10W, NMPM; 880' FNL and 730' FWL Injection Authority: SWD-806-B dated May 18, 2006 [IPI-302 dated June 30, 2008]
- 2. Well Name: Juniper West SWD Well No. 1 API No. 30-045-33771 Well Location: Unit N, Section 24, T24N, R11W, NMPM; 700' FSL and 1715' FWL Injection Authority: SWD-1055 dated December 1, 2006 [IPI-293 dated March 11, 2008]
- 3. Well Name: Juniper Well No. 4 API No. 30-045-32783 Well Location: Unit N, Section 17, T24N, R10W, NMPM; 660' FSL and 2015' FWL Injection Authority: SWD-1010 dated December 27, 2005 [IPI-416 dated February 14, 2014]

Coleman Oil & Gas, Inc. (OGRID No. 4838), the operator for the referenced salt water disposal (SWD) wells, has requested the addition of a new fluid source for disposal into all three SWD wells. All three SWD wells are active disposal wells with completions in the Mesaverde Group (with a combination of perforations in the Menefee Formation and Point Lookout Sandstone). Additionally, all three wells operate under approved Injection Pressure Increase (IPI) orders. The surface pressure gradients for these IPI orders range from 0.44 psi/foot to 0.62 psi/foot.

Previous sources for disposal in the three SWD had been identified in the C-108 applications for each well as being from coalbed methane (CBM) production in the Fruitland Formation.

The new sources will be from horizontal oil wells recently completed in the Mancos Shale. The operator proposes blending of the new source water with the Fruitland Formation production water to reduce any potential impacts to the SWD wells and their reservoir.

The operator provided recent analyses of the general chemistry for both the existing fluids being injected into the SWD wells and the new sources. This data is summarized in Table 1 (New Sources) and Table 2 (Existing SWD Fluids).



Susana Martinez Governor

Ken McQueen

Source		Major Ion Concentrations*								
Identification	Sample Date	TDS	Cl ⁻ Na ⁺ K ⁺ 12200 7720 203	SO4	Fe(II)	pH				
Good Times 24-10	11/13/2015	24700	12200	7720	203	18.1	178	5.59		
Pinon 1H	11/13/2015	29100	16300	10500	86.4	<2.00	<4.5	7.39		
Pinon 2H	11/13/2015	28800	15400	10400	88.6	<2.00	23.1	7.08		

Table 1: Summary of New Sources Analytical Results

*All concentrations, except pH value, are in milligrams per liter (mg/L).

Table 2: Summary of Analytical Results for SWD Wells

Source	Sample	Sample Major Ion Concentrations*							
Identification	Date	TDS	Cl.	Na ⁺	K+	SO4	Fe(II)	pH	
Juniper SWD No. 1	9/26/2017	16600	10100	3440	50.0	<200	<2.00	7.46	
Juniper West SWD No. 1	9/26/2017	14100	8380	2930	35.9	<2.00	<2.00	7.86	
Juniper SWD No. 4	9/26/2017	13400	8480	2860	34.8	<200	<2.00	7.41	

*All concentrations, except pH value, are in milligrams per liter (mg/L).

The analytical results for the new source waters indicate an average range of total dissolved concentrations (TDS) that are approximately 87 percent greater than current TDS values in the SWD well samples. However, the blending of the old and new produced water sources will reduce the TDS values as not to impact the reservoir. Accelerated scaling in the well bore will require additional maintenance and should be considered before application for a new IPI in any of the wells. Overall cation/anion concentrations of the new sources do not indicate any unusual distribution that might cause concern.

The review by the Engineering Bureau of the purposed action to include the new sources (while blending with the exiting CBM produced waters) is acceptable. The addition of new disposal fluids is defined as a minor modification [not requiring notice for permit modification] and the Bureau recommends the approval by the District of the C-103s for the inclusion of the new sources for each SWD well.

The Bureau does recommend that any future IPI applications have step-rate tests that are conducted using this new produced water chemistry.

Submit 1 Copy To Appropriate District Office <u>District I</u> – (575) 393-6161 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> – (575) 748-1283 811 S. First St., Artesia, NM 88210 <u>District III</u> – (505) 334-6178 1000 Rio Brazos Rd., Aztec, NM 87410 <u>District IV</u> – (505) 476-3460 1220 S. St. Francis Dr., Santa Fe, NM 87505	State of New Mexico Energy, Minerals and Natural Resources OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505	Form C-103 Revised July 18, 2013 WELL API NO. 30-045-29732 5. Indicate Type of Lease STATE FEE 6. State Oil & Gas Lease No. V-5292 (State)			
SUNDRY NOTIC (DO NOT USE THIS FORM FOR PROPOSA DIFFERENT RESERVOIR. USE "APPLICA	ES AND REPORTS ON WELLS ALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A ATION FOR PERMIT" (FORM C-101) FOR SUCH	7. Lease Name or Unit Agreement Name Juniper SWD			
1. Type of Well: Oil Well	Gas Well 🗌 Other SWD; Mesa Verde	8. Well Number #1			
2. Name of Operator Coleman Oil & Gas, Inc		9. OGRID Number 4838			
3. Address of Operator P.O. Drawer 3337, Farmington N	M 87401	10. Pool name or Wildcat SWD: Mesa Verde			
 Well Location Unit Letter D : 880 feet f Section 16 Township 	 rom the North line and 730 feet from the West line 24N Range 10W NMPM County San Juan 11. Elevation (Show whether DR, RKB, RT, GR, etc. 6794' GL 	.)			
12. Check A	ppropriate Box to Indicate Nature of Notice,	Report or Other Data			

NOTICE OF	IN	TENTION TO:	SUBSEQUENT REI	PORT OF:	
PERFORM REMEDIAL WORK		PLUG AND ABANDON		REMEDIAL WORK	ALTERING CASING
TEMPORARILY ABANDON		CHANGE PLANS		COMMENCE DRILLING OPNS.	P AND A
PULL OR ALTER CASING		MULTIPLE COMPL		CASING/CEMENT JOB	
DOWNHOLE COMMINGLE					
CLOSED-LOOP SYSTEM					
OTHER:			\boxtimes	OTHER:	
10 0 11 1	1	1 1	11 -	and the set of the set of a first set of the	1 1 1 1 1 1 1 1 1 1

 Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Coleman Oil & Gas respectfully request permission to accept Mancos Produced Water into the Juniper SWD #1 Disposal. Water will be primarily transferred through produced water gathering system operated by Coleman Oil & Gas, Inc. If produced water gathering system is down for repairs, water will be trucked. See the attached water analysis taken from three Mancos producers. Mancos produced water will be blended with Basin Fruitland Coal water.

Coleman Oil & Gas is a joint working interest owner in the Pinon Unit, Horizontal Mancos producers.

Juniper SWD #1 Administrative Order SWD-806

Spud Date: April 01, 2002

Rotary Rig Release Date: April 07, 2002

I hereby certify that the	he information above is t	rue and complete to	the best of my knowledge	and belief.	
./	1/1/	2			
SIGNATURE	hay Lanon		Operations Engineer	DATE: August 29, 2017	
Type or print name: For State Use Only	Michael T. Hanson	E-mail address:	mhanson@cog-fmn.com	PHONE: (505) 327-0356	
APPROVED BY: Conditions of Approv	val (if any):	TITLE		DATE	



dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Farmington NM, 87401	Project Manager: 1	Matt Pulte	01/03/14 15:33
1215 Basin Rd	Project Name / Number: 0	Coleman	Reported:
Baker Hughes	Project: A	API +	

Coleman Juniper SWD #1

1312198-02 (Water)											
Analyte		Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst	
General Chemistry											
Alkalinity, Bicarbonate*		500	10.0		mg/L	10	01/02/14	2320 B	Q1	JAW	
Alkalinity, Carbonate*		<10.0	10.0		mg/L	10	01/02/14	2320 B	Q1	JAW	
Alkalinity, Hydroxide*		<10.0	10.0		mg/L	10	01/02/14	2320 B	Q1	JAW	
Alkalinity, Total*		500	10.0		mg/L	10	01/02/14	2320 B	Q1	JAW	
Chloride*		9300	1000	500	mg/L	100	12/31/13	4500-CI- C		JAW	
Conductivity*		28400	10.0		uS/cm	1	12/27/13	2510 B		MJV	
Hardness		378	66.2	0.880	mg/L	10	01/02/14	2340 B		JGS	
pH*		7.98			pH Units	1	12/27/13	EPA150.1	H1	MJV	
Resistivity		35.2			ohm/cm	1	12/31/13	2510 B		DJZ	
Silcia Potentially Dissolved		14.4	10.7	7.38	mg/L	10	01/02/14	2340 B		JGS	
Specific Gravity		1.010			N/A	1	12/30/13	Hydrometer, Modified Bouyoucos	H2	ABP	
Sulfate		<10.0	10.0	1.08	mg/L	1	12/31/13	4500-SO42-E		ABP	
TDS*		14500	10.0		mg/L	1	01/02/14	EPA160.1	H2, Q1	JAW	
Potentially Dissolved Metals	by ICP										
Barium*		3.52	0.100	0.038	mg/L	10	01/02/14	EPA200.7		JGS	
Calcium*		103	10.0	0.039	mg/L	10	01/02/14	EPA200.7		JGS	
Iron*		1.79	0.500	0.040	mg/L	10	01/02/14	EPA200.7		JGS	
Lead*		<1.00	1.00	0.240	mg/L	10	01/02/14	EPA200.7		JGS	
Magnesium*		29.1	10.0	0.190	mg/L	10	01/02/14	EPA200.7		JGS	
Manganese*	12.15	< 0.050	0.050	0.004	mg/L	10	01/02/14	EPA200.7		JGS	
Potassium*		21.5	10.0	3.64	mg/L	10	01/02/14	EPA200.7		JGS	
Silicon		6.72	5.00	3.45	mg/L	10	01/02/14	EPA200.7		JGS	
Sodium*		5640	10.0	0.041	mg/L	10	01/02/14	EPA200.7		JGS	
Strontium*		8.57	1.00	0.003	mg/L	10	01/02/14	EPA200.7		JGS	
Zinc*		< 0.500	0.500	0.025	mg/L	10	01/02/14	EPA200.7		JGS	

Cation/Anion Balance

-3.27

Composite Sample Juniper SWD#1_ en Analytical Laboratories

Green Analytical Laboratories

in Zufett

Debbie Zufelt, Reports Manager

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Analytical Report

Report Summary

Client: Coleman Oil & Gas Chain Of Custody Number: Samples Received: 9/26/2017 5:15:00PM Job Number: 05206-0001 Work Order: P709055 Project Name/Location: Juniper SWD #1

Walter Hindun

Date: 10/13/17

Report Reviewed By:

Walter Hinchman, Laboratory Director

Date: 10/13/17

Tim Cain, Quality Assurance Officer

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

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L	Analyical Repor	t for Samples	
Farmington NM, 87499	Project Manager:	Mike Hanson	13-Oct-17 14:26
P.O. Box 3337	Project Number:	05206-0001	Reported:
Coleman Oil & Gas	Project Name:	Juniper SWD #1	

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Water FC Produced	P709055-01A	Water	09/26/17	09/26/17	Poly 500mL

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Coleman Oil & Gas	Project	Name:	Junip	er SWD #1					
P.O. Box 3337	Project	Project Number: 05206-0001			Reported:				
Farmington NM, 87499	Project	Manager:	Mike	Hanson				13-Oct-17 14:	26
		Water	FC Prod	uced					
P		P70905	55-01 (Wa	iter)					
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Wet Chem/Gravimetric									
Total Dissolved Solids	16600	10.0	mg/L	1	1739026	09/29/17	10/03/17	SM2540C	
Dissolved Metals by 6010									
Calcium	85.9	0.50	mg/L	1	1739020	09/28/17	10/12/17	EPA 6010C	
Iron	ND	2.00	mg/L	1	1739020	09/28/17	10/12/17	EPA 6010C	
Magnesium	26.8	0.20	mg/L	1	1739020	09/28/17	10/12/17	EPA 6010C	
Potassium	50.0	0.50	mg/L	1	1739020	09/28/17	10/12/17	EPA 6010C	
Sodium	3440	2.00	mg/L	1	1739020	09/28/17	10/12/17	EPA 6010C	
Sodium Absorption Ratio	83.1		N/A	1	1741028	10/13/17	10/13/17	[CALC]	
Anions by 300.0									
Fluoride	ND	25.0	mg/L	100	1739016	09/27/17	09/27/17	EPA 300.0	
Chloride	10100	200	mg/L	100	1739016	09/27/17	09/27/17	EPA 300.0	
Nitrite-N	ND	25.0	mg/L	100	1739016	09/27/17 11:33	09/27/17 14:03	EPA 300.0	
Nitrate-N	ND	25.0	mg/L	100	1739016	09/27/17 11:33	09/27/17 14:03	EPA 300.0	
o-Phosphate-P	ND	25.0	mg/L	100	1739016	09/27/17 11:33	09/27/17 14:03	EPA 300.0	
Sulfate	ND	200	mg/L	100	1739016	09/27/17	09/27/17	EPA 300.0	
Wet Chemistry									
рН @25℃	7.46		pH Units	1	1739023	09/29/17 08:27	09/29/17 10:51	9040C/4500 H+B	HI
Specific Conductance (@ 25 C)	28000	10.0	uS/cm	I	1739024	09/29/17	09/29/17	9050A/2510 B	
Total Alkalinity (as CaCO3 at pH 4.5)	375	10.0	mg/L	I	1739025	09/29/17	10/02/17	SM2320B	
Bicarbonate Alkalinity (as CaCO3)	375		mg/L	1	1739025	09/29/17	10/02/17	SM2320B	
Hydroxide Alkalinity (as CaCO3)	0.00		mg/L	1	1739025	09/29/17	10/02/17	SM2320B	
Carbonate Alkalinity (as CaCO3)	0.00		mg/L	1	1739025	09/29/17	10/02/17	SM2320B	

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Coleman Oil & Gas	Pro	ject Name:	J	uniper SWD #	1					
P.O. Box 3337	Pro	ject Number:	0	5206-0001				Report	ed:	
Farmington NM, 87499	Pro	ject Manager:	N	like Hanson					13-Oct-17	14:26
	Wet	Chem/Grav	vimetri	c - Quality	Control					
	E	nvirotech A	nalyti	cal Labor	atory					
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1739026 - Wet Chemistry Preparation										
Blank (1739026-BLK1)				Prepared: 2	9-Sep-17	Analyzed: 0)3-Oct-17			
Total Dissolved Solids	ND	10.0	mg/L							
LCS (1739026-BS1)				Prepared: 2	9-Sep-17	Analyzcd: ()3-Oct-17			
Total Dissolved Solids	84.0	10.0	mg/L	100		84.0	50-150			
Duplicate (1739026-DUP1)	Sou	rce: P709055-	01	Prepared: 2	9-Sep-17	Analyzed: ()3-Oct-17			
Total Dissolved Solids	16100	10.0	mg/L		16600			3.31	5	

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Coleman Oil & Gas	Pro	Project Name: Ju			¥1					
P.O. Box 3337	Pro	Project Number:		5206-0001					Report	ted:
Farmington NM, 87499	Pro	ject Manager:	N	Aike Hanson					13-Oct-17	14:26
	Disso	lved Metals	s by 601	10 - Qualit	y Control	l				
	E	nvirotech A	Analyti	ical Labor	atory					
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1739020 - Metals Water Hotblock	Digestion EPA	3010A/200.2								
Blank (1739020-BLK1)				Prepared:	28-Sep-17	Analyzed: (03-Oct-17			
Calcium	ND	0.50	mg/L							
Iron	ND	2.00	**							
Magnesium	ND	0.20								
Potassium	ND	0.50	**							
Sodium	ND	2.00	۰.							
LCS (1739020-BS1)				Prepared:	28-Sep-17	Analyzed: (03-Oct-17			
Calcium	55.6	0.50	mg/L	50.0		111	85-115			
Iron	55.2	2.00		50.0		110	80-120			
Magnesium	46.6	0.20		50.0		93.2	85-115			
Potassium	4.75	0.50	**	5.00		95.0	85-115			
Sodium	48.2	2.00	*	50.0		96.3	85-115			
Matrix Spike (1739020-MS1)	Sou	irce: P709062-	06	Prepared:	28-Sep-17	Analyzed: (03-Oct-17			
Calcium	102	0.50	mg/L	50.0	50.5	103	70-130			
Iron	51.3	2.00	**	50.0	ND	103	75-125			
Magnesium	49.8	0.20	**	50.0	2.53	94.6	70-130			
Potassium	7.29	0.50	**	5.00	2.14	103	70-130			
Sodium	66.0	2.00	**	50.0	15.2	101	70-130			
Matrix Spike Dup (1739020-MSD1)	Sou	irce: P709062-	06	Prepared:	28-Sep-17	Analyzed: (03-Oct-17			
Calcium	105	0.50	mg/L	50.0	50.5	109	70-130	2.71	20	
Iron	53.5	2.00		50.0	ND	107	75-125	4.05	20	
Magnesium	49.8	0.20	*	50,0	2.53	94.5	70-130	0.0402	20	
Potassium	7.12	0.50	**	5.00	2.14	99.6	70-130	2.30	20	
Sodium	64.9	2.00	н	50.0	15.2	99.4	70-130	1.60	20	

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Coleman Oil & Gas	Pro	oject Name:	Jı	Juniper SWD #1							
P.O. Box 3337	Pro	oject Number:	0	05206-0001					Reported:		
Farmington NM, 87499	Pro	oject Manager:	N	like Hanson					13-Oct-17	14:26	
		Anions by 3	00.0 - Q	uality Cor	itrol						
	E	nvirotech A	analyti	cal Labor	atory						
		Reporting		Spike	Source		%REC		RPD		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	
Batch 1739016 - Anion Extraction EPA 300.0											
Blank (1739016-BLK1)		Pr			Analyzed:	27-Sep-17					
Fluoride	ND	0.25	mg/L								
Chloride	ND	2.00	"								
Nítrite-N	ND	0.25									
Nitrate-N	ND	0.25									
o-Phosphate-P	ND	0.25	"								
Sulfate	ND	2.00	۳								
LCS (1739016-BS1)				Prepared &	Analyzed:	27-Sep-17					
Fluoride	2.57	0.25	mg/L	2.50		103	90-110				
Chloride	25.6	2.00	и	25.0		102	90-110				
Nitrite-N	2.59	0.25	"	2.50		104	90-110				
Nitrate-N	2.45	0.25		2.50		98.1	90-110				
o-Phosphate-P	11.8	0.25	"	12.5		94.5	90-110				
Sulfate	25.3	2.00	"	25.0		101	90-110				
Matrix Spike (1739016-MS1)	Sou	arce: P709055-	01	Prepared &	Prepared & Analyzed: 27-Sep-17						
Fluoride	262	25.0	mg/L	250	ND	105	80-120				
Chloride	12600	200		2500	10100	102	80-120				
Nitrite-N	257	25.0		250	ND	103	80-120				
Nitrate-N	248	25.0	**	250	ND	99.1	80-120				
o-Phosphate-P	1200	25.0		1250	ND	95.6	80-120				
Sulfate	2560	200	н	2500	ND	102	80-120				
Matrix Spike Dup (1739016-MSD1)	So	arce: P709055-	01	Prepared &	Analyzed:	27-Sep-17					
Fluoride	261	25.0	mg/L	250	ND	104	80-120	0.650	20		
Chloride	12500	200		2500	10100	98.6	80-120	0.633	20		
Nitrite-N	257	25.0	н	250	ND	103	80-120	0.117	20		
Nitrate-N	246	25.0	*	250	ND	98.6	80-120	0.567	20		
o-Phosphate-P	1190	25.0	11	1250	ND	95.1	80-120	0.554	20		
Sulfate	2540	200	н	2500	ND	102	80-120	0.671	20		

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Coleman Oil & Gas	Pro	ject Name:	Ju	niper SWD #	<i>‡</i> 1							
P.O. Box 3337	Pro	ject Number:	05	206-0001					Report	ted:		
Farmington NM, 87499	Pro	ject Manager:	М	ike Hanson					13-Oct-17 14:26			
		Wet Chemi	istry - Q	uality Cor	itrol							
	E	nvirotech	Analytic	cal Labor	atory							
		Reporting		Spike	Source		%REC		RPD		7	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes		
Batch 1739023 - Wet Chemistry Preparation			a.								_	
LCS (1739023-BS1)				Prepared &	Analyzed:	29-Sep-1	7					
рН	7.98		pH Units	8.00		99.9	₹8.75-101.25				_	
Duplicate (1739023-DUP1)	Sou	rce: P709055	-01	Prepared &	Analyzed:	29-Sep-1	7					
pH	7.41		pH Units		7.46			0.672	20			

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			Page 7 of 11



Coleman Oil & Gas	Pro	ject Name:	Ju	uniper SWD #	1							
P.O. Box 3337	Pro	ject Number:	0	5206-0001					Report	ed:		
Farmington NM, 87499	Pro	ject Manager:	N	like Hanson					13-Oct-17 14:26			
		Wet Chemi	stry - Q	uality Con	trol							
	E	nvirotech A	Analyti	cal Labor	atory							
		Reporting		Spike	Source	,	%REC		RPD			
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes		
Batch 1739024 - Wet Chemistry Preparation									1			
Blank (1739024-BLK1)				Prepared &	Analyzed:	29-Sep-17						
Specific Conductance (@ 25 C)	ND	10.0	uS/cm									
LCS (1739024-BS1)				Prepared &	Analyzed:	29-Scp-17						
Specific Conductance (@ 25 C)	1420	10.0	uS/cm	1410		101	98-102					
Duplicate (1739024-DUP1)	Sou	rce: P709055-	01	Prepared &	Analyzed:							
Specific Conductance (@ 25 C)	28100	10.0	uS/cm		28000			0.357	20			

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Coleman Oil & Gas	Proj	ect Name:	Jı	uniper SWD #	#1					
P.O. Box 3337	Proj	ject Number:	0	5206-0001					Report	ted:
Farmington NM, 87499	Proj	ject Manager:	M	fike Hanson					13-Oct-17	14:26
		Wet Chemis	stry - Q	uality Cor	itrol					
	Er	wirotech A	Inalyti	cal Labor	atory					
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1739025 - Wet Chemistry Preparation										
LCS (1739025-BS1)				Prepared:	29-Sep-17	Analyzed: 0	2-Oct-17			
Total Alkalinity (as CaCO3 at pH 4.5)	260	10.0	mg/L	250		104	70-130			
Duplicate (1739025-DUP1)	Sou	rce: P709055-	01	Prepared: 2	29-Sep-17	Analyzed: 0	2-Oct-17			
Total Alkalinity (as CaCO3 at pH 4.5)	385	10.0	mg/L		375			2.63	20	

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l	Coleman O	il & Gas	Project Name:	Juniper SWD #1	
	P.O. Box 32	337	Project Number:	05206-0001	Reported:
	Farmington	NM, 87499	Project Manager:	Mike Hanson	13-Oct-17 14:26
			Notes and De	efinitions	
	H1	Sample was received after regulatory hold-tin	ne exceeded for target and	ilyte.	
	DET	Analyte DETECTED			

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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ient: Coleman Or	L+GA	s,IN	C		Report Attention	1	0.33	10	La	b Us	e Or	ly	3		TA	T	E	PA Progr	am
roject: Juniper 5	wD#	1		Report due	by:		Lab	WO	#	Paral	Job	Num	ber	a see	1D	3D	RCRA	CWA	SDWA
roject Manager: Mila	HANS	on		Attention:		11.1 March 1	P	1090	155		05.	206-	-00	01	1.0		1. P. L. M.	a secolar for	
ddress: D.O. DKApper	333	17		Address:	Address:					F	Analy	sis an	d M	etho	d		2	St	ate
ty, State, Zip Farmingo	NM	8749	2	City, State,	Zip		115	115	1.3	15 15								NM CO UT AZ	
10ne: (505) 566 - 1	1996		_ 123	Phone:			y 80	y 80	17	0		0.0		1					
nail: Mhanson C Co	9- fm	2.00	二 國語	Email:			02	0	80	826	601	e 30	8.1	5					
Time Date Matrix of Sampled Sampled	No Containers	Sample IC)			Lab Number	DRO/O	GRO/D	BTEX b	VOC by	Metals	Chlorid	TPH 41	Cur.	Ani			Rer	marks
126 gioofm 1/20	1	W	ATER	. FC	PRODUCED	1								×	X				
1					*														
		Reg	ucsr	STD	WTR														
		Anol	ysis	Catio	· Anion														
ditional Instructions:				Via	ive in ca	210-	anning mana				ليبسيها								
eld sampler), attest to the validity and a e of collection is considered fraud and n	uthenticity o nay be groun	f this sample	e. I am aware	e that tampering with	n or intentionally mislabellin	g the sample location	n, date d	or			Sample: received	s requirir d packed	ng them I in los a	nal pres It an avg	ervation temp al	must be bove 0 b	received on ut less than 6	ce the day they °C on subseque	are sampled or nt days.
linguished by (Signature)	Date/	5/2017	Time 5:1	Received	by: (Signature)	Date 9/2/17	2	Time 17	-15		Rece	eived	lon	ice:	La	b Us	e Only N		
linquisher by: (Signature)	Date		Time	Received	by: (Signature)	Date		Time			T1 AVG	Ten	np°(g	T2 44	1		<u>T3</u>	
mple Matrix: S - Soil, Sd - Solid, Sg -	Sludge, A -	Aqueous,	O - Other _	(Containe	r Typ	e: g -	glass	s, p -	poly/	plast	ic, a	g - ar	nber	glass	, v - VOA	1	
te: Samples are discarded 30 days a mples is applicable only to those sar	after results mples recei	are report ved by the	ted unless of laboratory	with this COC. T	ts are made. Hazardous ne liability of the laborao	samples will be re try is limited to th	e amo	to cli unt pa	ient or id for	dispo on the	sed of repor	at the t.	clien	t expe	nse. T	he rep	oort for the	analysis of	the above
Jenviro	te	ch	•	and the second															
- CHILL	LC				5796 US Highway 64, Farming	on, NM 87401				Ph	(505) 632	-0615	FX (505)	032-18	\$				factorech ha



Analytical Report

Report Summary

Client: Coleman Oil & Gas Chain Of Custody Number: Samples Received: 11/16/2015 7:05:00AM Job Number: 05206-0001 Work Order: P511033 Project Name/Location: Good Times 24-10

Date: 11/25/15

Entire Report Reviewed By:

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

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Γ	Coleman Oil & Gas	Project Name:	Good Times 24-10	
l	P.O. Box 3337	Project Number:	05206-0001	Reported:
l	Farmington NM, 87499	Project Manager:	Mike Hanson	25-Nov-15 12:07

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Good Times 24-10	P511033-01A	Aqueous	11/13/15	11/16/15	Poly 500mL

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Coleman Oil & Gas	Project	Name:	Good	Times 24-1	0				
P.O. Box 3337	Project	Number:	05206	-0001				Reported:	
Farmington NM, 87499	Project	Manager:	Mike	Hanson			·	25-Nov-15 12	:07
		Good	Times 24	-10					
		P5110	33-01 (Wa	ter)					
		Reporting			-				
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
рН @20.6℃	5.59		pH Units	1	1547032	11/20/15 14:31	11/20/15 14:35	150.1/4500H	
Electrical Conductivity	28900		umhos/cm	1	1547032	11/20/15 14:31	11/20/15 14:35	EPA 120.1	
Total Dissolved Solids	24700	10.0	mg/L	1	1547020	11/19/15	11/19/15	160.1/2540C	
Sodium Absorption Ratio	140		N/A	1	1548015	11/25/15	11/25/15	[CALC]	
Total Alkalinity as CaCO3	1080	10.0	mg/L	I	1547021	11/19/15	11/19/15	Hach Method 8203	
Total Hardness as CaCO3	574	18.6	mg/L		[CALC]	11/20/15	11/24/15	[CALC]	
Bicarbonate as CaCO3	ND	10.0	mg/L	1	1547021	11/19/15	11/19/15	Hach Method 8203	
Carbonate as CaCO3	ND	10.0	mg/L	1	1547021	11/19/15	11/19/15	Hach Method 8203	
Hydroxide as CaCO3	ND	10.0	mg/L	1	1547021	11/19/15	11/19/15	Hach Method 8203	
Nitrate-N	4.43	0.25	mg/L	1	1547013	11/18/15 09:00	11/18/15 18:35	EPA 300.0	H2
Nitrite-N	54.1	0.25	mg/L	I	1547013	11/18/15 09:00	11/19/15 19:09	EPA 300.0	H2
Chloride	12200	2.00	mg/L	1	1547013	11/18/15	11/19/15	EPA 300.0	
Fluoride	ND	0.25	mg/L	1	1547013	11/18/15	11/19/15	EPA 300.0	
o-Phosphate-P	105	0.25	mg/L	1	1547013	11/18/15 09:00	11/19/15 19:09	EPA 300.0	H2
Sulfate	18.1	2.00	mg/L	1	. 1547013	11/18/15	11/18/15	EPA 300.0	
Iron	178	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Calcium	174	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Magnesium	33.9	1.80	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Potassium	203	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Sodium	7720	18.0	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	

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Coleman Oil & Gas	Project Name:	Good Times 24-10	,
P.O. Box 3337	Project Number:	05206-0001	Reported:
Farmington NM, 87499	Project Manager:	Mike Hanson	25-Nov-15 12:07

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1547013 - Anion Extraction EPA 300.0										
Blank (1547013-BLK1)				Prepared &	Analyzed:	<u>18-Nov-1</u> 5				
Nitrate-N	ND	0.25	mg/L							
Nitrite-N	ND	0.25								
Chloride	ND	2.00	н							
Fluoride	ND	0.25								
o-Phosphate-P	ND	0.25	*							
Sulfate	ND	. 2.00								
LCS (1547013-BS1)				Prepared &	Analyzed:	18-Nov-15				
Nitrate-N	4.76	0.25	mg/L	5.00		95.2	90-110			
Nitrite-N	5.13	0.25	11	5.00		103	90-110		•	
Chloride	48.6	2.00		50.0		97.1	90-110			
Fluoride	5.13	0.25	•	5.00		103	90-110			
o-Phosphate-P	25.6	0.25	1	25.0		102	90-110			
Sulfate	47.2	2.00	•	50.0	· .	94.5	90-110			
Matrix Spike (1547013-MS1)	So	urce: P511036- (01	Prepared &	ک Analyzed:	18-Nov-15	i			
Nitrate-N	48.2	2.50	mg/L	50.0	ND	96.4	80-120			
Nitrite-N	51.4	2.50		50.0	ND	103	80-120			
Chloride	571	20.0		500	77.7	98.6	80-120			
Fluoride	56.0	2.50		50.0	3.90	104	80-120			
o-Phosphate-P	257	2.50	9	250	ND	103	80-120			
Sulfate	475	20.0	۳	500	ND	95.0	80-120			
Matrix Spike Dup (1547013-MSD1)	So	urce: P511036-	01	Prepared &	k Analyzed:	18-Nov-15	i			
Nitrate-N	48.1	2.50	mg/L	50.0	ND	96.3	80-120	0.104	20	
Nitrite-N	51.5	2.50		50.0	ND	103	80-120	0.136	20	
Chloride	570	20.0	"	500	77.7	98.6	80-120	0.0473	20	
Fluoride	56.0	2.50		50.0	3.90	104	80-120	0.0715	20	
o-Phosphate-P	257	2.50	**	250	ND	103	80-120	0.0778	20	
Sulfate	475	20.0	*	500	ND	95.0	80-120	0.0211	20	

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Coleman (P.O. Box 3 Farmingto	Dil & Gas 1337 n NM, 87499	Project Name: Project Number: Project Manager:	Good Times 24-10 05206-0001 Mike Hanson	Reported: 25-Nov-15 12:07
		Notes and I	Definitions	
H2	Sample was analyzed after regulatory hold-	time exceeded for target a	nalyte.	
DET	Analyte DETECTED			
ND	Analyte NOT DETECTED at or above the report	ting limit		
NR	Not Reported			
dry	Sample results reported on a dry weight basis			
RPD	Relative Percent Difference			

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Client: ColeMAN OL + 61 Project: 6000 Tumas Za-11	S JUNC	<u></u>	RUSH?	ali <u>s</u>	b Use Only Lab WO#			Ana	ilysis	and N	viethod		2-12-14
Sampler: Mille HANSON			3d	PGI	033					00	13		
Phone: 505- 330- 2903				Jo	b Number,	Q12			8	×.	T		and the second se
Email(s): Mhanson @cog-f;	MN, COA	<u>\</u>	Dog	054	<u>-01 = 001</u>		8021	18.1	ъу М	ప	£		
Project Manager: Mille (+AMSO/V		Sample	Fag	Con	ntainers	Į	Å X P	by 4	ortde	Ŧ.	15		
Sample ID	Sample Date	Time	Matrix	QTY - Vol/T	YPE/Preservati	ive 👸	E	Hat	ð	2	≯		
Coord TIMES 24-10	1/BAS	3:00	1 Hzo	Nor	e_					レ			1
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Relinquished by: (Signature) Date Time	Receive	d by: (Signa	fure)	Date	Time	TILL) sea.	on ic	ет Т2	/sn.		u serie L'est	T3_
						AVGIT	mp 🕯	<u>c</u>	<u>e n</u>				
Sample Matrix: S - Soli, Sd - Solid, Sg - Studge, A - Aqueous, O - Other **Samples requiring thermal preservation must be received on ice the c	av they are sampled	or received a	acked in ice	at an ave temp ab	Container T	/pe:g-gli an 6 °C on s	ubsequ	- poly ent da	//pla: ivs.	stic, a	g - amb	xer glas	s, v -
Sample(s) dropped off after hours to a secure drop off area.		Chain of	f Custody	/ Notes/Billin	ng Info:				<u> </u>				
M ZANVIINTACN						*****							

• • •



Analytical Report

Report Summary

Client: Coleman Oil & Gas Chain Of Custody Number: Samples Received: 11/16/2015 7:05:00AM Job Number: 05206-0001 Work Order: P511032 Project Name/Location: Pinon 01H

Date: 11/25/15

Entire Report Reviewed By:

Tim Cain, Laboratory Manager

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Coleman Oil & Gas	Project Name:	Pinon 01H	
P.O. Box 3337	Project Number:	05206-0001	Reported:
Farmington NM, 87499	Project Manager:	Mike Hanson	25-Nov-15 12:05

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Pinon 01H	P511032-01A	Aqueous	11/13/15	11/16/15	Poly 500mL

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Coleman Oil & Gas P.O. Box 3337 Farmington NM, 87499	Project Project Project	Name: Number: Manager:	Pinon 05206 Mike	01H -0001 Hanson				Reported: 25-Nov-15 12:	05
		Pi P5 110	non 01H	tor)	·				
		F 5110.	52-01 (Wa						
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
рН @20.1°С	7.39		pH Units	1	1547032	11/20/15 14:31	11/20/15 14:35	150.1/4500H	
Electrical Conductivity	42800		umhos/cm	I .	1547032	11/20/15 14:31	11/20/15 14:35	EPA 120,1	
Total Dissolved Solids	29100	10.0	mg/L	1	1547020	11/19/15	· 11/19/15	160.1/2540C	
Sodium Absorption Ratio	178		N/A	1	1548015	11/25/15	11/25/15	[CALC]	
Total Alkalinity as CaCO3	519	10.0	mg/L	.1	1547021	11/19/15	11/20/15	Hach Method	
Total Hardness as CaCO3	657	18.6	mg/L		[CALC]	11/20/15	11/24/15	[CALC]	
Bicarbonate as CaCO3	ND	10. 0	mg/L	1	1 547021	11/19/15	11/20/15	Hach Method	
Carbonate as CaCO3	ND	10.0	mg/L	1	1547021	11/19/15	11/20/15	Hach Method	
Hydroxide as CaCO3	ND	10.0	mg/L	ì	1547021	11/19/15	11/20/15	Hach Method	
Nitrate-N	4.40	0.25	mg/L	1	1547013	11/18/15 09:00	11/18/15 16:02	EPA 300.0	Н2
Nitrite-N	50.5	0.25	mg/L	1	1547013	11/18/15 09:00	11/19/15 18:25	EPA 300.0	H2
Chloride	16300	2.00	mg/L	1	1547013	11/18/15	11/19/15	EPA 300.0	
Fluoride	1.75	0.25	mg/L	1	1547013	11/18/15	11/18/15	EPA 300.0	
o-Phosphate-P	105	0.25	mg/L	1	1547013	11/18/15 09:00	11/19/15 18:25	EPA 300.0	H2
Sulfate	ND	2.00	mg/L	I	1547013	11/18/15	11/18/15	EPA 300.0	
Iron	ND	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Calcium	187	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Magnesium	46.4	1.80	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Potassium	86.4	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Sodium	10500	18.0	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	

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Coleman Oil & Gas	Project Name:	Pinon 01H	
P.O. Box 3337	Project Number:	05206-0001	Reported:
Farmington NM, 87499	Project Manager:	Mike Hanson	25-Nov-15 12:05

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Notes
	ittouit				ittouit	/01420				110165
Batch 1547013 - Anion Extraction EPA 300.0										
Blank (1547013-BLK1)				Prepared &	Analyzed:	18-Nov-15	<u>; </u>			
Nitrate-N	ND	0.25	mg/L				·			
Nitrite-N	ND	0.25								
Chloride	ND	2.00								
Fluoride	ND	0.25	*1							
o-Phosphate-P	ND	0.25	P							
Sulfate	ND	2.00								
LCS (1547013-BS1)				Prepared &	k Analyzed:	18-Nov-15	5			
Nitrate-N	4.76	0.25	mg/L	5.00		95.2	90-110			
Nitrite-N	5.13	0.25		5.00		103	90-110			
Chloride	48.6	2.00	•	50.0		97.1	90-110			
Fluoride	5.13	0.25	•	5.00		103	90-110			
o-Phosphatc-P	25.6	0.25	۳	25.0		102	90-110			
Sulfate	47.2	2.00	H	50.0		94.5	90- 110			
Matrix Spike (1547013-MS1)	Sou	ırce: P511036-	01	Prepared &	& Analyzed:	: 18-Nov-1	5			
Nitratc-N	48.2	2.50	mg/L	50.0	ND	96.4	80-120			
Nitrite-N	51.4	2.50	н	50.0	ND	103	80-120			
Chloride	571	20.0	н	500	77.7	98.6	80-120			
Fluoride	56.0	2.50		50.0	3.90	104	80-120			
o-Phosphate-P	257	2.50		250	ND	103	80-120			
Sulfate	475	20.0	н	500	ND	95.0	80-120			
Matrix Spike Dup (1547013-MSD1)	So	urce: P511036-	01	Prepared a	& Analyzed	: 18-Nov-1	5			
Nitratc-N	48.1	2.50	mg/L	50.0	ND	96.3	80-120	0.104	20	
Nitrite-N	51.5	2.50		50.0	ND	103	80-120	0.136	20	
Chloride	570	20.0		500	77.7	98.6	80-120	0.0473	20	
Fluoride	56.0	2.50		50.0	3.90	104	80-120	0.0715	20	
o-Phosphate-P	257	2.50	н	250	ND	103	80-120	0.0778	20	
Sulfate	475	20.0	*	500	ND	95.0	80-120	0.0211	20	

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Coleman Oil & Gas	Project Name:	Pinon 01H	
P.O. Box 3337	Project Number:	05206-0001	Reported:
Farmington NM, 87499	Project Manager:	Mike Hanson	25-Nov-15 12:05

Notes and Definitions

H2 Sample was analyzed after regulatory hold-time exceeded for target analyte.

DET Analyte DETECTED

- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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Client: Coleman 0146K	5 In	<u>د</u>	RUSH?		b Use Only	装		Ana	liysis a	nd M	ethod		lab (λ¥.
Project: PINON 014 Sampler: MILLE HANSON Phone: 505-230-2903			1d 3d	p 5 1	ab WO# 032 b Number	35			0	11110	1241		hjer	N/X(S)/YR
Email(s): Mhanson C Cog-fm Project Manager: M. In Langen	NICOM		Page	052	06-0001	0 by 8	8021	1.8.1	by 300	JOLE			ab Nun	Coff
Sample ID	Sample Date	Sample Time	Matrix	Col QTY - Vol/T	ntainers YPE/Preservative	SRO/DR	STEX by	PH by	Chloride	5	<u>107</u>			Correct
PINDA DIH	11/13/15	3:30	Hz0	N	<i>N</i>	Ť				Ţ	┓			Ŷ
		PM					Γ			Τ				
						Τ	Γ		Π					
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Reipodistrictor (Signature) 11/13/2015 Si 301 k	A Lalen	d by: (Signa	nure) Kr.	Date -16-15	Time 7:05	*Reco	lved	onia	i Lat :eY/) Use N	Only	2. 10.70.25 7.2.71 7.2.71		
Relinquarieti by: (Signature) Date Time	`Receive	d bý: (Signa	ăture)	Date	Time 7	1 <u>5-</u> VG Te	2. emp	°c	72			ं : T	3 <u>-0</u> -1	
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other					Container Type	: g - g la	iss, p	- poly	//plast	lic, ag	- ambe	r glass,	v - VOA	
**Samples requiring thermal preservation must be received on ice the day Sample(s) dropped off after hours to a secure drop off area.	they are sampled (chain o	acked in ice of Custody	at an avg temp ab Notes/60b	ove 0 but less than (ng info:	5°Cons	ubseq:	uent da	iys.					
envirotech Analylical Laboratory	S220US Third Sp	hiphway 64, Fam dogs - 65 Mercad	ungton, NVI 8740 I: Street, Suite 115	Duimys (C \$1301	Pb (505) 6 Pb (516) 2	32-0615 31 34-0615 (i	r (5054 6) I çıradı, 10	12-1065 22-1575					Page 6	nc taits

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Analytical Report

Report Summary

Client: Coleman Oil & Gas Chain Of Custody Number: Samples Received: 11/16/2015 7:05:00AM Job Number: 05206-0001 Work Order: P511031 Project Name/Location: Pinon 02H

Date: 11/25/15

Entire Report Reviewed By:

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

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Coleman Oil & Gas	Project Name:	Pinon 02H	
P.O. Box 3337	Project Number:	05206-0001	Reported:
Farmington NM, 87499	Project Manager:	Mike Hanson	25-Nov-15 12:04

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Pinon 2H	P511031-01A	Aqueous	11/13/15	11/16/15	Poly 500mL

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Coleman Oil & Gas P.O. Box 3337 Farmington NM, 87499	Projec Projec Projec	t Name: t Number: t Manager:	Pinon 05206 Mike	02H -0001 Hanson				Reported: 25-Nov-15 12	:04
		P	inon 2H	4)					
[P5110.	51-01 (Wa	ter)	···· ·				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
рН @20.4°С	7.08		pH Units	1	1547032	11/20/15 14:31	11/20/15 14:35	150.1/4500H	
Electrical Conductivity	43000		umhos/cm	1	1547032	11/20/15 14:31	11/20/15 14:35	EPA 120.1	
Total Dissolved Solids	28800	10.0	mg/L	1	1547020	11/19/15	11/19/15	160.1/2540C	
Sodium Absorption Ratio	164		N/A	1	1548015	11/25/15	11/25/15	[CALC]	
Total Alkalinity as CaCO3	950	10.0	mg/L	1	1547021	11/19/15	11/20/15	Hach Method 8203	÷
Total Hardness as CaCO3	765	18.6	mg/L		[CALC]	11/20/15	11/24/15	[CALC]	
Bicarbonate as CaCO3	ND	10.0	mg/L	1	1547021	11/19/15	11/20/15	Hach Method	
Carbonate as CaCO3	ND	10.0	mg/L	1	1547021	11/19/15	11/20/15	Hach Method	
Hydroxide as CaCO3	ND	10.0	mg/L	1	1547021	11/19/15	11/20/15	Hach Method	
Nitratc-N	5.32	0.25	mg/L	1	1547013	11/18/15 09:00	11/18/15 14:35	EPA 300.0	H2
Nitrite-N	3.04	0.25	mg/L	1	1547013	11/18/15 09:00	11/18/15 14:35	EPA 300.0	H2
Chloride	15400	2.00	mg/L	1	1547013	11/18/15	11/19/15	EPA 300.0	
Fluoride	ND	0.25	mg/L	1	1547013	11/18/15	11/18/15	EPA 300.0	
o-Phosphate-P	6.77	0.25	mg/L	1	1547013	11/18/15 09:00	11/18/15 14:35	EPA 300.0	Н2
Sulfate	ND	2.00	mg/L	1	1547013	11/18/15	11/18/15	EPA 300.0	
Iron	23.1	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Calcium	226	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Magnesium	48.5	1.80	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Potassium	88.6	4.50	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	
Sodium	10400	18.0	mg/L	9	1547033	11/20/15	11/24/15	EPA 6010C	

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Coleman Oil & Gas P.O. Box 3337	Pro	oject Name: oject Number:	Pi 05	inon 02H 5206-0001		-			Report	ed:
Parmington NM, 87499		oject Manager:		like Hanson					25-Nov-15	12:04
	Ca	tion/Anion A	nalysis	- Quality (Control					c.
	E	nvirotech A	nalyti	cal Labora	atory					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1547013 - Anion Extraction EPA 300.0										
Blank (1547013-BLK1)				Prepared &	Analyzed:	18-Nov-15				
Nitrate-N	ND	0.25	mg/L							
Nitrite-N	ND	0.25	"							
Chloride	ND	2.00								
Fluoride	ND	0.25								
o-Phosphate-P	ND	0.25								
Sulfate	ND	2.00	-							
LCS (1547013-BS1)				Prepared &	Analyzed:	18-Nov-15				
Nitrate-N	4.76	0.25	mg/L	5.00		95.2	90-110			
Nitrite-N	5.13	0.25	•	5.00		103	90-110			
Chloride	48.6	2.00		50.0		97.1	90-1 10			
Fluoride	5.13	0.25	D	5.00		103	9 0-110			
o-Phosphate-P	25.6	0.25	11	25.0		102	90-110			
Sulfate	47.2	2.00		50.0		94.5	90-110			
Matrix Spike (1547013-MS1)	So	urce: P511036-0	D1	Prepared &	Analyzed	: 18-Nov-15				
Nitrate-N	48.2	2.50	mg/L	50.0	ND	96.4	80-120			
Nitrite-N	51.4	2.50	n	50.0	ND	103	80-120			,
Chloride	571	20.0	п	500	77.7	98.6	80-120			
Fluoride	56.0	2.50	n	50.0	3.90	104	80-120			
o-Phosphate-P	257	2.50		250	ND	103	80-120			
Sulfate	475	20.0	"	500	ND	95.0	80-120			
Matrix Spike Dup (1547013-MSD1)	So	urce: P511036-	01	Prepared &	Analyzed:	: 18-Nov-15	;			
Nitrate-N	48.1	2.50	mg/L	50.0	ND	96.3	80-120	0.104	20	
Nitrite-N	51.5	2.50	н	50.0	ND	103	80-120	0.136	20	
Chloride	570	20.0		500	77.7	98.6	80-120	0.0473	20	
Fluoride	56.0	2.50	•	50.0	3.90	104	80-120	0.0715	20	
o-Phosphate-P	257	2.50	. *	250	ND	103	80-120	0.0778	20	
Sulfate	475	20.0		500	ND	95.0	80-120	0.0211	20	

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Coleman P.O. Boy Farming	a Oil & Gas x 3337 ton NM, 87499	Project Name: Project Number: Project Manager:	Pinon 02H 05206-0001 Mike Hanson	Reported: 25-Nov-15 12:04
L		Notes and 1	Definitions	
H2	Sample was analyzed after regul	latory hold-time exceeded for target a	analyte.	× .
DET	Analyte DETECTED			
ND	Analyte NOT DETECTED at or abo	ove the reporting limit		
NR	Not Reported			
dry	Sample results reported on a dry we	ight basis		
RPD	Relative Percent Difference			

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hone: <u>505-330-2903</u> mail(s): <u>MhQNSON @C09-f</u> roject Manager: <u>Mika HANSO</u>	mN Cor		Page	05	b Number 206 - 001		/0KO by 801 (by 8021	by 418.1	ride by 300.0	1100-	10/00~		Lab, Numb
Sample ID	Sample Date	Simple Time	Matrix	QTY - Vol/T	YPE/Preservat	tive (Ē	ġ	1	13		
finon 2H	1/13/2015	3:30	HZO		No					2)			
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All						Long Service			-				
Retardushed by (Signature) 1900 -	Ro AM Lal	a by: (Signat	are) XXN	11-14-15	7:05	_**Re	ceivec	l on I	Ce Y	ib Usi / N	e Only		
Relinqui(h)alby: (Signature) Date Ti	ne Rečelve	d by: (Signal	(d . (é)	Date	Time	T1 S	<u>.K</u> Temp	°C ×	ार: ऽ.४			T 3	
iample Matrix: S - Soli, Sd - Solid, Sg - Sludge, A - Aqueous, O - Othe	' <u></u>				Container T	ype: g -	glass, p	- pol	y/pla	stic, a	g - amb	er glass, v	- VOA
**Samples requiring thermal preservation must be received on ice to Sample(s) dropped off after hours to a secure drop off area.	ie day they are sampled	Chain of	Custody	Notes/Billin	ove o our iess c ng info:		subseq	uent a	ays. 			<u></u>	
Benvirotech													
Analytical Laboratory	5776 Vi Baree Sp	Fightings - 65 bergade	Spreet, Suite LES,	Denango (C-8120)	Par Par	5(5) 633-0615 570) 359-0615	Fz (505) 1 f1 (400); J	32-1865 1375		<u> </u>		155 - 100 - 100	in tates.