Revised March 23, 2017

MM 5/25/2018

RECEIVED:	REVIEWER:	TYPE:	APP NO:
MM 5/18/2018	MH	SWD	pMAM1814237378

ABOVE THIS TABLE FOR OCD DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Geological & Engineering Bureau –
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Applicant: Mack Energy Corporation **OGRID Number:** 013837
Well Name: Frogwater SWD 1 **API:** 30-025-35554
Pool: SWD;Devonian & SWD;Fusselman **Pool Code:** 96101 96104 97869

SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED BELOW

1) **TYPE OF APPLICATION:** Check those which apply for [A]
A. Location – Spacing Unit – Simultaneous Dedication
☐ NSL ☐ NSP (PROJECT AREA) ☐ NSP (PRORATION UNIT) ☐ SD

B. Check one only for [I] or [II]
[I] Commingling – Storage – Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM
[II] Injection – Disposal – Pressure Increase – Enhanced Oil Recovery
☐ WFX ☐ PMX ■ SWD ☐ IPI ☐ EOR ☐ PPR

FOR OCD ONLY
☐ Notice Complete
☐ Application Content Complete

2) **NOTIFICATION REQUIRED TO:** Check those which apply.
A. ■ Offset operators or lease holders
B. ☐ Royalty, overriding royalty owners, revenue owners
C. ■ Application requires published notice
D. ■ Notification and/or concurrent approval by SLO
E. ■ Notification and/or concurrent approval by BLM
F. ■ Surface owner
G. ■ For all of the above, proof of notification or publication is attached, and/or,
H. ☐ No notice required

3) **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

5.14.18
Date

Deana Weaver
Print or Type Name

575-748-1288
Phone Number

Deana Weaver
Signature

dweaver@mec.com
e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance __X__ Disposal _____ Storage
Application qualifies for administrative approval? __X__ Yes _____ No

II. OPERATOR: Mack Energy Corporation

ADDRESS: P.O. Box 960 Artesia, NM 88211-0960

CONTACT PARTY: Deana Weaver PHONE: 575-748-1288

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____ Yes __X__ No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Deana Weaver TITLE: Production Clerk

SIGNATURE: Deana Weaver DATE: 5.14.13

E-MAIL ADDRESS: dweaver@mec.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Side 1

INJECTION WELL DATA SHEET

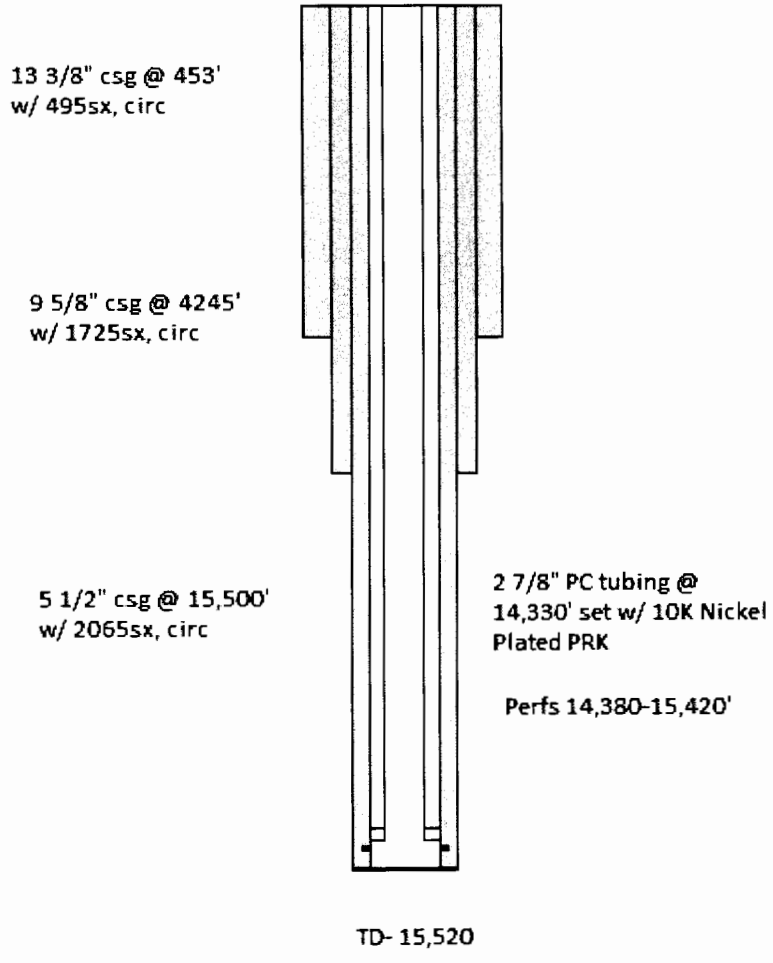
OPERATOR: **Mack Energy Corporation**

WELL NAME & NUMBER: **Frogwater SWD #1**

WELL LOCATION:	**1980 FNL & 1984 FWL**	**F**	**8**	**16S**	**33E**
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC

After



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: **17 1/2** Casing Size: **13 3/8" (Existing)**

Cemented with: **495sx** sx. or _____ ft

Top of Cement: **Surface** Method Determined: **Circulated**

Intermediate Casing

Hole Size: **12 1/4** Casing Size: **9 5/8" (Existing)**

Cemented with: **1254sx** sx. or _____ ft

Top of Cement: **Surface** Method Determined: **Circulated**

Production Casing

Hole Size: **8 3/4** Casing Size: **5 1/2**

Cemented with: **2065sx** sx. or _____ ft

Top of Cement: **Surface** Method Determined: **Circulated**

Total Depth: **15,520**

Injection Interval

14,380 feet to **15,420**

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: **2 7/8"** Lining Material: **Plastic Coated**

Type of Packer: **Halliburton Trump Packer**

Packer Setting Depth: **14,330'**

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? [ ] Yes [X] No

   If no, for what purpose was the well originally drilled? **Gas Well (Dry Hole)**

2. Name of the Injection Formation: **Devonian & Fusselman**

3. Name of Field or Pool (if applicable): _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. **No**

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: **Overlying-Woodford 14,290' , Underlying- Montoya 15,420'**

VII. DATA SHEET: PROPOSED OPERATIONS

1. Proposed average and maximum daily rate and volume of fluids to be injected;
Respectively, 2000 BWPD and 4000 BWPD
2. The system is closed or open;
Closed
3. Proposed average and maximum injection pressure;
0-2,876#
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than re-injected produced water;
We will be re-injecting produced water
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water;
N/A

VIII. GEOLOGICAL DATA

1. Lithologic Detail; **Dolomite**
2. Geological Name; **Devonian & Fusselman**
3. Thickness; **1040'**
4. Depth; **14380-15420'**

IX. PROPOSED STIMULATION PROGRAM

1. To be treated with 10000 gallons 15% acid

X. LOGS AND TEST DATA

1. Well data will be filed with the OCD.

XI. ANALYSIS OF FRESHWATER WELLS

Additional Information
Waters Injected: Wolfcamp, Cisco, Canyon

XII. AFFIRMATIVE STATEMENT

RE: Frogwater SWD #1

We have examined the available geologic and engineering data and find no evidence of open faults or any other hydraulic connection between the disposal zone and any underground source of drinking water.

Mack Energy Corporation

Date: 5/14/18

Charles Sadler, Geologist

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
	96101 & 96104	SWD; Devonian & SWD; Fusselman

[4] Property Code	[5] Property Name	[6] Well Number
	FROGWATER SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
13837	MACK ENERGY CORPORATION	4258.2

[10] Surface Location

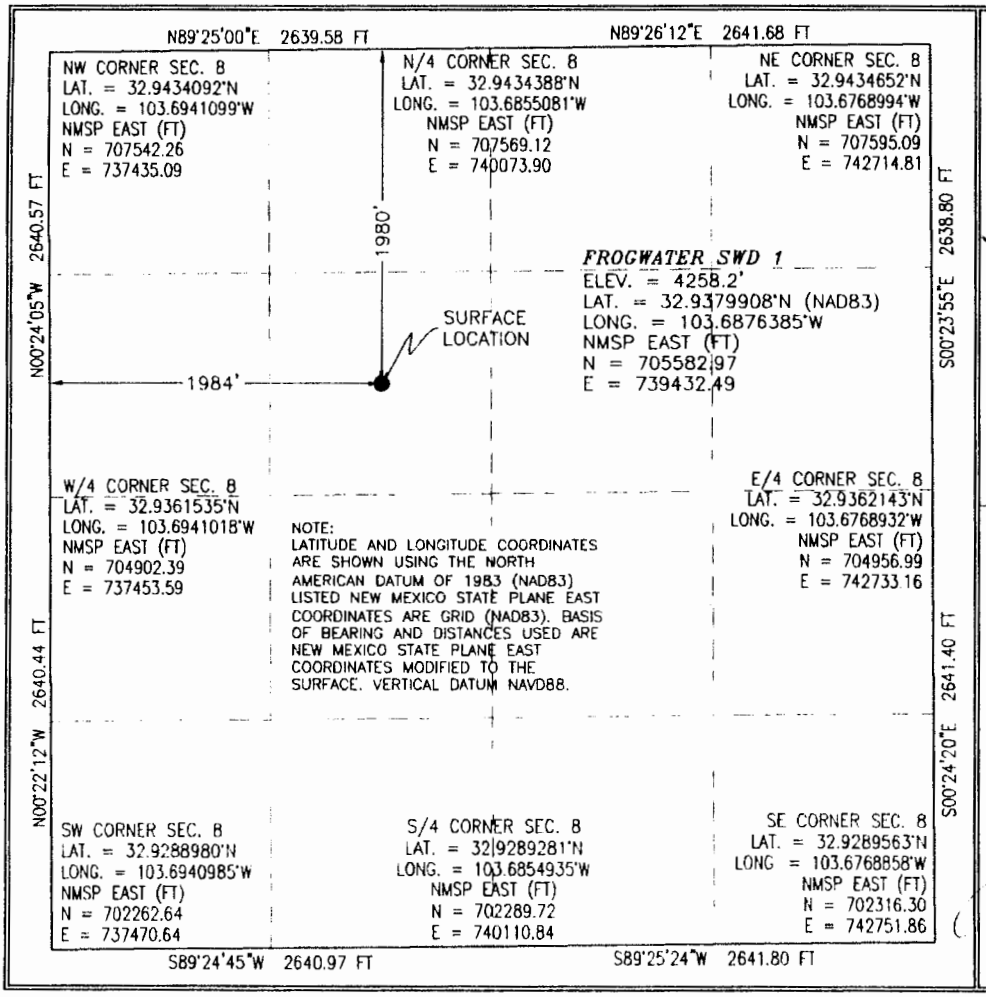
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	8	16 S	33 E		1980	NORTH	1984	WEST	LEA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/ West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
40			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Deana Weaver 5.10.18
Signature Date

Deana Weaver
Printed Name

dweaver@mec.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

APRIL 25, 2018
Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 6175

AREA OF REVIEW WELL DATA

LEASE/API	WELL#	LOCATION	TD (PBTD)	TYPE & DATE DRILLED	HOLE SIZE	CASING SIZE & WEIGHT	SETTING DEPTH	SX CMT	TOC	PERFS
		1980 FNL			17 1/2	13 3/8, 45	453	495	Circ	
Frogwater		1984 FWL			12 1/4	9 5/8, 40	4245	1254	Circ	
SWD	1	8-16S-33E	15,520'	SWD	8 3/4	5 1/2, 20	15,500	2065	Circ	14,380-15,420
									Circ	
		1980 FNL			17 1/2	13 3/8, 48	450	400	Circ	10,646-10,654
Chevron State		660 FWL		Oil Well 11/19/86	11	8 5/8, 32	4459	1750	TOC@	11,072-11,083
30-025-29764	1	8-16S-33E	11,500'	P&A 6/09/91	7 7/8	5 1/2, 20	11500	700	8720	11,107-11,150
									Circ	
					17 1/4	13 3/8, 54.5	415	450	Circ	
Edison Ranch		2080 FSL			11	8 5/8, 32	4472	1950	TOC @	
AQB State		660 FEL		Gas Well 1/14/03	7 7/8	5 1/2, 17 &20	2800-13650	1400	4,620	13,224-13,232
30-025-31272	2	5-16S-33E	13,660	P&A 5/15/06	7 7/8	5 1/2, 17	tie in@2800	450	Circ	13,239-13,248
		1930 FSL			17 1/2	13 3/8, 48	450	400		
Barr H State		890 FEL		Oil Well 3/4/87	11	8 5/8, 32	4425	1700	Circ	
30-025-29825	1	7-16S-33E	11,360	P&A 4/7/08	7 7/8	5 1/2, 20	11360	600	Circ	11,224-11,266
Eidson Ranch		1980 FSL								
Unit		1650 FEL		Dry Hole	14 3/4	9 5/8, 36	1470	1100		
30-025-31673	4	5-16S-33E	5,700	P&A 8/18/94	8 3/4	7, 26	5700	235	circ	5,698-5,703
Eidson Ranch		2310 FSL								
Unit		2310 FWL			14 3/4					
30-025-31578	2	5-16S-33E	6,000	Dry Hole 5/6/92	8 3/4	9 5/8, 36	1490	1425	Circ	
		3300 FSL							Circ	
Juandell ALG		660 FEL			12 1/4	9 5/8, 36	1475	1100	TOC @	Open Hole
30-025-31616	1	5-16S-33E	5,721'	Oil Well 8/4/92	8 3/4	7, 26	5677	70	5,160	5,677-5,721

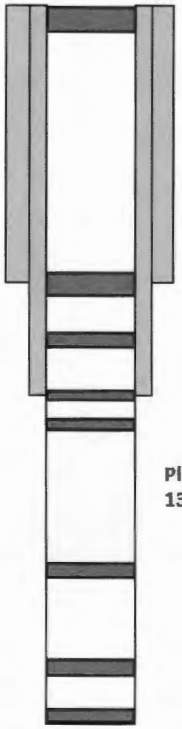
Eidson Ranch Unit 30-025-31910	6	2310 FSL 990 FEL 5-16S-33E	5,719'	Oil Well 4/4/93	14 3/4 8 3/4	9 5/8, 36 7, 23-26	1454 5679	1100 450	Circ Circ	Open Hole 5679-5719

Before

Frogwater SWD #1
Sec. 8 T16S R33E
1980 FNL 1984 FWl

13 3/8" csg @ 453'
w/ 495sx, circ

9 5/8" csg @ 4245'
w/ 1725sx, circ



10sx cmt to surface
35sx cmt 403-603'
35sx cmt 1500-1600'
50sx cmt 4195-4295'
40sx cmt 7100-7200'

Plug @ 9200-9300', 11,550-11,650',
13,550-13,650

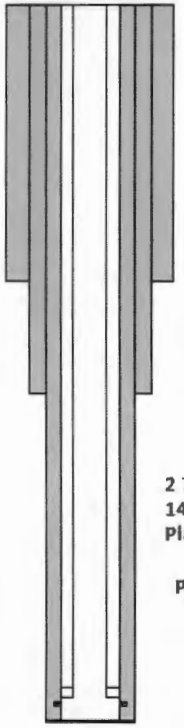
Formation Tops
San Andres: 4378
Glorieta: 5885
Paddock: 6461
Tubb: 7077
Abo: 7749
Wolfcamp: 9949
Penn: 10995
Canyon: 11737
Strawn: 12246
Atoka: 12433
Miss: 13561

TD- 13,650'
PBTD- Surface

After

13 3/8" csg @ 453'
w/ 495sx, circ

9 5/8" csg @ 4245'
w/ 1725sx, circ



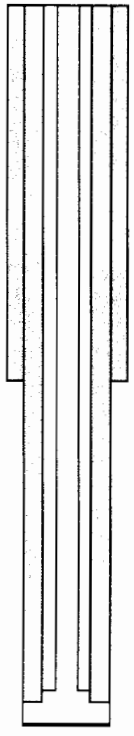
5 1/2" csg @ 15,500'
w/ 2065sx, circ

2 7/8" PC tubing @
14,330' set w/ 10K Nickel
Plated PRK

Perfs 14,380-15,420'

TD- 15,520

Juandell ALG #1
Sec. 5 T16S R33E
3300 FSL 660 FEL
30-025-31616
Oil Well 8/4/1992



9 5/8" csg @ 1490'
w/ 1425sx, circ

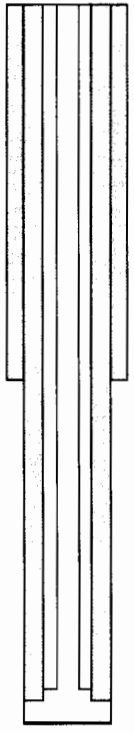
7" csg @ 5677'
w/ 70sx cmt

2 7/8" tbg @ 5659'

Open Hole @ 5677-5721'

TD- 5721'
PBTD- 5721'

Eidson Ranch Unit #6
Sec. 5 T16S R33E
2310 FSL 990 FEL
30-025-31910
Oil Well 4/4/1993



9 5/8" csg @ 1454'
w/ 1100sx, circ

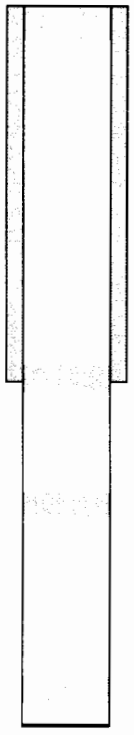
7"csg @ 5679'
w/ 450sx

2 7/8" tbg @ 5626'

Open Hole @ 5679-5719'

TD- 5719'
PBTD- 5719'

Eidson Ranch Unit #2
Sec. 5 T16S R33E
2310 FSL 2310 FWL
30-025-31578
Dry Hole - P&A 5/8/1992



10sx cmt 60' - Surface

9 5/8" csg @ 1490'
w/ 1425sx, circ

45sx cmt 1440-1540'

45sx cmt 2486-2586'

30sx cmt 4238-4338'

TD- 6000'
PBTD- Surface

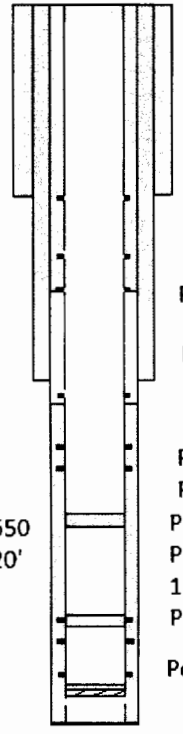
Eidson Ranch AQB State #2
Sec. 5 T16S R33E
2080 FSL 660 FEL
30-025-31272
P&A 5/16/2006

13 3/8" csg @ 415
w/ 450sx cmt, circ

5 1/2" csg tie in @ 2800
w/ 450sx cmt, circ

8 5/8" csg @ 4472
w/ 1950sx cmt, circ

5 1/2" csg @ 2800-13650
w/ 1400sx, TOC @ 4620'



Squeezed 20sx 60' to Surface

Perf @ 465' squeezed w/ 30 sx

Perf @ 1470' squeezed w/
45sx

Perf @ 2800' squeezed w/ 25sx

Perf @ 4522' squeezed w/ 25sx

Spotted 25sx @ 7258-7498'

Spotted 24sx @ 10460-10700'

Perfs @ 5714-5725' squeezed

Perfs @ 5899-5910' squeezed

Perfs @ 10707-30 & 10771-81' Squeezed

Perfs @ 11040-43, 11079-83, 11096-11100
11106-11108' Squeezed

Perfs @ 11761-91' Squeezed

Perfs @ 13224-32 & 13239-48'

CIBP @ 13125'
w/ 50' cmt top

TD- 13,660'
PBTD- Surface

Chevron State #1
Sec. 8 T16S R33E
1980 FNL 660 FWL
30-025-29764
P&A 6/09/1991

13 3/8" csg @ 450'
w/ 400sx cmt, circ

20sx cmt plug to Surface

40sx cmt plug @ 1,525'

8 5/8" csg @ 4,459'
w/ 1,750sx cmt, circ

40sx cmt plug @ 4,456'

Pulled 5 1/2" csg @ 4,840'

40sx cmt plug @ 4,840'

25sx cmt plug @ 7,500'

5 1/2" csg @ 11,500'
w/ 700sx cmt,
TOC @ 8,720'

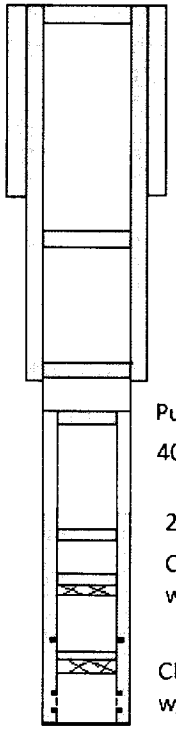
CIBP @ 10,570'
w/ 40sx cmt top

Perfs @ 10,646-10,654'

CIBP @ 10,775'
w/ 40' cmt top

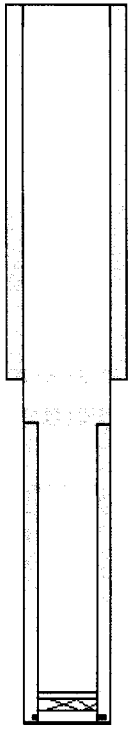
Perfs @ 11,072-11,088'

Perfs @ 11,107-11,150'



TD- 11,500'
PBTD- Surface

Eidson Ranch Unit #4
Sec. 5 T16S R33E
1980 FSL 1650 FEL
30-025-31673
P&A 8/18/1994



10sx cmt 40' to Surface

9 5/8" csg @ 1470'
w/ 1100sx, circ

50sx cmt 1366-1520'

40sx cmt 2726-2826'

Cut 7" csg @ 2800'

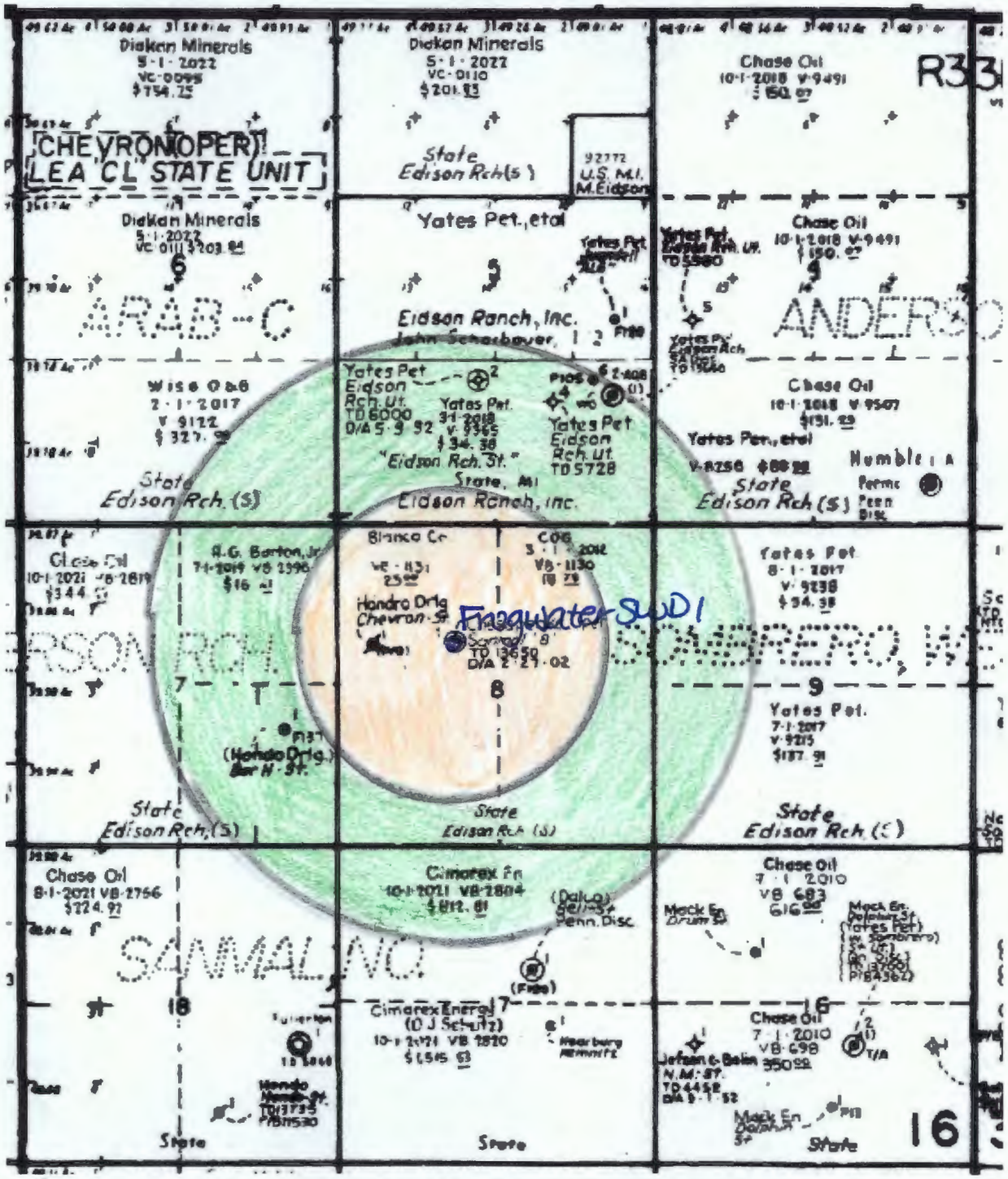
7" csg @ 5,700'
w/ 235sx,circ

35sx cmt 3450-3550'

CIBP @ 5600' w/ 35' cmt top

Perf 5698-5703'

TD-5,700'
PBTD- Surface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[LEA CL STATE UNIT]
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VC-0095
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Diekan Minerals
5-1-2022
VC-0110
$201.93
State
Edison Rch(S)
92272
U.S. M.I.
M. Eidson
Chase Oil
10-1-2018 V-9491
$150.07
R33
Diekan Minerals
5-1-2022
VC-0111 $203.84
6
ARAB-C
Yates Pet., etal
Eidson Ranch, Inc.
John Schaubeyer
Chase Oil
10-1-2018 V-9491
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Yates Pet
Eidson Rch. Un.
TD 5580
5
ANDERSO
Yates Pet
Eidson Rch
SA Penn
TD 9580
Chase Oil
10-1-2018 V-9507
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Wise O&G
2-1-2017
V-9122
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Yates Pet
Eidson
Rch. Ut.
TD 6000
D/A 5-9-92
Yates Pet.
31-2018
V-9365
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Yates Pet
Eidson
Rch. Ut.
TD 5728
Eidson Ranch, Inc.
Yates Pen., etal
V-8256 $8828
Humble
Penn
Disc
State
Edison Rch (S)
Chase Oil
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R.G. Barton, Jr.
7-1-2019 VB 1396
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Blanco Co
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25.00
COG
3-1-2012
VB-1130
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Hondo Drlg
Chevron St
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D/A 2-27-02
Freshwater Study
Yates Pet
8-1-2017
V-9238
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Yates Pet.
7-1-2017
V-9215
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State
Edison Rch (S)
Chase Oil
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10-1-2021 VB-2804
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Penn. Disc.
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VB 683
SAMAL NO
Mack En
Drum St
Mack En.
Delaware St
(Yates Pet)
(Frio)
18
17
16
Cimarex Energy
(D.J. Schultz)
10-1-2021 VB 2820
$1545.63
Chase Oil
7-1-2010
VB-698
Jefson & Bain
N.M. St.
TD 4458
D/A 9-1-52
Mack En
Delaware
St
State
State
State
16

Frogwater SWD #1

Offset Operators:

- SW/4 Sec. 14, T16S-R33E
  Chase Oil Corporation
  P. O. Box 1767
  Artesia, NM 88211-1767

- S/2 Sec. 5, T16S-R33E
  Unleased State Lands

- SE/4 Sec. 6, T16S-R33E
  Chase Oil Corporation
  P. O. Box 1767
  Artesia, NM 88211-1767

- E/2 Sec. 7, T16S-R33E
  Chase Oil Corporation
  P. O. Box 1767
  Artesia, NM 88211-1767

- All Sec. 8, T16S-R33E
  Unleased State Lands

- N/2 Sec. 16, T16S-R33E
  Chase Oil Corporation
  P. O. Box 1767
  Artesia, NM 88211-1767

- N/2 Sec. 17, T16S-R33E
  Cimarex Energy Co.
  202 South Cheyenne Avenue, Suite 1000
  Tulsa, OK 74103-3001

- E/2 Sec. 18, T16S-R33E
  Chase Oil Corporation
  P. O. Box 1767
  Artesia, NM 88211-1767

Surface Owner:

- Fee Surface – Eidson Ranch, Inc.

Catalyst Oilfield Services
11999 E Hwy 158
Gardendale, TX 79758
(432) 563-0727
Fax: (432) 224-1038

Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	60511
Area:	Artesia	Analysis ID #:	58354
Lease:	Frogwater		
Location:	FW1 0		
Sample Point:	Water Tank		

Sampling Date:	4/5/2018
Analysis Date:	4/11/2018
Analyst:	Catalyst
TDS (mg/l or g/m3):	316.6
Density (g/cm3):	1.003
Hydrogen Sulfide:	0
Carbon Dioxide:	0
Comments:	

Anions	mg/l	meq/l
Chloride:	**90.8**	**2.56**
Bicarbonate:	**131.8**	**2.16**
Carbonate:		
Sulfate:	**0.0**	**0.**
Borate*:	**0.7**	**0.**
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

Cations	mg/l	meq/l
Sodium:	**40.4**	**1.76**
Magnesium:	**14.3**	**1.18**
Calcium:	**33.2**	**1.66**
Potassium:	**4.9**	**0.12**
Strontium:	**0.4**	**0.01**
Barium:	**0.1**	**0.**
Iron:	**0.0**	**0.**
Manganese:	**0.022**	**0.**

pH at time of sampling:	7
pH at time of analysis:	
pH used in Calculation:	**7**
Temperature @ lab conditions (F):	**75**
Conductivity (micro-mhos/cm):	**544**
Resistivity (ohm meter):	**18.3824**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	-0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	-0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	-0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	-0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	-0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.04	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200	0.23	3.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	0.43	7.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Catalyst Oilfield Services
11999 E Hwy 158
Gardendale, TX 79758
(432) 563-0727
Fax: (432) 224-1038

Water Analysis Report

Customer:	Mack Energy Corporation	Sample #:	60512
Area:	Artesia	Analysis ID #:	58355
Lease:	Frogwater		
Location:	FW2 0		
Sample Point:	Water Tank		

Sampling Date:	4/5/2018
Analysis Date:	4/11/2018
Analyst:	Catalyst
TDS (mg/l or g/m3):	217.1
Density (g/cm3):	1.003
Hydrogen Sulfide:	0
Carbon Dioxide:	0
Comments:	

Anions	mg/l	meq/l
Chloride:	**66.6**	**1.88**
Bicarbonate:	**87.8**	**1.44**
Carbonate:		
Sulfate:	**0.0**	**0.**
Borate*:	**0.5**	**0.**
Phosphate*		

***Calculated based on measured elemental boron and phosphorus.**

Cations	mg/l	meq/l
Sodium:	**31.8**	**1.38**
Magnesium:	**13.8**	**1.14**
Calcium:	**15.6**	**0.78**
Potassium:	**0.7**	**0.02**
Strontium:	**0.3**	**0.01**
Barium:	**0.0**	**0.**
Iron:	**0.0**	**0.**
Manganese:	**0.002**	**0.**

pH at time of sampling:	7
pH at time of analysis:	
pH used in Calculation:	**7**
Temperature @ lab conditions (F):	**75**
Conductivity (micro-mhos/cm):	**366**
Resistivity (ohm meter):	**27.3224**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	-1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	-1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	-0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	-0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	-0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	-0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200	-0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

P.O. BOX 98
MIDLAND, TX. 79702
PHONE (432) 683-4521

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
FAX (432) 682-8819

RESULT OF WATER ANALYSES

LABORATORY NO. 608-64
SAMPLE RECEIVED 6-6-08
RESULTS REPORTED 6-11-08

TO: Mr. Tim Morris
500 W. Texas, Suite 940, Midland, TX 79701

COMPANY Rex Energy LEASE Union State #2
FIELD OR POOL Kemnitz
SECTION ____ BLOCK ____ SURVEY ____ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Submitted water sample - taken from wellhead on 6-5-08.
NO. 2
NO. 3
NO. 4

REMARKS: Wolfcamp

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1295			
pH When Sampled				
pH When Received	6.50			
Bicarbonate as HCO_3	476			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	8,600			
Calcium as Ca	2,160			
Magnesium as Mg	778			
Sodium and/or Potassium	80,277			
Sulfate as SO_4	4,355			
Chloride as Cl	126,380			
Iron as Fe	178			
Barium as Ba	0			
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	214,426			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.056			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: This water shows salt levels substantially higher than that of our Wolfcamp records in the Kemnitz field.

Form No. 3

By Greg Ogden, B.S.

LATHAM PRINTING CO. · 333-1292

Catalyst Oilfield Services
11999 E Hwy 158
Gardendale, TX 79758
(432) 563-0727
Fax: (432) 224-1038

Water Analysis Report

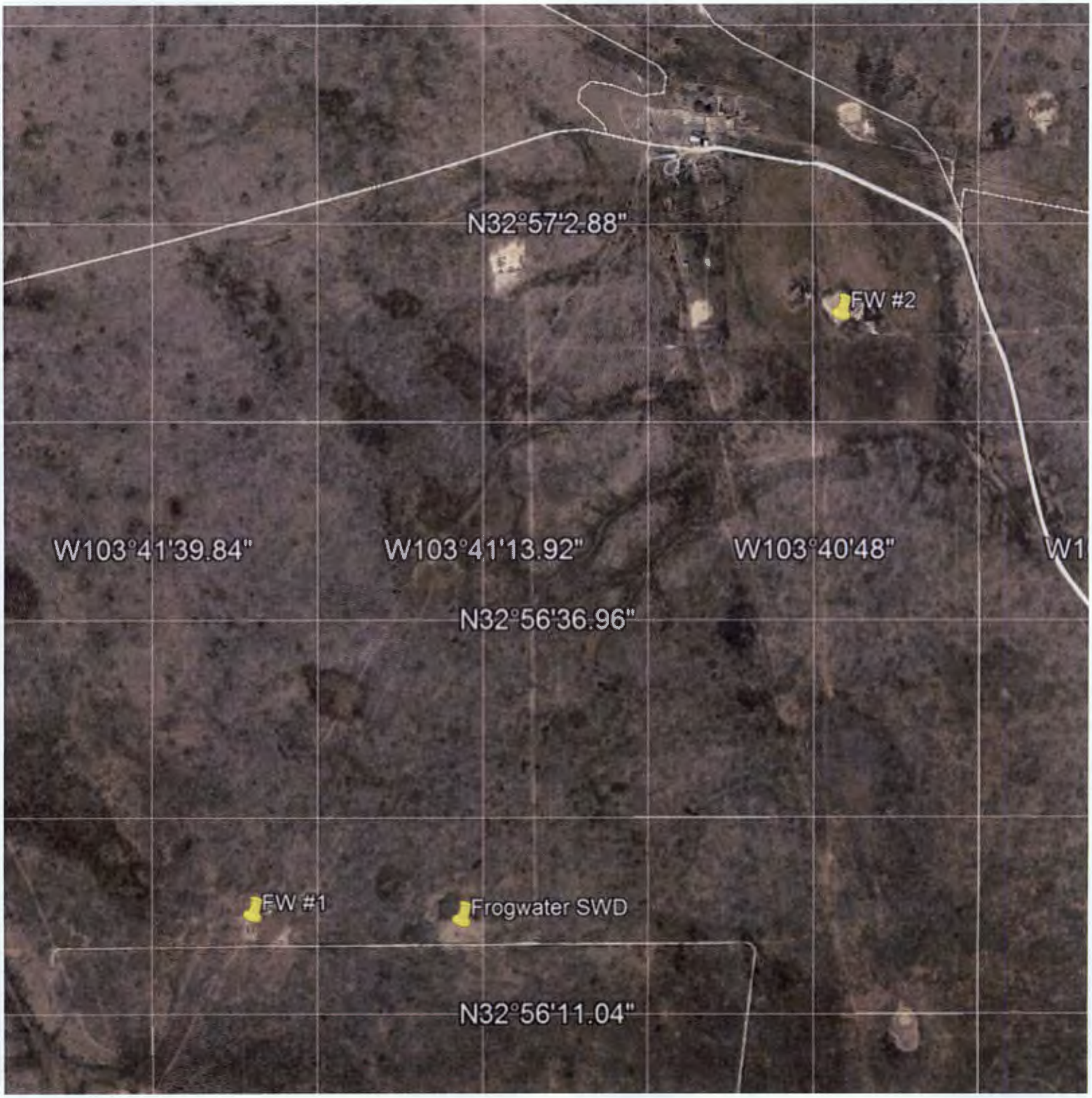
Customer:	Mack Energy Corporation	Sample #:	2702
Area:	Artesia	Analysis ID #:	4942
Lease:	Romo		
Location:	#1 SWD 0		
Sample Point:	Water Tank		

		Anions	mg/l	meq/l	Cations	mg/l	meq/l
Sampling Date:	9/23/2010	**Chloride:**	**68948.0**	**1944.77**	**Sodium:**	**36350.0**	**1581.14**
Analysis Date:	9/28/2010	**Bicarbonate:**	**263.5**	**4.32**	**Magnesium:**	**1777.0**	**146.18**
Analyst:	Catalyst	**Carbonate:**			**Calcium:**	**4868.0**	**242.91**
TDS (mg/l or g/m3):	114661.7	**Sulfate:**	**1800.0**	**37.48**	**Potassium:**	**557.6**	**14.26**
Density (g/cm3):	1.079				**Strontium:**	**95.7**	**2.18**
					Barium:	**0.7**	**0.01**
Hydrogen Sulfide:	37				**Iron:**	**1.2**	**0.04**
Carbon Dioxide:	75				**Manganese:**	**0.000**	**0.**
Comments:		pH at time of sampling:		7			
		pH at time of analysis:					
		pH used in Calculation:		7			
		Temperature @ lab conditions (F):		**75**	**Conductivity (micro-ohms/cm):**		**163800**
					Resistivity (ohm meter):		**.0611**

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl

Temp	Calcite $CaCO_3$		Gypsum $CaSO_4*2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
80	0.74	20.05	-0.06	0.00	-0.08	0.00	0.00	0.00	0.97	0.31
100	0.81	23.18	-0.11	0.00	-0.06	0.00	-0.02	0.00	0.78	0.31
120	0.87	26.63	-0.15	0.00	-0.02	0.00	-0.02	0.00	0.62	0.31
140	0.93	30.07	-0.18	0.00	0.04	69.23	-0.02	0.00	0.49	0.31
160	1.00	33.83	-0.20	0.00	0.12	188.58	0.00	0.00	0.37	0.31
180	1.06	37.59	-0.21	0.00	0.22	307.93	0.01	1.88	0.27	0.31
200	1.13	41.35	-0.22	0.00	0.33	417.58	0.04	5.01	0.19	0.00
220	1.20	44.80	-0.23	0.00	0.45	512.49	0.06	8.14	0.13	0.00

wellname	api	section	township	range	unit	formation	tds_mgL	chloride_mgL
RED HAT STATE SWD #001	3002531110	2	16S	33E	G	SAN ANDRES		92868
PURE STATE G #001	3002501259	15	16S	33E	G	ARTESIA	337735	210500
PURE STATE G #002	3002501260	15	16S	33E	I	ARTESIA	339980	211700
PURE STATE G #002	3002501260	15	16S	33E	I	ARTESIA	332085	207200
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	82150	49290
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	82996	49910
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	66693	39980
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	87521	52710
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	96006	57450
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	108962	67780
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	91715	55640
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	105626	64640
PHILLIPS STATE #001	3002501271	25	16S	33E	I	WOLFCAMP	83258	50120
KEMNITZ WOLFCAMP UNIT #019	3002501272	25	16S	33E	C	WOLFCAMP	28079	16170
KEMNITZ WOLFCAMP UNIT #019	3002501272	25	16S	33E	C	WOLFCAMP	27624	16060
KEMNITZ WOLFCAMP UNIT #021	3002501274	25	16S	33E	E	WOLFCAMP	63599	37760
KEMNITZ WOLFCAMP UNIT #021	3002501274	25	16S	33E	E	WOLFCAMP	56586	33890
STATE LG 26 #001	3002501276	26	16S	33E	A	CISCO	161859	102500


N32°57'2.88"
FW #2
W103°41'39.84"
W103°41'13.92"
W103°40'48"
W1
N32°56'36.96"
FW #1
Frogwater SWD
N32°56'11.04"

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 64 16 4	Sec	Twn	Rng	X	Y
L 09873	L	PRO	0	HONDO DRILLING	LE	L 09873			Shallow	3 1	08	16S	33E	622282	3645166*

Record Count: 1

POD Search:

POD Basin: Lea County

PLSS Search:

Section(s): 8 **Township:** 16S **Range:** 33E

Sorted by: File Number

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(acre ft per annum)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q 64	q 16	q 4	Sec	Twn	Rng	X	Y
L 10194	L	DOM	3	YATES PETROLEUM	LE	L 10194			Shallow	1	2	4	05	16S	33E	623372	3646492*

Record Count: 1

POD Search:

POD Basin: Lea County

PLSS Search:

Section(s): 5 **Township:** 16S **Range:** 33E

Sorted by: File Number

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q 64	q 16	q 4	Sec	Twn	Rng	X	Y
L 03444	L	PRO	0	HUMBLE OIL & REFINING COMPANY	LE	L 03444			Shallow	4	4	4	04	16S	33E	625187	3645915*

Record Count: 1

POD Search:

POD Basin: Lea County

PLSS Search:

Section(s): 4 **Township:** 16S **Range:** 33E

Sorted by: File Number

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(acre ft per annum)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	q q q 64 16 4	Sec	Twp	Rng	X	Y
L 07403	L	PRO	0	DALCO OIL COMPANY	LE	L 07403			Shallow	3 1	17	16S	33E	622303	3643558*
L 11398	L	IRR	1500	COMMISSIONER OF PUBLIC LANDS	LE	L 11398 POD1			Shallow	3 2 1	17	16S	33E	622497	3643770
					LE	L 11398 POD2			Shallow	2 1 3	17	16S	33E	622493	3643237

Record Count: 3

POD Search:

POD Basin: Lea County

PLSS Search:

Section(s): 17 **Township:** 16S **Range:** 33E

Sorted by: File Number

***UTM location was derived from PLSS - see Help**

Legal Notice

Mack Energy Corporation, Post Office Box 960, Artesia, NM 88211-0960, has filed an Application with the New Mexico Oil Conservation Division seeking authorization to inject produced water into the Frogwater SWD #1 1980 FNL & 1984 FWL of Section 8, T16S R33E, NMPM, Lea County, New Mexico. The water will be injected into the Devonian and Fusselman formations at a disposal depth of 14,380-15,420'. Water will be injected at a maximum surface pressure of 2876# pounds and a maximum injection rate of 2000-4000 BWPD. Any interested party with questions or comments may contact Deana Weaver at Mack Energy Corporation, Post Office Box 960, Artesia, New Mexico 88211-0960 or call (575) 748-1288. Objections to this application or requests for hearing must be filed with the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within fifteen days of the date of the publication of this notice.

MACK Energy Corporation

PO Box
Artesia, NM
Office
Fax

May 14, 2018

VIA CERTIFIED MAIL 7015 0640 0006 7024 4462
RETURN RECEIPT REQUESTED

Cimarex Energy Co.
202 South Cheyenne Ave., Suite 1000
Tulsa, OK 74103-3001

Gentlemen:

Enclosed for your review, is a copy of Mack Energy Corporation's application for a Devonian & Fusselman SWD well. Produced water will be injected at a proposed depth of 14,380-15,420'. The Frogwater SWD #1 located 1980 FNL & 1984 FWL, Sec. 8 T16S R33E, Lea County.

This letter will serve as a notice that Mack Energy Corporation has requested administrative approval from the NMOCD to convert this well into a water disposal well. If you have any objections, you must notify the Oil Conservation Division in Santa Fe in writing at 1220 South St. Francis Drive, Santa Fe, NM 87505 within fifteen (15) days of receiving this letter.

Sincerely,

MACK ENERGY CORPORATION

Deana Weaver

Deana Weaver
Production Clerk

DW\

Attachments

McMillan, Michael, EMNRD

From: Deana Weaver <dweaver@mec.com>
Sent: Friday, May 18, 2018 10:33 AM
To: McMillan, Michael, EMNRD
Cc: Jerry Sherrell
Subject: Frogwater SWD #1
Attachments: frogwater swd.pdf

Mike

Attached is the affidavit of publication for the Frogwater SWD #1. I mailed you the paperwork Monday.

Thanks

Deana Weaver
Mack Energy Corp
575-748-1288

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
May 16, 2018
and ending with the issue dated
May 16, 2018.

Publisher

Sworn and subscribed to before me this 16th day of May 2018.

Business Manager

My commission expires
January 29, 2019
(Seal)

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico
My Commission Expires 1-29-19

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGALS

LEGAL NOTICE
May 16, 2018

Mack Energy Corporation, Post Office Box 960, Artesia, NM 88211-0960, has filed an Application with the New Mexico Oil Conservation Division seeking authorization to inject produced water into the Frogwater SWD #1 1980 FNL & 1984 FWL of Section 8, T16S R33E, NMPM, Lea County, New Mexico. The water will be injected into the Devonian and Fusselman formations at a disposal depth of 14,350-15,420'. Water will be injected at a maximum surface pressure of 2876# pounds and a maximum injection rate of 2000-4000 BWPD. Any interested party with questions or comments may contact Deana Weaver at Mack Energy Corporation, Post Office Box 960, Artesia, New Mexico 88211-0960 or call (575) 748-1288. Objections to this application or requests for hearing must be filed with the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505, within fifteen days of the date of the publication of this notice.
#32813

67100900 00211773

NORA VAZQUEZ
MACK ENERGY CORPORATION
PO BOX 960
ARTESIA, NM 88211-0960

McMillan, Michael, EMNRD

From: McMillan, Michael, EMNRD
Sent: Tuesday, May 22, 2018 10:22 AM
To: Deana Weaver
Cc: Jerry Sherrell
Subject: RE: Frogwater SWD #1

I do not see any notification in your application but Cimarex

From: Deana Weaver <dweaver@mec.com>
Sent: Friday, May 18, 2018 10:33 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Cc: Jerry Sherrell <jerrys@mec.com>
Subject: Frogwater SWD #1

Mike

Attached is the affidavit of publication for the Frogwater SWD #1. I mailed you the paperwork Monday.

Thanks

Deana Weaver
Mack Energy Corp
575-748-1288

McMillan, Michael, EMNRD

From: Deana Weaver <dweaver@mec.com>
Sent: Friday, May 25, 2018 8:30 AM
To: McMillan, Michael, EMNRD
Subject: RE: Frogwater SWD #1
Attachments: [Untitled]_20180525082653000.pdf

Mike

Attached is proof of mailing for the Frogwater SWD #1.

Thanks

Deana Weaver

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Tuesday, May 22, 2018 11:36 AM
To: Deana Weaver
Subject: RE: Frogwater SWD #1

OCD needs proof of mailing only, so send what you have now

From: Deana Weaver <dweaver@mec.com>
Sent: Tuesday, May 22, 2018 11:35 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: RE: Frogwater SWD #1

I'll email you green cards when I receive them. Thanks

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Tuesday, May 22, 2018 10:32 AM
To: Deana Weaver
Cc: Jerry Sherrell
Subject: RE: Frogwater SWD #1

I need proof of mailing (green cards) for Cimarex, Eidson Ranch and NMSLO

From: Deana Weaver <dweaver@mec.com>
Sent: Tuesday, May 22, 2018 10:30 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Cc: Jerry Sherrell <jerrys@mec.com>
Subject: RE: Frogwater SWD #1

Mike

I was given the list of offset operators (see attached) from our land department. Who else do I need to notify?

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Tuesday, May 22, 2018 10:22 AM

7015 0640 0006 7031 4042

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EIDSON RANCH, INC
P.O. BOX 1286
LOVINGTON, NM 88260

McMillan, Michael, EMNRD

From: Deana Weaver <dweaver@mec.com>
Sent: Monday, June 11, 2018 4:54 PM
To: McMillan, Michael, EMNRD
Subject: RE: Frogwater SWD #1
Attachments: Frogwater Samples.jpg

Woodford – 14,290'
Devonian – 14,380'

Fresh water map attached

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Monday, June 11, 2018 4:47 PM
To: Deana Weaver
Subject: RE: Frogwater SWD #1

Can you provide the top of the Woodford and Devonian formations also

From: McMillan, Michael, EMNRD
Sent: Monday, June 11, 2018 4:15 PM
To: 'Deana Weaver' <dweaver@mec.com>
Subject: RE: Frogwater SWD #1

http://octane.nmt.edu/gotech/

From: McMillan, Michael, EMNRD
Sent: Friday, May 25, 2018 8:47 AM
To: Deana Weaver <dweaver@mec.com>
Subject: RE: Frogwater SWD #1

Thanks
The 15-day clock starts today
Mike

From: Deana Weaver <dweaver@mec.com>
Sent: Friday, May 25, 2018 8:30 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: RE: Frogwater SWD #1

Mike

Attached is proof of mailing for the Frogwater SWD #1.

Thanks

Deana Weaver

McMillan, Michael, EMNRD

From: McMillan, Michael, EMNRD
Sent: Tuesday, June 12, 2018 8:41 AM
To: 'Deana Weaver'
Subject: RE: Frogwater SWD #1

Thanks

From: Deana Weaver <dweaver@mec.com>
Sent: Tuesday, June 12, 2018 8:34 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: RE: Frogwater SWD #1

Operator

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Tuesday, June 12, 2018 8:33 AM
To: Deana Weaver
Subject: RE: Frogwater SWD #1

Will this be used for operator or a commercial SWD well?
I am working on the Order now
Mike

From: Deana Weaver <dweaver@mec.com>
Sent: Tuesday, June 12, 2018 8:22 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: RE: Frogwater SWD #1

Thank you – Deana Weaver

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Tuesday, June 12, 2018 8:22 AM
To: Deana Weaver
Subject: RE: Frogwater SWD #1

Thanks-The Cisco water sample is fine-the formations are used interchangeably
Mike

From: Deana Weaver <dweaver@mec.com>
Sent: Tuesday, June 12, 2018 8:19 AM
To: McMillan, Michael, EMNRD <Michael.McMillan@state.nm.us>
Subject: RE: Frogwater SWD #1

Attached is a Cisco water analysis. I'm still looking for a canyon analysis.

From: McMillan, Michael, EMNRD [mailto:Michael.McMillan@state.nm.us]
Sent: Monday, June 11, 2018 4:47 PM

FORM C-108 Technical Review Summary [Prepared by reviewer and included with application; V16.2]

DATE RECORD: First Rec: 5/18/2015 Admin Complete: 5/25/2018 or Suspended: ________ Add. Request/Reply: ________

ORDER TYPE: WFX / PMX / (SWD) Number: ________ Order Date: ________ Legacy Permits/Orders: ________

Well No. 1 Well Name(s): Frog water

API : 30-0 25-35544 Spud Date: ________ New or Old (EPA): N - TBD 01/04/2002 (O) (UIC Class II Primacy 03/07/1982)

Footages 1980FNL 1980FWL Lot ____ or Unit F Sec 8 Tsp 16S Rge 33E County Lea

General Location: 2 miles W/ Lovington Pool: SWD; Devonian-Silurian Pool No.: 97869

BLM 100K Map: Hobbs Operator: Mack Energy, Inc. OGRID: 13837 Contact: Regulatory

COMPLIANCE RULE 5.9: Total Wells: 162 Inactive: 3 **Fincl Assur:** NA Compl. Order? NA IS 5.9 OK? ____ Date: 5-22-2018

WELL FILE REVIEWED ◯ Current Status: P&A

WELL DIAGRAMS: NEW: Proposed ◯ or **RE-ENTER:** Before Conv. ✓ After Conv. ✓ Logs in Imaging: Y

Planned Rehab Work to Well: ________

Well Construction Details	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Stage Tool	Cement Sx or Cf	Cement Top and Determination Method
Planned __or Existing __Surface	17½/13⅜"	453'		495	Surface/visual
Planned__or Existing __ Interm/Prod	12¼/9⅝"	4245'		1725	Surface/visual
Planned__or Existing __Interm/Prod	8¾/7½'			2065	Surface/visual
Planned__or Existing __ Prod/Liner					
Planned__or Existing __ Liner					
Planned__or Existing __ OH / PERF	14438/15520		Inj Length		

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.		WC	14240
Confining Unit: Litho. Struc. Por.		Dv	14380
Proposed Inj Interval TOP:			
Proposed Inj Interval BOTTOM:			
Confining Unit: Litho. Struc. Por.			
Adjacent Unit: Litho. Struc. Por.			

Completion/Operation Details:

Drilled TD 13650 PBTD ________
NEW TD 15520 NEW PBTD ________
NEW Open Hole ◯ or NEW Perfs ✓
Tubing Size 2⅞ in. Inter Coated? ________
Proposed Packer Depth 14430 ft
Min. Packer Depth 14380 (100-ft limit)
Proposed Max. Surface Press. 2876 psi
Admin. Inj. Press. 2876 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

POTASH: R-111-P NA Noticed? ____ **BLM Sec Ord** ◯ **WIPP** ◯ Noticed? ____ **Salt/Salado** T: 360 1800 B: 1430 2750 **NW: Cliff House fm** NA

FRESH WATER: Aquifer Quarternary Max Depth 285 **HYDRO AFFIRM STATEMENT By Qualified Person** ✓

NMOSE Basin: Lea **CAPITAN REEF:** thru ____ adj ____ NA ____ **No. GW Wells in 1-Mile Radius?** ____ FW Analysis? ____

Disposal Fluid: Formation Source(s) Wolfcamp, Cisco Canyon, ________ Analysis? ________ On Lease ◯ Operator Only ◯ or Commercial ◯

Disposal Interval: Inject Rate (Avg/Max BWPD): 24K Protectable Waters? ____ Source: ________ System: (Closed) or Open

HC Potential: Producing Interval? NA Formerly Producing? ____ Method: Logs/DST/P&A/Other regional 2-Mi Radius Pool Map ◯

AOR Wells: 1/2-M Radius Map and Well List? Y **No. Penetrating Wells:** Ø [AOR Horizontals: Ø AOR SWDs: ____]

Penetrating Wells: No. Active Wells Ø Num Repairs? ____ on which well(s)? ________ Diagrams? ____

Penetrating Wells: No. P&A Wells Ø Num Repairs? ____ on which well(s)? ________ Diagrams? ____

NOTICE: Newspaper Date May 16, 2018 Mineral Owner NMSLO Surface Owner Eidson Ranch N. Date May 14, 2018

RULE 26.7(A): Identified Tracts? Y Affected Persons: Chase Oil, Cimarex, NMSLO N. Date May 14, 2018

Order Conditions: Issues: Must circulate deep intermediate to

Additonal COAs: Surface, If not must notify Hobbs of top of cement & TD 100' of shallow ...