FEB 28 2019 PM02:32

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:
02/28/2019		SWD	pMAM19060 41401

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: COG Operating, LLC **OGRID Number:** 229137
Well Name: White Falcon 16 State SWD 1 **API:** 30-025-Pending
Pool: **Pool Code:** 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.

Brian Collins
Print or Type Name

Signature

25 Feb 2019
Date

575-748-6940
Phone Number

bcollins@concho.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: COG Operating, LLC

ADDRESS: One Concho Center, 600 W. Illinois Ave., Midland, TX 79701

CONTACT PARTY: Brian Collins PHONE: 575-748-6940

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).

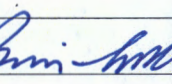
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

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: _Brian Collins TITLE: Facilities Engineering Advisor

SIGNATURE:  DATE: 25 Feb 2019

E-MAIL ADDRESS: _bcollins@concho.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 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

C-108 Application for Authorization to Inject
White Falcon 16 State SWD 1
2000' FNL, 2630' FWL
Unit F, Section 16, T25S, R35E
Lea County, NM

COG Operating, LLC, proposes to drill the captioned well to 20,100' for salt water disposal service into the Devonian/Silurian from approximately 17,900' to 20,100'. A drilling permit will be submitted upon approval of this C-108.

Should this well undergo a mechanical integrity issue while in service in the future, it will be taken out of service immediately per UIC rules and repaired as quickly as possible. The water going to this well will be diverted to other SWD wells via pipeline if applicable; otherwise it will be trucked to other SWD wells. If necessary, producing wells serviced by this SWD well will be curtailed and/or shut-in until this well is repaired.

III. Well data is attached. A fishing risk assessment is attached.

IV. This is not an expansion of an existing project.

V. Map is attached.

VI. No wells within the 1 mile radius area of review penetrate the proposed injection zone.

VII. 1. Proposed average daily injection rate = 25,000 BWPD
Proposed maximum daily injection rate = 40,000 BWPD

2. Closed system

3. Proposed maximum injection pressure = 3580 psi
(0.2 psi/ft. x 17,900' ft.)

4. Source of injected water will be Delaware, Bone Spring and Wolfcamp produced water. No compatibility problems are expected. Analyses of Delaware, Bone Spring and Wolfcamp waters from analogous source wells are attached. An appropriate chemical treatment program will be put in place should scale formation become apparent.

VIII. The injection zone is the Devonian/Silurian, a mixture of non-hydrocarbon bearing limestone and dolomite from 17,900' to 20,100'. Any underground water sources will be shallower than 705', the estimated top of the Rustler Anhydrite. The estimated top of the Devonian is 18,138' and the Fusselman is 19,378'. The proposed permitted injection interval has been expanded upwards and downwards to account for geologic uncertainty.

IX. The Devonian/Silurian injection interval will be acidized with approximately 40,000 gals of 20 % HCl acid.

X. Well logs will be filed with the Division. A section of open hole log across the Devonian/Silurian from the Reno Com 1 located about 2.5 miles east in Unit D, Section 11, T25S, R35E is attached.

XI. There are two fresh water wells within a mile of the proposed SWD well from the NMOSE records. Water analysis is attached for water from the stock tank next to the water wells located in the NE/4 of the NW/4 Section 21, T25S, R35E.

XII. After examining the available geologic and engineering data, no evidence was found of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

_____, Facilities Engineering Advisor, 25 Feb 2019

A seismicity assessment is attached.

XIII. Proof of Notice is attached.

COG Operating LLC
White Falcon 16 State SWD #1
C-108 Attachment
December 20, 2018

Statement Regarding Seismicity and Disposal Well Location

COG Operating LLC interpreted faults based on licensed 3D seismic data in the area around our proposed SWD. Our investigation of the deep formations does not indicate nearby faults or structures in the immediate area that would increase the chances of induced seismicity.

A recent paper by Snee and Zoback titled, "State of Stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity", was published in the February 2018 edition of The Leading Edge. The authors evaluated the strike-slip probability of known Permian Basin faults. The nearest fault is located approximately 6.7 miles West of our proposed SWD (see map). The study predicts that this fault has a less than 10% probability of being critically stressed as to create an induced seismicity event. The primary reason for the low probability is the relationship of the strike of the fault to the regional maximum stress orientation (N 75 degrees E).

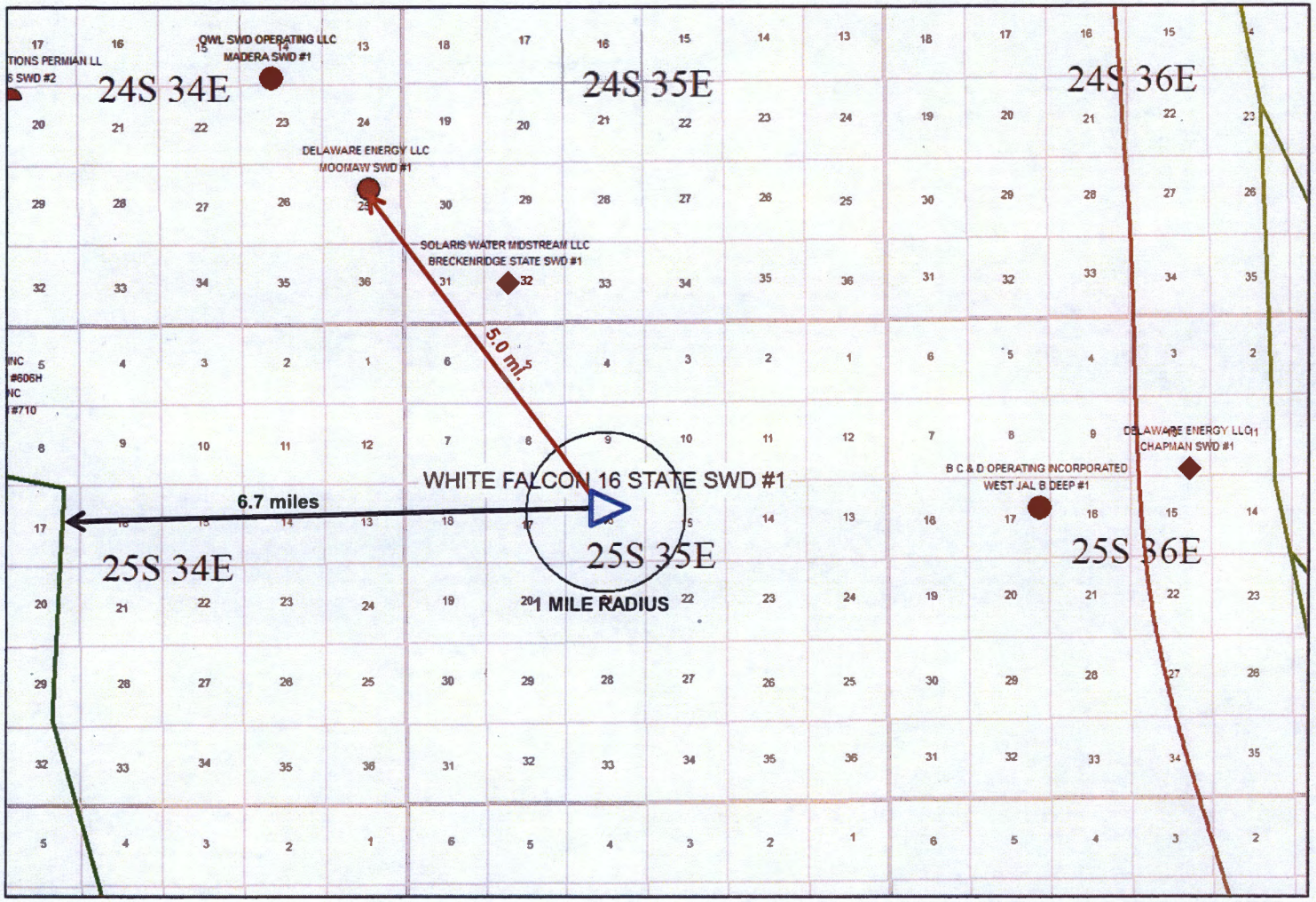
The proposed White Falcon 16 State SWD #1 is located 5.0 miles away from the nearest active Devonian SWD well (see map) and no active, permitted or pending Devonian SWD applications within the one mile radius.

Regards,

Carrie M. Martin

Staff Geologist
COG Operating LLC
cmartin@concho.com
432-221-0479

WHITE FALCON 16 STATE SWD #1



LEGEND

Devonian SWD Status

- SWD
- PLUGGED
- ABANDONED
- DRILLING
- LOC
- TA
- PROPOSED SWD
- Snee, Zoback Faults (Low Fault Slip Potential)

CONCHO

III.

WELL DATA

INJECTION WELL DATA SHEET

Operator: COG Operating, LLC
Well Name & Number: White Falcon 16 State SWD 1
Well Location: 2000' FNL, 2630' FWL, Unit F, Section 16, T25S, R35E

Wellbore Schematic: See attached schematic

Surface Casing:

Hole Size: 26"
Casing Size: 20" @ 725'
Cemented with: 2200 cubic feet
Top of Cement: Surface by design

Intermediate Casing:

Hole Size: 17-1/2"
Casing Size: 13-3/8" @ 5275'
Cemented with: 5500 cubic feet
Top of Cement: Surface by design

Intermediate Casing:

Hole Size: 12-1/4"
Casing Size: 9-5/8" @ 12500'
Cemented with: 5875 cubic feet
Top of Cement: Surface by design

Production Casing:

Hole Size: 8-1/2"
Casing Size: 7-5/8" flush joint liner @ 12300-17900'
Cemented with: 650 cubic feet
Top of Cement: Liner top by design

Injection Interval:

17900' to 20100' (6-1/2" open hole)

Injection Tubing/Packer:

Tubing Size: 5-1/2" 0-12200' inside 9-5/8" casing, 5" from 12200-17850' inside 7-5/8" casing
Lining Material: Internally fiberglass lined
Type of Packer: Nickel plated or CRA 10K permanent packer
Packer Setting Depth: 17850'
Other Type of Tubing/Casing Seal: Not Applicable

Additional Data:

1. Is this a new well drilled for injection? Yes
   If no, for what purpose was well originally drilled? N/A

2. Name of Injection Formation: Devonian/Silurian

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

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

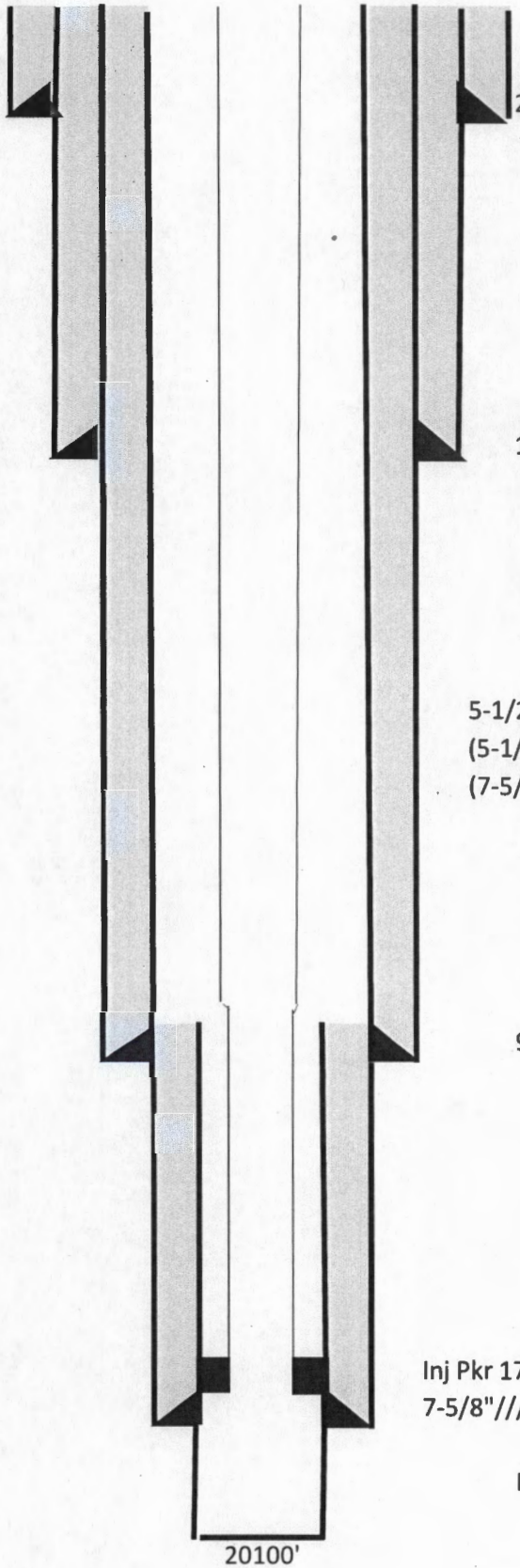
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

   Overlying: Possible Delaware 5250-9000', Bone Spring 9000-12325', Wolfcamp 12325-13400', possible Strawn 13500'+, possible Atoka 14175'+, possible Morrow 15175'+

   Underlying: None

White Falcon 16 State SWD 1
2000' FNL, 2630' FWL
F-16-25s-35e
Lea, NM
30-025-xxxxx

Zero:
KB elev:
GL elev: 3238'



20"/// @ 725'

2200 CF Cmt (circ to surf)
Rustler top 705'

13-3/8"/// @ 5275'

5500 CF Cmt (circ to surf)
Delaware Sd top 5256'

5-1/2" x 5" Inj Tbg 0-17850'
(5-1/2" 0-12200' inside 9-5/8", 5" 12200-17850' inside 7-5/8")
(7-5/8" liner top 12300')

9-5/8"/// @ 12500'

5875 CF Cmt (circ to surf)
Wolfcamp top 12333'

Inj Pkr 17850'
7-5/8"/// FJ liner 12300-17900'

650 CF Cmt (circ to liner top)
Set in top Devonian

Devonian/Silurian OH

kbcollins 19-Feb-19

Fishing Risk Assessment
White Falcon 16 State SWD 1

Note: All fishing procedures are subject to well conditions. Expert judgement and experience are required and there are too many combinations of possible fishing operations options to list below. Fishing techniques are determined on a case-by-case, day-by-day basis.

5" Injection Tubing Inside of 7-5/8" Casing

7-5/8"/39ppf casing: ID = 6.625", Drift ID = 6.500"
5"/18ppf/L80/TCPC FG-lined injection tubing: Tube/body OD = 5.000", Cplg OD = 5.700"
Clearance between body OD of tubing and drift ID of casing = 1.500"

The proposed downhole configuration allows for effective, straightforward tubing fishing operations.

Tubing will have a floating seal assembly landed in seal bore extensions below the packer which will allow a simple straight pull to separate the tubing from the packer.

For washover operations:

- 6-3/8" washpipe: OD = 6.375", ID = 5.625", Drift ID = 5.500"
- OD of washpipe is less than drift ID of casing (6.500" drift ID vs 6.375" washpipe OD)
- Drift ID of washpipe is greater than OD of 5" tubing (5.500" drift ID vs 5.000" Tubing OD)
- Drift ID of washpipe is slightly less than coupling OD of 5" tubing (washpipe 5.500" drift ID vs 5.700" tubing coupling OD---0.200" difference). If necessary to wash over the coupling, would use a mill on the end of the washpipe to mill off the 0.200" dimensional difference in such a way:
    1. To allow a 6.625" Series 150 spiral grapple overshot turned down from 6.625" OD to 6.5" OD to catch the milled down coupling (mill coupling to 5.5" or less OD).
    2. To allow a 5.875" OD Series 150 spiral grapple overshot to catch the 5" body of the tubing (mill coupling to 5" tube OD).

For fishing operations with overshot:

- 5" tube/body can be fished with 5.875" OD Series 150 spiral grapple overshot (5.875" overshot OD vs 6.5" casing drift ID).
- 5.700" OD TCPC coupling can be milled down and fished as described above in "washover operations."

For fishing operations with spear:

- Fiberglass liner can be milled out, or torn out with a spear, to allow a releasable spear assembly to grasp the ID of the injection tubing.

Fishing Risk Assessment
White Falcon 16 State SWD 1

Note: All fishing procedures are subject to well conditions. Expert judgement and experience are required and there are too many combinations of possible fishing operations options to list below. Fishing techniques are determined on a case-by-case, day-by-day basis.

5-1/2" Injection Tubing Inside of 9-5/8" Casing

9-5/8"/53.5 ppf casing: ID = 8.535", Drift ID = 8.379"
5-1/2"/20ppf/P110/TCPC FG-lined injection tubing: Tube/body OD = 5.500", Cplg OD = 6.250"
Clearance between body OD of tubing and drift ID of casing = 2.879"

The proposed downhole configuration allows for effective, straightforward tubing fishing operations.

Tubing will have a floating seal assembly landed in seal bore extensions below the packer which will allow a simple straight pull to separate the tubing from the packer.

For washover operations:

- 7-3/8" washpipe: OD = 7.375", ID = 6.625", Drift ID = 6.500"
- OD of washpipe is less than drift ID of casing (8.379" drift ID vs 7.375" washpipe OD)
- Drift ID of washpipe is greater than OD of 5-1/2" tubing (6.500" drift ID vs 5.500" Tubing OD)
- Drift ID of washpipe greater than OD of 5-1/2" tubing coupling (6.500" drift ID vs 6.250" Tubing Coupling OD)

For fishing operations with overshot:

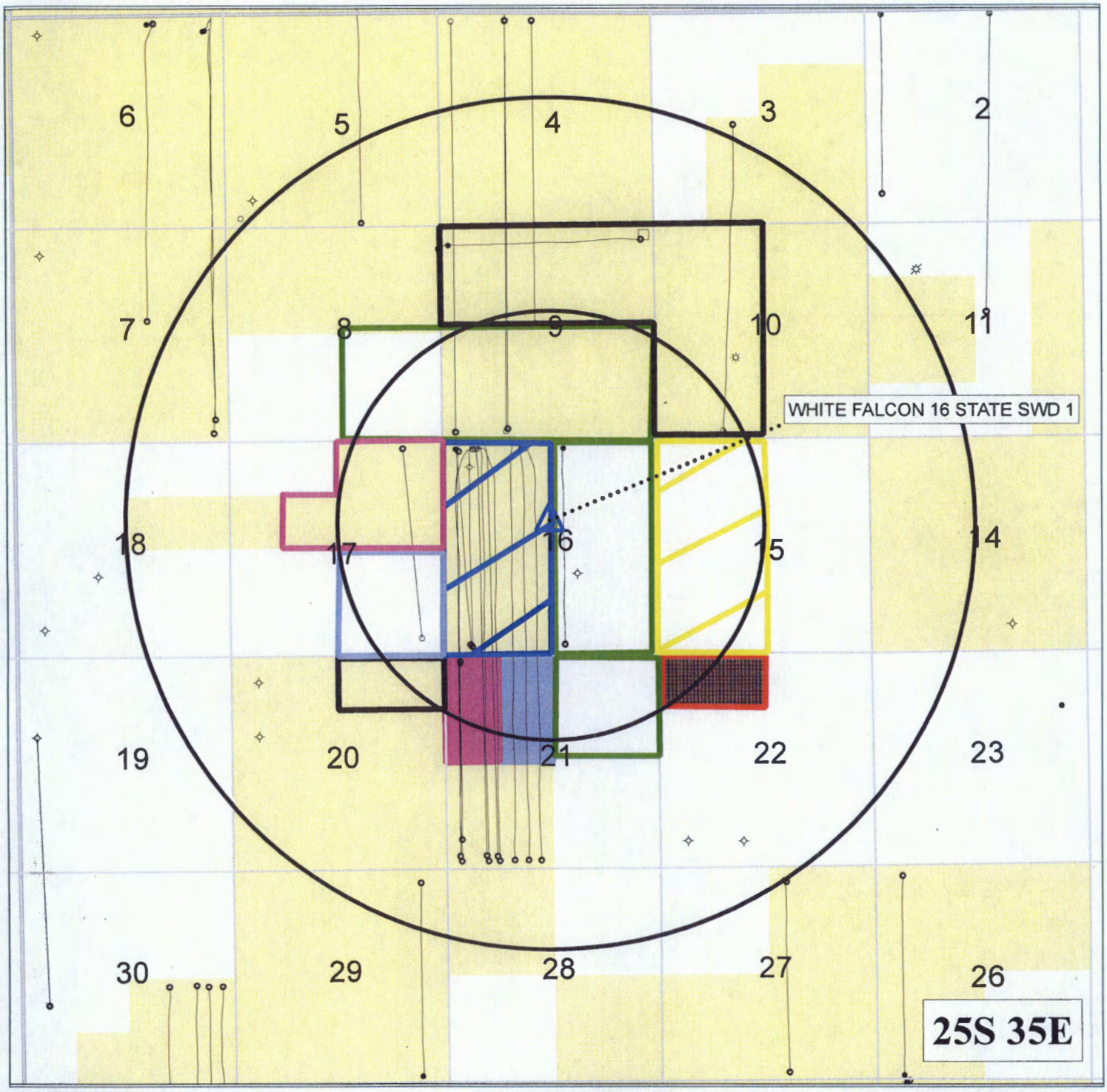
- 5-1/2" tube/body can be fished with 6.625" OD Series 150 spiral grapple overshot (6.625" overshot OD vs 8.379" casing drift ID).
- 6.250" OD TCPC coupling can be fished with 7.375" OD Series 150 spiral grapple overshot (7.375" overshot OD vs 8.379" casing drift ID).

For fishing operations with spear:

- Fiberglass liner can be milled out, or torn out with a spear, to allow a releasable spear assembly to grasp the ID of the injection tubing.

V.

MAP



- COG Operating LLC
- EOG Resources, EOG A Resources, EOG M Resources, EOG Y Resources
- Matador Production Co, MRC Permian Co, COG Operating LLC, Energen Resources, Marathon Oil Permian, Prime Rock Resources, Franklin Mtn. Energy, Bone Springs Resources, MJM Energy, Energex
- MRC Permian Co, Santo Petroleum, One Energy Partners Opertaing, COG Operating LLC, Energex
- Chevron USA, COG Operating LLC
- COG Operating LLC, EOG A Resources, EOG M Resources. EOG Y Resources, VF Petroleum Inc
- Chevron USA
- COG Operating LLC, Chisos LTD
- COG Operating LLC, Chisos LTD, Apache Corporation

CONCHO

Project: _NDB GLOBAL

NORTHERN DELAWARE BASIN EAST TEAM

WHITE FALCON 16 STATE SWD #1

2000 FNL 2630 FWL

Sec. 16, T25S, R35E

Lea Co., New Mexico

K STEVENS		Date: 19 February, 2019

File Path: GGX06\Northern_Delaware_Basin\NDB SWD AOI\KJS WHITE FALCON SWD RADIUS MAP.gmp

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 RD., 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, New Mexico 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	WHITE FALCON 16 STATE SWD	1

OGRID No.	Operator Name	Elevation
	COG OPERATING, LLC	3238.3'

Surface Location

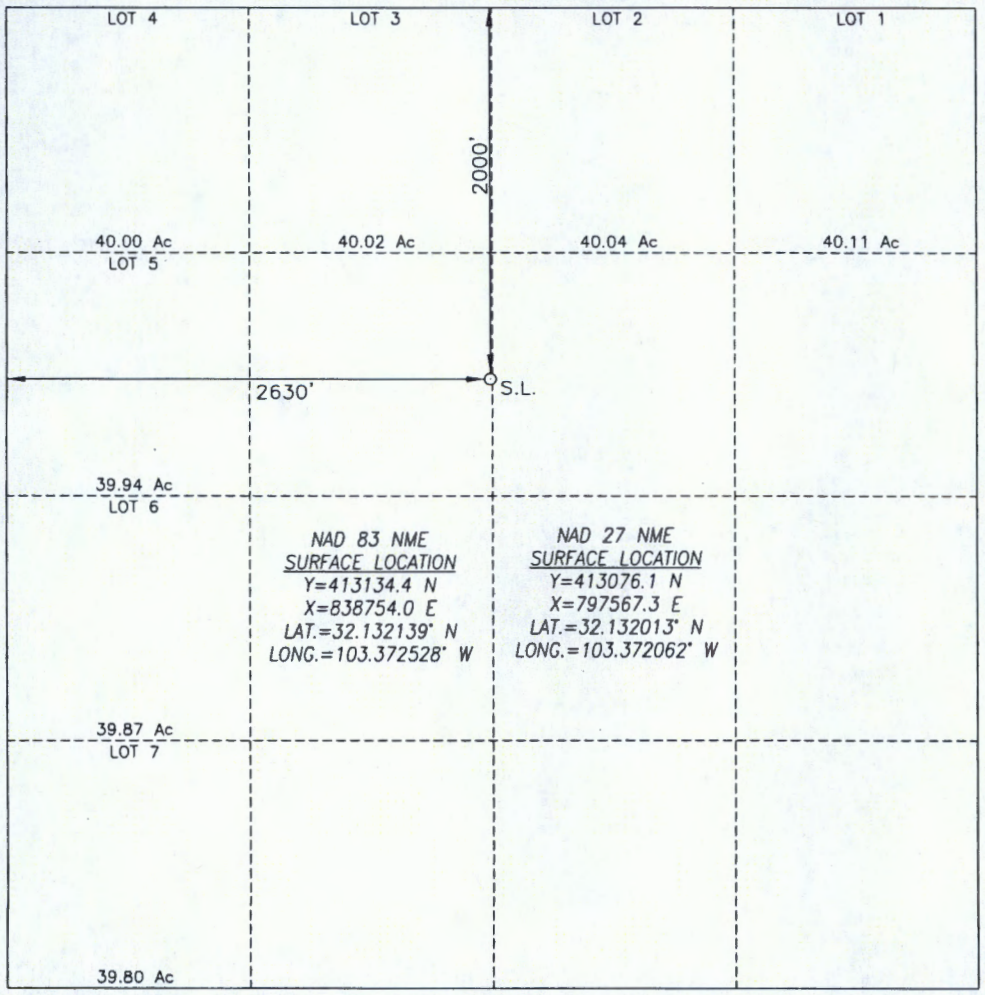
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	16	25-S	35-E		2000	NORTH	2630	WEST	LEA

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

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



OPERATOR CERTIFICATION

I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

E-mail Address

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.

OCTOBER 29, 2018
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
17777
LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 11/7/18

Certificate No. CHAD HARCROW 17777

W.O. # 18-1301 DRAWN BY: JH

C-108 Application for Authorization to Inject
White Falcon 16 State SWD 1
2000' FNL, 2630' FWL
Unit F, Section 16, T25S, R35E
Lea County, NM

List of Affected Persons Within 1 Mile Radius Area of Review

Surface Owner:

New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501

Affected Persons:

COG Operating, LLC
One Concho Center
600 W Illinois Ave.
Midland, TX 79701

V-F Petroleum, Inc.
500 West Texas Ave., Suite 350
Midland, TX 79701

EOG Resources, Inc.
5509 Champions Drive
Midland, TX 79706

EOG Y Resources
104 South Fourth Street
Artesia, NM 88210

EOG A Resources
104 South Fourth Street
Artesia, NM 88210

EOG M Resources
104 South Fourth Street
Artesia, NM 88210

Chisos, LTD
1331 Lamar Street
Houston, TX 77010

Apache Corporation
2000 Post Oak Boulevard, Suite 100
Houston, TX 77056-4400

MRC Permian Co.
5400 Lyndon B. Johnson Freeway, Suite 1500
Dallas, TX 75240

Matador Production Company
5400 Lyndon B. Johnson Freeway, Suite 1500
Dallas, TX 75240

Energen Resources Corporation
605 Richard Arrington, Jr. Boulevard
North Birmingham, AL 35203-2707

Marathon Oil Permian LLC
5555 San Felipe Street
Houston, TX 77056

Prime Rock Resources Asset Co, LLC
203 West Wall Street, Suite 1000
Midland, TX 79701

Franklin Mountain Energy 2 LLC
123 West Mills Avenue, Suite 600
El Paso, TX 79901

Bone Springs Resources, LLC
22318 Branson Road
Poteau, OK 74953

MJM Energy Interests, LLC
1621 Central Avenue
Cheyenne, WY 82001

Energex, LLC
4425 98th Street, Suite 200
Lubbock, TX 79424

Chevron U.S.A. Inc.
1400 Smith Street
Houston, Texas 77002

Chevron USA Inc.
15 Smith Road
Midland, TX 79705

Santo Petroleum, LLC
101 S. 4th Street, Suite B
Artesia, NM 88210

One Energy Partners Operating, LLC
2929 Allen Parkway, Suite 200
Houston, TX 77019

VI.

No Wells Penetrate Proposed Disposal Interval Within One Mile Area of Review

VII.

Water Analysis Produced and Receiving Formation Water

Delaware Sand

BAKER HUGHES

Permian Basin Area Laboratory
2101 Market Street,
Midland, Texas 79703

Upstream Chemicals

REPORT DATE: 5/11/2018

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	COG OPERATING LLC	**ACCOUNT REP:**	KENNETH MORGAN
DISTRICT:	NEW MEXICO	**SAMPLE ID:**	201701012804
AREA/LEASE:	KING TUT	**SAMPLE DATE:**	3/21/2017
SAMPLE POINT NAME	KING TUT FED 3H BTRY	**ANALYSIS DATE:**	3/24/2017
SITE TYPE:	FACILITY	**ANALYST:**	SVP
SAMPLE POINT DESCRIPTION:	TRANSFER PUMP		

COG OPERATING LLC, KING TUT, KING TUT FED 3H BTRY

FIELD DATA		ANALYSIS OF SAMPLE					
		ANIONS:	mg/L	meq/L	CATIONS:	mg/L	meq/L
Initial Temperature (°F):	250	Chloride (Cl^-):	152606.2	4304.8	Sodium (Na^+):	74498.5	3241.9
Final Temperature (°F):	80	Sulfate (SO_4^{2-}):	461.4	9.6	Potassium (K^+):	1381.8	35.3
Initial Pressure (psi):	100	Borate (H_3BO_3):	170.9	2.8	Magnesium (Mg^{2+}):	2495.8	205.4
Final Pressure (psi):	15	Fluoride (F^-):	ND		Calcium (Ca^{2+}):	15329.6	765.0
		Bromide (Br^-):	ND		Strontium (Sr^{2+}):	724.2	16.5
pH:		Nitrite (NO_2^-):	ND		Barium (Ba^{2+}):	1.8	0.0
pH at time of sampling:	6.8	Nitrate (NO_3^-):	ND		Iron (Fe^{2+}):	43.2	1.5
		Phosphate (PO_4^{3-}):	ND		Manganese (Mn^{2+}):	2.6	0.1
		Silica (SiO_2):	ND		Lead (Pb^{2+}):	0.0	0.0
					Zinc (Zn^{2+}):	0.0	0.0
ALKALINITY BY TITRATION:	mg/L	meq/L					
Bicarbonate (HCO_3^-):	36.6	0.6			Aluminum (Al^{3+}):	0.0	0.0
Carbonate (CO_3^{2-}):	ND				Chromium (Cr^{3+}):	ND	
Hydroxide (OH^-):	ND				Cobalt (Co^{2+}):	ND	
		ORGANIC ACIDS:	mg/L	meq/L	Copper (Cu^{2+}):	0.0	0.0
aqueous CO_2 (ppm):	1050.0	Formic Acid:	ND		Molybdenum (Mo^{2+}):	0.0	0.0
aqueous H_2S (ppm):	0.0	Acetic Acid:	ND		Nickel (Ni^{2+}):	ND	
aqueous O2 (ppb):	ND	Propionic Acid:	ND		Tin (Sn^{2+}):	ND	
		Butyric Acid:	ND		Titanium (Ti^{2+}):	ND	
Calculated TDS (mg/L):	247582	Valeric Acid:	ND		Vanadium (V^{2+}):	ND	
Density/Specific Gravity (g/cm³):	1.1573				Zirconium (Zr^{2+}):	ND	
Measured Specific Gravity	1.1683				Lithium (Li):	ND	
Conductivity (mmhos):	ND						
Resistivity:	ND				Total Hardness:	49434	N/A
MCF/D:	No Data						
BOPD:	No Data						
BWPD:	No Data	Anion/Cation Ratio:		1.01	ND = Not Determined		

SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

Conditions		Barite ($BaSO_4$)		Calcite ($CaCO_3$)		Gypsum ($CaSO_4 \cdot 2H_2O$)		Anhydrite ($CaSO_4$)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
80°F	15 psi	0.40	0.646	1.16	7.579	-0.15	0.000	-0.23	0.000
99°F	24 psi	0.28	0.509	1.18	7.675	-0.14	0.000	-0.14	0.000
118°F	34 psi	0.16	0.334	1.20	7.774	-0.14	0.000	-0.06	0.000
137°F	43 psi	0.05	0.115	1.22	7.857	-0.15	0.000	0.03	13.651
156°F	53 psi	-0.06	0.000	1.23	7.925	-0.15	0.000	0.11	51.143
174°F	62 psi	-0.16	0.000	1.24	7.980	-0.16	0.000	0.20	82.865
193°F	72 psi	-0.25	0.000	1.25	8.022	-0.17	0.000	0.28	109.409
212°F	81 psi	-0.34	0.000	1.25	8.058	-0.19	0.000	0.37	131.297
231°F	91 psi	-0.42	0.000	1.26	8.083	-0.20	0.000	0.46	149.069
250°F	100 psi	-0.50	0.000	1.26	8.095	-0.22	0.000	0.55	163.281

Conditions		Celestite ($SrSO_4$)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate ($FeCO_3$)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
80°F	15 psi	0.34	123.094	-0.45	0.000	-7.90	0.000	0.19	1.935
99°F	24 psi	0.34	125.716	-0.46	0.000	-8.04	0.000	0.27	2.698
118°F	34 psi	0.35	126.379	-0.48	0.000	-8.15	0.000	0.34	3.330
137°F	43 psi	0.35	126.223	-0.49	0.000	-8.24	0.000	0.39	3.801
156°F	53 psi	0.35	126.022	-0.50	0.000	-8.32	0.000	0.43	4.122
174°F	62 psi	0.35	126.264	-0.51	0.000	-8.38	0.000	0.45	4.307
193°F	72 psi	0.35	127.203	-0.53	0.000	-8.43	0.000	0.45	4.367
212°F	81 psi	0.36	128.885	-0.54	0.000	-8.47	0.000	0.44	4.316
231°F	91 psi	0.36	131.186	-0.55	0.000	-8.51	0.000	0.42	4.148
250°F	100 psi	0.37	133.846	-0.56	0.000	-8.54	0.000	0.38	3.848

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales

Note 3: Saturation Index predictions on this sheet use pH and alkalinity; $\%CO_2$ is not included in the calculations.

ScaleSoftPitzer™ SSP2010

Comments:

Bone Spring

BAKER HUGHES

Permian Basin Area Laboratory
2101 Market Street,
Midland, Texas 79703

Upstream Chemicals

REPORT DATE: 5/16/2018

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	COG OPERATING LLC	**ACCOUNT REP:**	KENNETH MORGAN
DISTRICT:	NEW MEXICO	**SAMPLE ID:**	201501048297
AREA/LEASE:	WINDWARD	**SAMPLE DATE:**	12/11/2015
SAMPLE POINT NAME	WINDWARD FED 2H	**ANALYSIS DATE:**	12/16/2015
SITE TYPE:	WELL SITES	**ANALYST:**	SAMUEL NEWMAN
SAMPLE POINT DESCRIPTION:	WELL HEAD		

COG OPERATING LLC, WINDWARD, WINDWARD FED 2H

FIELD DATA		ANALYSIS OF SAMPLE					
		ANIONS:	mg/L	meq/L	CATIONS:	mg/L	meq/L
Initial Temperature (°F):	250	Chloride (Cl^-):	89914.5	2536.4	Sodium (Na^+):	46148.7	2008.2
Final Temperature (°F):	82	Sulfate (SO_4^{2-}):	1031.7	21.5	Potassium (K^+):	902.9	23.1
Initial Pressure (psi):	100	Borate (H_3BO_3):	187.2	3.0	Magnesium (Mg^{2+}):	855.0	70.4
Final Pressure (psi):	15	Fluoride (F^-):	ND		Calcium (Ca^{2+}):	6890.6	343.8
		Bromide (Br^-):	ND		Strontium (Sr^{2+}):	278.9	6.4
pH:		Nitrite (NO_2^-):	ND		Barium (Ba^{2+}):	0.0	0.0
pH at time of sampling:	7.1	Nitrate (NO_3^-):	ND		Iron (Fe^{2+}):	89.1	3.2
		Phosphate (PO_4^{3-}):	ND		Manganese (Mn^{2+}):	1.8	0.1
		Silica (SiO_2):	ND		Lead (Pb^{2+}):	ND	
					Zinc (Zn^{2+}):	0.0	0.0
ALKALINITY BY TITRATION:	mg/L	meq/L					
Bicarbonate (HCO_3^-):	170.0	2.8			Aluminum (Al^{3+}):	ND	
Carbonate (CO_3^{2-}):	ND				Chromium (Cr^{3+}):	ND	
Hydroxide (OH^-):	ND				Cobalt (Co^{2+}):	ND	
			ORGANIC ACIDS:	mg/L	meq/L	Copper (Cu^{2+}):	ND	
aqueous CO_2 (ppm):	240.0		Formic Acid:	ND		Molybdenum (Mo^{2+}):	ND	
aqueous H_2S (ppm):	0.0		Acetic Acid:	ND		Nickel (Ni^{2+}):	ND	
aqueous O2 (ppb):	ND		Propionic Acid:	ND		Tin (Sn^{2+}):	ND	
			Butyric Acid:	ND		Titanium (Ti^{2+}):	ND	
Calculated TDS (mg/L):	146283		Valeric Acid:	ND		Vanadium (V^{2+}):	ND	
Density/Specific Gravity (g/cm³):	1.0934					Zirconium (Zr^{2+}):	ND	
Measured Specific Gravity	1.1045					Lithium (Li^+):	ND	
Conductivity (mmhos):	ND							
Resistivity:	ND					Total Hardness:	21067	N/A
MCF/D:	No Data							
BOPD:	No Data							
BWPD:	No Data		Anion/Cation Ratio:		1.04	ND = Not Determined		

SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA, FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

Conditions		Barite ($BaSO_4$)		Calcite ($CaCO_3$)		Gypsum ($CaSO_4 \cdot 2H_2O$)		Anhydrite ($CaSO_4$)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
82°F	15 psi		0.000	1.43	35.518	-0.18	0.000	-0.34	0.000
101°F	24 psi		0.000	1.48	36.271	-0.17	0.000	-0.25	0.000
119°F	34 psi		0.000	1.54	37.269	-0.16	0.000	-0.16	0.000
138°F	43 psi		0.000	1.60	38.261	-0.15	0.000	-0.06	0.000
157°F	53 psi		0.000	1.66	39.182	-0.15	0.000	0.04	39.216
175°F	62 psi		0.000	1.72	40.019	-0.14	0.000	0.14	133.848
194°F	72 psi		0.000	1.78	40.776	-0.13	0.000	0.24	211.707
213°F	81 psi		0.000	1.84	41.510	-0.13	0.000	0.35	274.678
231°F	91 psi		0.000	1.90	42.195	-0.13	0.000	0.45	324.816
250°F	100 psi		0.000	1.96	42.808	-0.12	0.000	0.56	364.191

Conditions		Celestite ($SrSO_4$)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate ($FeCO_3$)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
82°F	15 psi	0.16	51.545	-1.13	0.000	-7.50	0.000	1.18	30.476
101°F	24 psi	0.17	54.187	-1.14	0.000	-7.61	0.000	1.28	32.451
119°F	34 psi	0.18	56.250	-1.15	0.000	-7.69	0.000	1.38	34.487
138°F	43 psi	0.18	58.374	-1.16	0.000	-7.75	0.000	1.47	36.277
157°F	53 psi	0.19	60.980	-1.17	0.000	-7.79	0.000	1.55	37.770
175°F	62 psi	0.21	64.301	-1.17	0.000	-7.81	0.000	1.61	38.985
194°F	72 psi	0.22	68.407	-1.18	0.000	-7.83	0.000	1.66	39.950
213°F	81 psi	0.24	73.238	-1.18	0.000	-7.84	0.000	1.70	40.777
231°F	91 psi	0.26	78.634	-1.18	0.000	-7.83	0.000	1.73	41.446
250°F	100 psi	0.29	84.362	-1.18	0.000	-7.82	0.000	1.75	41.931

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales.

Note 3: Saturation Index predictions on this sheet use pH and alkalinity; $\%CO_2$ is not included in the calculations.

ScaleSoftPitzer™
SSP2010

Comments:

Wolfcamp

BAKER HUGHES

Permian Basin Area Laboratory
2101 Market Street,
Midland, Texas 79703

Upstream Chemicals

REPORT DATE: 5/11/2018

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	COG OPERATING LLC	ACCOUNT REP:	LARRY G HINES
DISTRICT:	WATER MANAGEMENT - PERMIAN	SAMPLE ID:	201801021234
AREA/LEASE:	VIKING HELMET STATE	SAMPLE DATE:	4/11/2018
SAMPLE POINT NAME	VIKING HELMET STATE COM 24H	ANALYSIS DATE:	4/16/2018
SITE TYPE:	WELL SITES	ANALYST:	SP
SAMPLE POINT DESCRIPTION:	WELL HEAD		

COG OPERATING LLC, VIKING HELMET STATE, VIKING HELMET STATE COM 24H

FIELD DATA	
Initial Temperature (°F):	250
Final Temperature (°F):	88
Initial Pressure (psi):	100
Final Pressure (psi):	15
pH:	
pH at time of sampling:	6.8

ALKALINITY BY TITRATION:	mg/L	meq/L
Bicarbonate (HCO_3^-):	342.0	5.6
Carbonate (CO_3^{2-}):	ND	
Hydroxide (OH^-):	ND	

aqueous CO_2 (ppm):	220.0
aqueous H_2S (ppm):	0.0
aqueous O2 (ppb):	ND
Calculated TDS (mg/L):	136294
Density/Specific Gravity (g/cm³):	1.0879
Measured Specific Gravity	1.0961
Conductivity (mmhos):	ND
Resistivity:	ND
MCF/D:	No Data
BOPD:	No Data
BWPD:	No Data

ANALYSIS OF SAMPLE — ANIONS:	mg/L	meq/L
Chloride (Cl^-):	80548.2	2272.2
Sulfate (SO_4^{2-}):	1551.7	32.3
Borate (H_3BO_3):	170.8	2.8
Fluoride (F^-):	ND	
Bromide (Br^-):	ND	
Nitrite (NO_2^-):	ND	
Nitrate (NO_3^-):	ND	
Phosphate (PO_4^{3-}):	ND	
Silica (SiO_2):	ND	

ORGANIC ACIDS:	mg/L	meq/L
Formic Acid:	ND	
Acetic Acid:	ND	
Propionic Acid:	ND	
Butyric Acid:	ND	
Valeric Acid:	ND	

CATIONS:	mg/L	meq/L
Sodium (Na^+):	46716.0	2032.9
Potassium (K^+):	887.5	22.7
Magnesium (Mg^{2+}):	684.8	56.4
Calcium (Ca^{2+}):	5224.8	260.7
Strontium (Sr^{2+}):	209.4	4.8
Barium (Ba^{2+}):	0.0	0.0
Iron (Fe^{2+}):	126.5	4.5
Manganese (Mn^{2+}):	3.4	0.1
Lead (Pb^{2+}):	0.0	0.0
Zinc (Zn^{2+}):	0.0	0.0
Aluminum (Al^{3+}):	0.0	0.0
Chromium (Cr^{3+}):	ND	
Cobalt (Co^{2+}):	ND	
Copper (Cu^{2+}):	0.0	0.0
Molybdenum (Mo^{2+}):	0.0	0.0
Nickel (Ni^{2+}):	ND	
Tin (Sn^{2+}):	ND	
Titanium (Ti^{2+}):	ND	
Vanadium (V^{2+}):	ND	
Zirconium (Zr^{2+}):	ND	
Lithium (Li):	ND	
Total Hardness:	16122	N/A

Anion/Cation Ratio: 0.97

ND = Not Determined

SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

Conditions		Barite ($BaSO_4$)		Calcite ($CaCO_3$)		Gypsum ($CaSO_4 \cdot 2H_2O$)		Anhydrite ($CaSO_4$)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
88°F	15 psi		0.000	1.26	69.277	-0.13	0.000	-0.27	0.000
106°F	24 psi		0.000	1.31	70.705	-0.12	0.000	-0.18	0.000
124°F	34 psi		0.000	1.38	72.857	-0.11	0.000	-0.09	0.000
142°F	43 psi		0.000	1.46	75.061	-0.10	0.000	0.00	4.176
160°F	53 psi		0.000	1.54	77.135	-0.10	0.000	0.10	142.433
178°F	62 psi		0.000	1.62	79.035	-0.09	0.000	0.20	260.388
196°F	72 psi		0.000	1.70	80.758	-0.08	0.000	0.30	359.322
214°F	81 psi		0.000	1.78	82.441	-0.08	0.000	0.40	440.907
232°F	91 psi		0.000	1.87	84.028	-0.07	0.000	0.50	507.127
250°F	100 psi		0.000	1.95	85.448	-0.07	0.000	0.61	560.114

Conditions		Celestite ($SrSO_4$)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate ($FeCO_3$)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
88°F	15 psi	0.19	50.203	-1.20	0.000	-7.79	0.000	1.31	61.325
106°F	24 psi	0.20	52.071	-1.21	0.000	-7.88	0.000	1.40	64.099
124°F	34 psi	0.21	53.663	-1.22	0.000	-7.92	0.000	1.51	67.134
142°F	43 psi	0.22	55.383	-1.22	0.000	-7.94	0.000	1.61	69.838
160°F	53 psi	0.23	57.491	-1.23	0.000	-7.95	0.000	1.71	72.110
178°F	62 psi	0.24	60.125	-1.23	0.000	-7.94	0.000	1.79	73.969
196°F	72 psi	0.26	63.318	-1.24	0.000	-7.93	0.000	1.85	75.466
214°F	81 psi	0.28	67.017	-1.24	0.000	-7.91	0.000	1.91	76.785
232°F	91 psi	0.30	71.103	-1.24	0.000	-7.88	0.000	1.97	77.898
250°F	100 psi	0.33	75.415	-1.24	0.000	-7.84	0.000	2.01	78.761

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales

Note 3: Saturation Index predictions on this sheet use pH and alkalinity; $\%CO_2$ is not included in the calculations.

ScaleSoftPitzer™
SSP2010

Comments:

Devonian (Receiving Formation)
Sec 19-19s-32e

8.0 RESERVOIR CHARACTERISTICS

8.1 FORMATION FLUID CHEMISTRY

Following the drilling of the 6-inch open-hole section the injection zone was swabbed and 10 samples were sent to Cardinal Laboratories in Hobbs, NM. The laboratory report and analysis, along with a summary table of the results that depict the concentrations of all analytes is included in Appendix D. The average concentrations for major constituents within the formation water in the entire injection interval are as follows:

Chloride: 23,700 mg/L
TDS: 42,750 mg/L
Diesel Range Organics: 5.7 mg/L
Extended Range Organics: 2.7 mg/L
pH: 6.5
Total Alkalinity: 613 mg/L

The maximum concentrations for major constituents within the formation water in the entire injection interval are as follows:

Chloride: 27,000 mg/L
TDS: 44,700 mg/L
Diesel Range Organics: 20.5 mg/L
Extended Range Organics: 5.6 mg/L
pH: 6.7
Total Alkalinity: 670 mg/L

The results of the formation water analysis support and confirm the conclusions presented from the geophysical logs, mud log, and sidewall cores that the injection zone clearly does not contain recoverable hydrocarbons. Included in Appendix D is Geolex's No Recoverable Hydrocarbon Summary report, which was required by the BLMs COA, and submitted to the BLM and NMOCD.

X.

Log Section Across Proposed Devonian Injection Interval

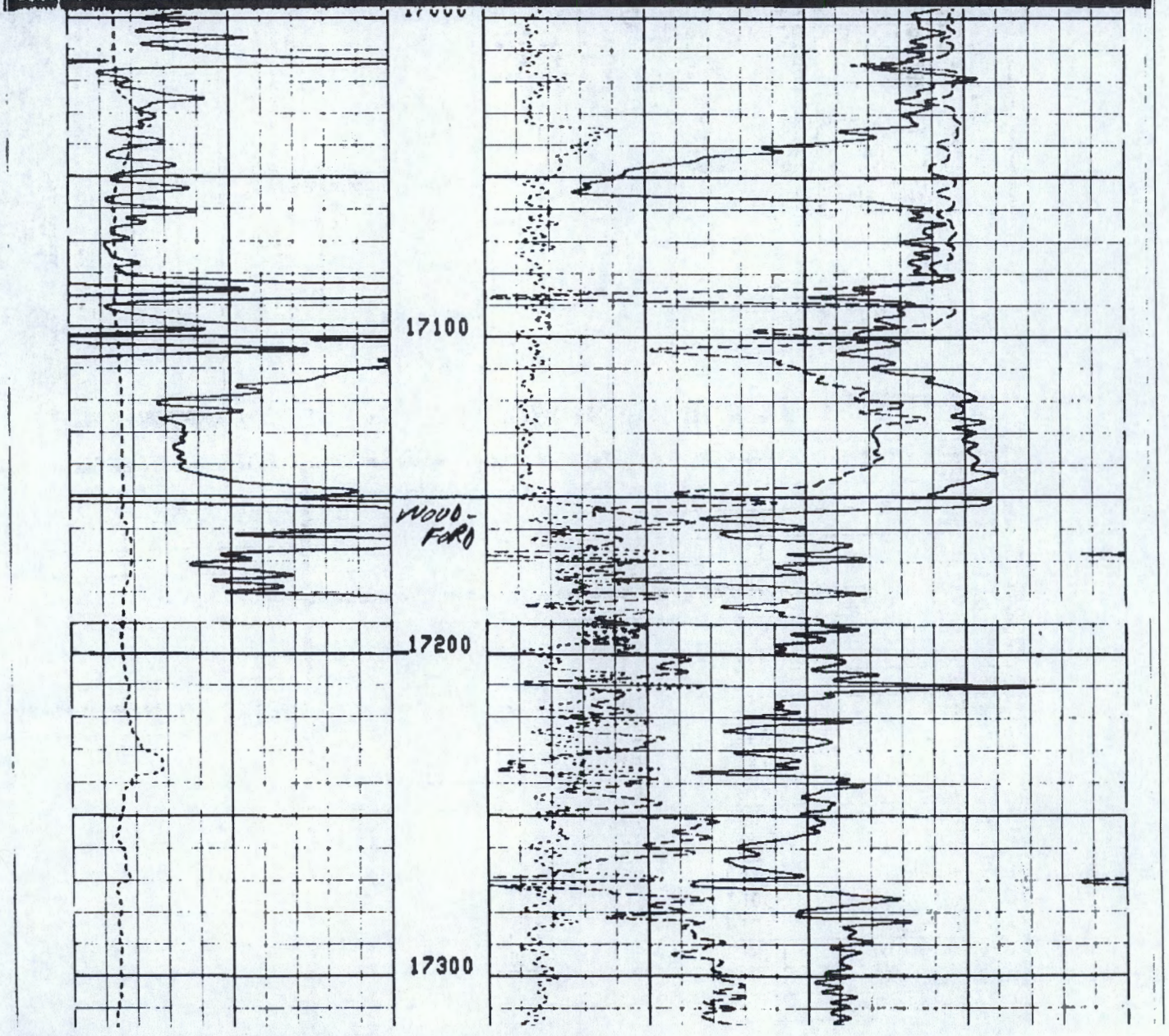
Enter Spring, Standoffs, In-line, or None	Type	BOWSPRING	CALIPER	CALIPER	
	No.	1			
	S. O. — Inches				

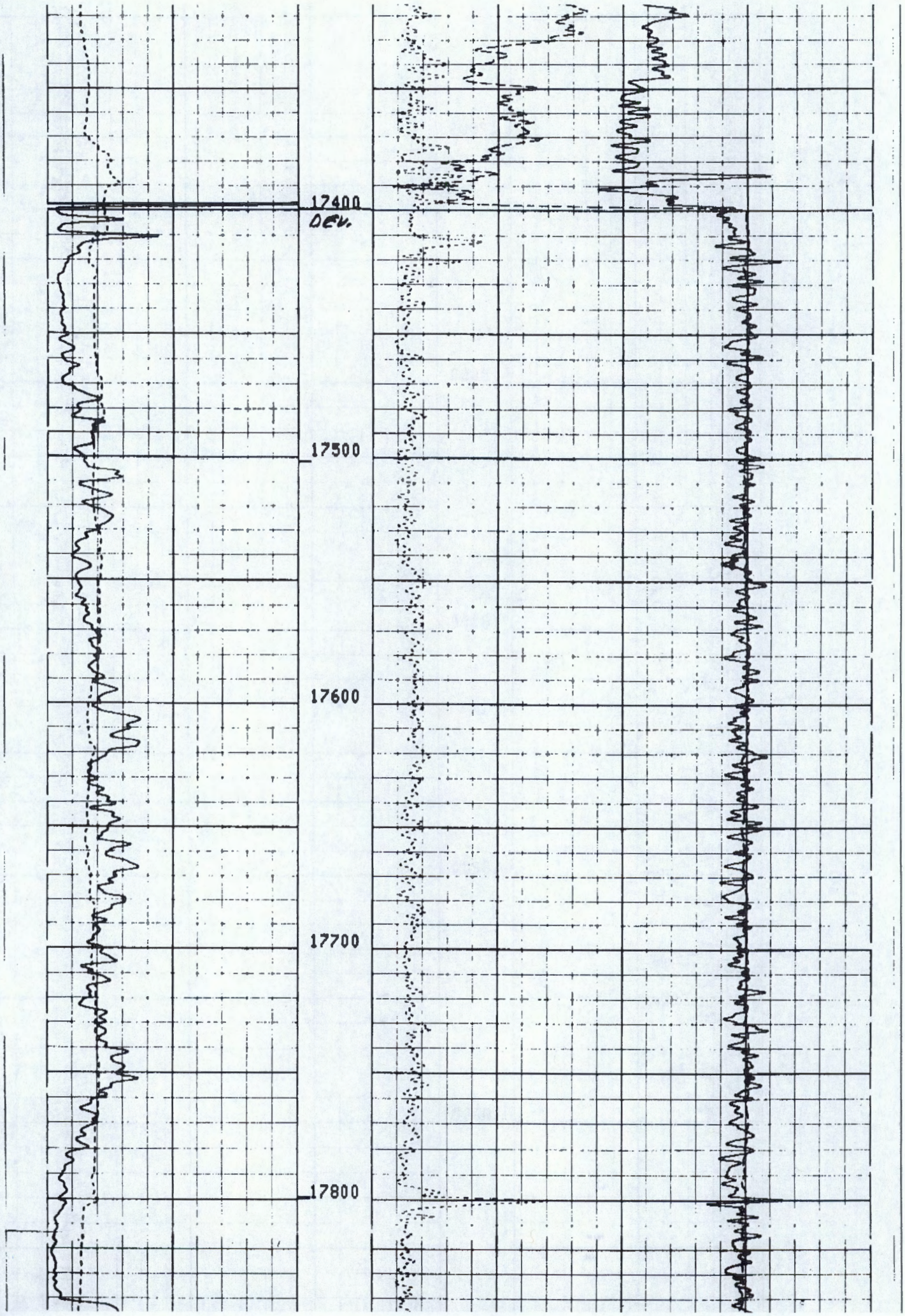
CALIBRATION DATA

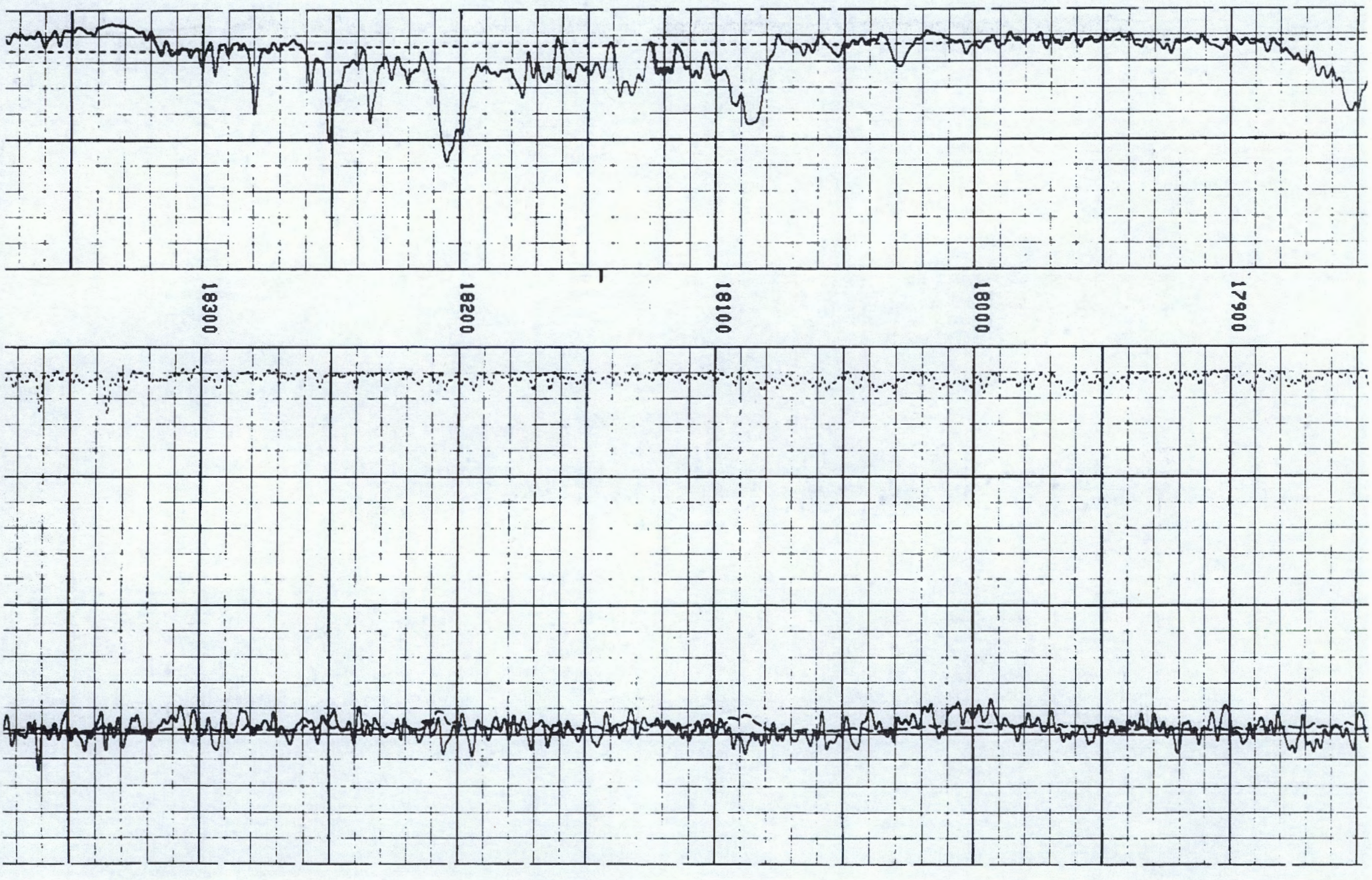
GR	BKG. CPS		SEE CAL	SEE CAL	
	Source CPS		FILM	FILM	
	Sens. - Cal				
	T. C. - Cal				
CNL	Short Spacing - Before Log				
	Long Spacing - Before Log				
	Short Spacing - After Log				
	Long Spacing - After Log				
FDC	P_1 — Before Log				
	P_2 Before Log				
	P After Log				
	P After Log				

LOGGING DATA

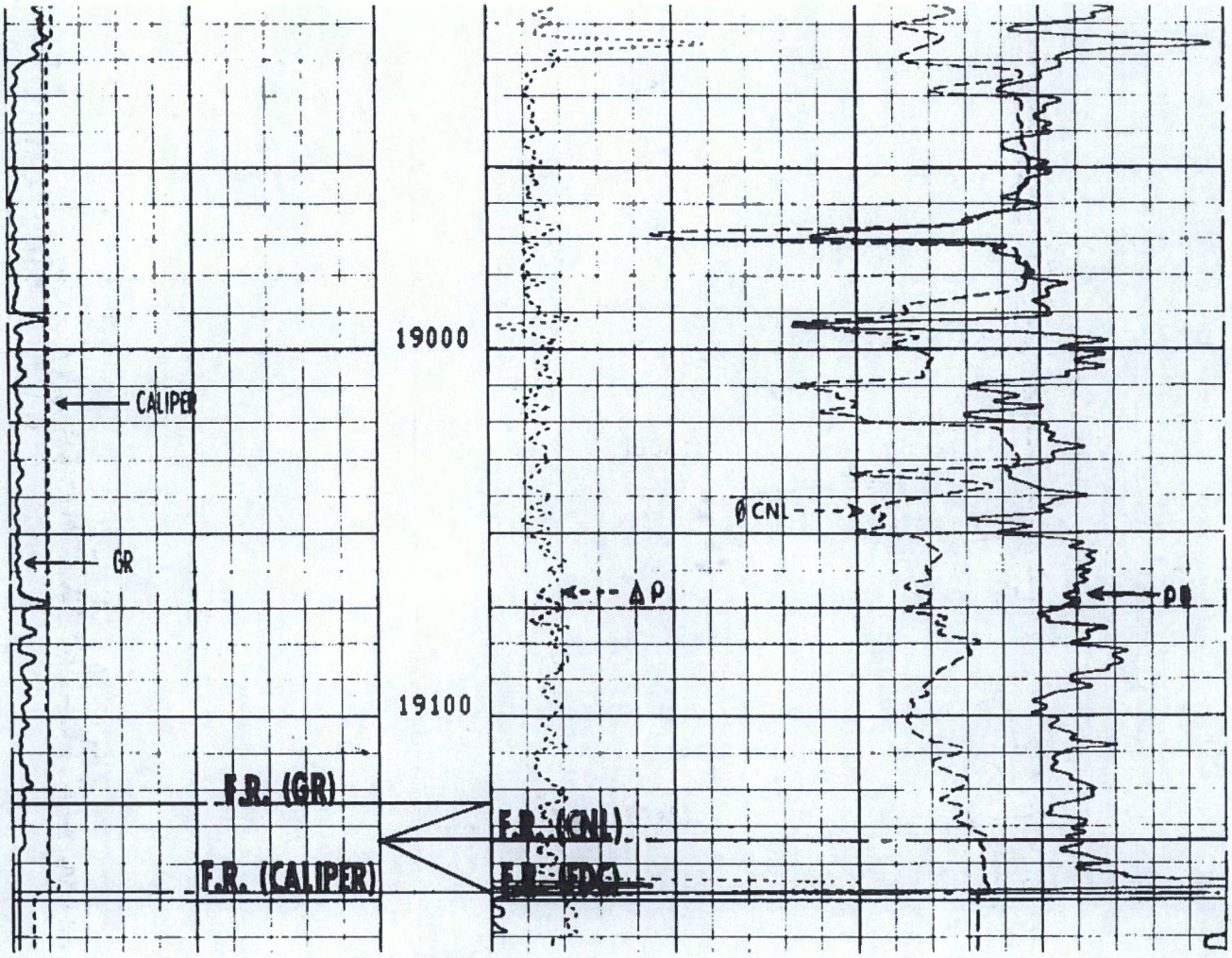
DEPTH		CNP			FDC				GR			
Top	Bottom	Porosity Scale	Matrix	Auto Corr. or Hole Size Setting	Porosity Scale	Grain Density	Liquid Density	Hole Fluid	Sens. Logged	T. C.	Zero Div. Left	Scale Per 100 Div.
5024	12433	30 10	LS OH	AUTO	30 -10	2.71	1.1	LIQ	165		0	100
SURF	5024	30 10	LS OH	AUTO					165		0	100
12433	16817	30 10	LIME	AUTO	30 -10	2.71	1.0	LIQ	100	1'	0	100
16817	19146	30 10	LIME	AUTO	30 -10	2.71	1.0	LIQ	100	1'	0	100




17400
DEV.
17500
17600
17700
17800


18300
18200
18100
18000
17900

18400
18500
18600
FUSSELMAN
18700
18800
18900



FILE

5

		DRHO(G/C3)
		-0.050 0.4500
CALI(IN)		RHOB(G/C3)
6.000 16.00	Run 3	2.000 3.000
GR (GAPI)		NPHI( )
0.0 100.0		0.3000 -0.100

XI.

Fresh Water Sample Analyses

Fresh Water Well NE/4 NW/4 Sec 21-25s-35e

BAKER HUGHES

PERMIAN BASIN AREA LABORATORY
2101 MARKET STREET,
MIDLAND, TEXAS 79703

REPORT DATE: 12/19/2018

PARTIAL WATER ANALYSIS REPORT

CUSTOMER:	COG OPERATING LLC	**ACCOUNT REP:**	LARRY G HINES
DISTRICT:	WATER MANAGEMENT - PERMIAN	**SAMPLE ID:**	201801082546
LEASE/AREA:	WHITE FALCON	**SAMPLE DATE:**	12/12/2018
SAMPLE POINT NAME:	WHITE FALCON SWD	**ANALYSIS DATE:**	12/19/2018
SITE TYPE:	FACILITY	**ANALYST:**	JL
SAMPLE POINT DESCRIPTION:	NOT PROVIDED		

COG OPERATING LLC, WHITE FALCON, WHITE FALCON SWD

FIELD DATA			ANALYSIS OF SAMPLE					
			ANIONS:	mg/L	meq/L	CATIONS:	mg/L	meq/L
Initial Temperature (°F):		250	Chloride (Cl^-):	125.6	3.5	Sodium (Na^+):	447.1	19.5
Final Temperature (°F):		80	Sulfate (SO_4^{2-}):	1345.3	28.0	Potassium (K^+):	15.2	0.4
Initial Pressure (psi):		100	Borate (H_3BO_3):	6.4	0.1	Magnesium (Mg^{2+}):	107.2	8.8
Final Pressure (psi):		15	Fluoride (F^-):	ND		Calcium (Ca^{2+}):	84.7	4.2
			Bromide (Br^-):	ND		Strontium (Sr^{2+}):	3.8	0.1
pH:			Nitrite (NO_2^-):	ND		Barium (Ba^{2+}):	0.0	0.0
pH at time of sampling:		8.7	Nitrate (NO_3^-):	ND		Iron (Fe^{2+}):	0.5	0.0
			Phosphate (PO_4^{3-}):	ND		Manganese (Mn^{2+}):	0.0	0.0
Scale Residual:	ChemUsed	Resid. PPM	Silica (SiO_2):	ND		Lead (Pb^{2+}):	0.0	0.0
	Total PO4					Zinc (Zn^{2+}):	0.0	0.0
Alkalinity by Titration:	mg/L	meq/L						
Bicarbonate (HCO_3^-):	128.0	2.1				Aluminum (Al^{3+}):	0.0	0.0
Carbonate (CO_3^{2-}):	ND					Chromium (Cr^{3+}):	ND	
Hydroxide (OH^-):	ND					Cobalt (Co^{2+}):	ND	
			Organic Acids:	mg/L	meq/L	Copper (Cu^{2+}):	0.0	0.0
aqueous CO_2 (ppm):		0.0	Formic Acid:	ND		Molybdenum (Mo^{2+}):	0.0	0.0
aqueous H_2S (ppm):		0.0	Acetic Acid:	ND		Nickel (Ni^{2+}):	ND	
aqueous O2 (ppb):		ND	Propionic Acid:	ND		Tin (Sn^{2+}):	ND	
			Butyric Acid:	ND		Titanium (Ti^{2+}):	ND	
			Valeric Acid:	ND		Vanadium (V^{2+}):	ND	
Calculated TDS (mg/L):		2264				Zirconium (Zr^{2+}):	ND	
Measured Density/Specific Gravity		1.0022						
Conductivity (mmhos):		ND				Total Hardness:	658	
			Anion/Cation Ratio:		1.02	ND = NOT DETERMINED		

Comments:

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	Well Tag	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y
C 02297	CUB	PLS	3	DINWIDDIE CATTLE CO.	LE	C 02297					2 2 1	21	25S	35E	653436	3555140*
C 02298	CUB	PLS	3	DINWIDDIE CATTLE CO.	LE	C 02298					2 2 1	21	25S	35E	653436	3555140*
C 04020	CUB	EXP	0	BERT MADERA	LE	C 04020 POD2					2 2 2	08	25S	35E	652536	3558322
					LE	C 04020 POD3					4 2 2	08	25S	35E	652531	3558177
					LE	C 04020 POD4					2 4 4	08	25S	35E	652504	3557188
					LE	C 04020 POD5					2 2 2	17	25S	35E	652514	3556680

Permitted as 2000' deep exploration wells. Permit expired 2-28-18

Record Count: 6

PLSS Search:

Section(s): 8, 9, 10, 15, 16, 17, 20, 21, 22 **Township:** 25S **Range:** 35E

Sorted by: File Number

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

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.

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 closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02297	CUB	LE	2	2	1	21	25S	35E	653436	3555140*	300	230	70
C 02298	CUB	LE	2	2	1	21	25S	35E	653436	3555140*	250	205	45

Average Depth to Water: **217 feet**

Minimum Depth: **205 feet**

Maximum Depth: **230 feet**

Record Count: 2

PLSS Search:

Section(s): 8, 9, 10, 15, 16, 17, 20, 21, 22 **Township:** 25S **Range:** 35E

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

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.

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	C 02297	2	2	1	21	25S	35E	653436	3555140*

Driller License: 122 **Driller Company:** UNKNOWN

Driller Name: UNKNOWN

Drill Start Date: **Drill Finish Date:** 12/31/1949 **Plug Date:**

Log File Date: **PCW Rcv Date:** **Source:**

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 3 GPM

Casing Size: 8.00 **Depth Well:** 300 feet **Depth Water:** 230 feet

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

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.

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	C 02298	2	2	1	21	25S	35E	653436	3555140*

Driller License:	122	**Driller Company:**	UNKNOWN		
Driller Name:	UNKNOWN				
Drill Start Date:		**Drill Finish Date:**	12/31/1949	**Plug Date:**	
Log File Date:		**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	4 GPM
Casing Size:	8.00	**Depth Well:**	250 feet	**Depth Water:**	205 feet

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

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.

HOBBS NEWS-SUN
LEGAL NOTICES

COG Operating LLC, 2208 W. Main Street, Artesia, New Mexico, 88210, has filed Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the White Falcon 16 State SWD No. 1, is located 2000' FNL and 2630' FWL, Section 16, Township 25 South, Range 35 East, Lea County, New Mexico. Disposal water will be sourced from area wells producing from the Delaware, Bone Spring and Wolfcamp formations. The disposal water will be injected into the Devonian/Silurian formation at an estimated depth of 17,900' to 20,100' at a maximum surface pressure of 3580 psi and a maximum rate of 40,000 BWPD. The proposed SWD well is located approximately 11 miles west of Jal. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Street, Santa Fe, New Mexico, 87505, within fifteen (15) days of this notice. Any interested party with questions or comments may contact Brian Collins at COG Operating LLC, 2208 W. Main Street, Artesia, New Mexico 88210, or call 575-748-6940.

Published in the Hobbs News-Sun Hobbs, New Mexico
_____, 2018.

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
December 09, 2018
and ending with the issue dated
December 09, 2018.

Publisher

Sworn and subscribed to before me this
9th day of December 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 NOTICES
DECEMBER 9, 2018

COG Operating LLC, 2208 W. Main Street, Artesia, New Mexico, 88210, has filed Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the White Falcon 16 State SWD No. 1, is located 2000' FNL and 2630' FWL, Section 16, Township 25 South, Range 35 East, Lea County, New Mexico. Disposal water will be sourced from area wells producing from the Delaware, Bone Spring and Wolfcamp formations. The disposal water will be injected into the Devonian/Silurian formation at an estimated depth of 17,900' to 20,100' at a maximum surface pressure of 3580 psi and a maximum rate of 40,000 BWPD. The proposed SWD well is located approximately 11 miles west of Jal. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Street, Santa Fe, New Mexico, 87505, within fifteen (15) days of this notice. Any interested party with questions or comments may contact Brian Collins at COG Operating LLC, 2208 W. Main Street, Artesia, New Mexico 88210, or call 575-748-6940.

Published in the Hobbs News-Sun, Hobbs, New Mexico, 2018.
#33509

67112034 00221978

COG OPERATING LLC - ARTESIA
2208 W. MAIN ST.
ARTESIA, NM 88210

CONCHO

February 25, 2019

Oil Conservation Division
Attn: Paul Kautz
1625 North French Dr.
Hobbs, NM 88240

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

Dear Mr. Kautz:

COG Operating LLC respectfully requests administrative approval for authorization to inject for the referenced well. Attached, for your review, is a copy of the C-108 application. Once we receive all the certified return receipts, we will send you a copy.

Our geologic prognosis has the top of the Devonian at 18138' and Fusselman at 19378'. We're permitting the injection interval shallower and deeper than the prognosis just in case the formation tops are different than expected due to the lack of deep well control in this area.

Please do not hesitate to contact me at (575) 748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CORPORATE ADDRESS
ONE CONCHO CENTER | 600 WEST ILLINOIS AVENUE | MIDLAND, TEXAS 79701
P 432.683.7443 | F 432.683.7441

ARTESIA WEST OFFICE
2208 MAIN STREET | ARTESIA, NEW MEXICO 88210
P 575.748.6940 | F 575.746.2096

CONCHO

February 25, 2019

New Mexico Oil Conservation Division
Attn: Phillip Goetze
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

Dear Mr. Goetze:

COG Operating LLC respectfully requests administrative approval for authorization to inject for the referenced well. Attached, for your review, is a copy of the C-108 application. Once we receive all the certified return receipts, we will send you a copy.

Our geologic prognosis has the top of the Devonian at 18138' and Fusselman at 19378'. We're permitting the injection interval shallower and deeper than the prognosis just in case the formation tops are different than expected due to the lack of deep well control in this area.

Please do not hesitate to contact me at (575) 748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CORPORATE ADDRESS
ONE CONCHO CENTER | 600 WEST ILLINOIS AVENUE | MIDLAND, TEXAS 79701
P 432.683.7443 | F 432.683.7441

ARTESIA WEST OFFICE
2208 MAIN STREET | ARTESIA, NEW MEXICO 88210
P 575.748.6940 | F 575.746.2096

CONCHO

February 25, 2019

New Mexico State Land Office
310 Old Santa Fe Trail
Santa Fe, NM 87501

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CORPORATE ADDRESS
ONE CONCHO CENTER | 600 WEST ILLINOIS AVENUE | MIDLAND, TEXAS 79701
P 432.683.7443 | F 432.683.7441

ARTESIA WEST OFFICE
2208 MAIN STREET | ARTESIA, NEW MEXICO 88210
P 575.748.6940 | F 575.746.2096

CONCHO

February 25, 2019

V-F Petroleum, Inc.
500 West Texas Ave., Suite 350
Midland, TX 79701

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

EOG Resources, Inc.
5509 Champions Drive
Midland, TX 79706

RE: **Application For Authorization To Inject**
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

EOG Y Resources
104 South Fourth Street
Artesia, NM 88210

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CORPORATE ADDRESS
ONE CONCHO CENTER | 600 WEST ILLINOIS AVENUE | MIDLAND, TEXAS 79701
P 432.683.7443 | F 432.683.7441

ARTESIA WEST OFFICE
2208 MAIN STREET | ARTESIA, NEW MEXICO 88210
P 575.748.6940 | F 575.746.2096

CONCHO

February 25, 2019

EOG A Resources
104 South Fourth Street
Artesia, NM 88210

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

EOG M Resources
104 South Fourth Street
Artesia, NM 88210

RE: **Application For Authorization To Inject**
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Chisos, LTD
1331 Lamar Street
Houston, TX 77010

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Apache Corporation
2000 Post Oak Boulevard, Suite 100
Houston, TX 77056-4400

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

MRC Permian Co.
5400 Lyndon B. Johnson Freeway, Suite 1500
Dallas, TX 75240

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Matador Production Company
5400 Lyndon B. Johnson Freeway, Suite 1500
Dallas, TX 75240

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Energen Resources Corporation
605 Richard Arrington, Jr. Boulevard
North Birmingham, AL 35203-2707

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CORPORATE ADDRESS
ONE CONCHO CENTER | 600 WEST ILLINOIS AVENUE | MIDLAND, TEXAS 79701
P 432.683.7443 | F 432.683.7441

ARTESIA WEST OFFICE
2208 MAIN STREET | ARTESIA, NEW MEXICO 88210
P 575.748.6940 | F 575.746.2096

CONCHO

February 25, 2019

Marathon Oil Permian LLC
5555 San Felipe Street
Houston, TX 77056

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CORPORATE ADDRESS
ONE CONCHO CENTER | 600 WEST ILLINOIS AVENUE | MIDLAND, TEXAS 79701
P 432.683.7443 | F 432.683.7441

ARTESIA WEST OFFICE
2208 MAIN STREET | ARTESIA, NEW MEXICO 88210
P 575.748.6940 | F 575.746.2096

CONCHO

February 25, 2019

Prime Rock Resources Asset Co, LLC
203 West Wall Street, Suite 1000
Midland, TX 79701

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Franklin Mountain Energy 2 LLC
123 West Mills Avenue, Suite 600
El Paso, TX 79901

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CORPORATE ADDRESS
ONE CONCHO CENTER | 600 WEST ILLINOIS AVENUE | MIDLAND, TEXAS 79701
P 432.683.7443 | F 432.683.7441

ARTESIA WEST OFFICE
2208 MAIN STREET | ARTESIA, NEW MEXICO 88210
P 575.748.6940 | F 575.746.2096

CONCHO

February 25, 2019

Bone Springs Resources, LLC
22318 Branson Road
Poteau, OK 74953

RE: **Application For Authorization To Inject**
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

MJM Energy Interests, LLC
1621 Central Avenue
Cheyenne, WY 82001

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Energex, LLC
4425 98th Street, Suite 200
Lubbock, TX 79424

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Chevron U.S.A. Inc.
1400 Smith Street
Houston, Texas 77002

RE: **Application For Authorization To Inject**
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Chevron USA Inc.
15 Smith Road
Midland, TX 79705

RE: **Application For Authorization To Inject**
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

Santo Petroleum, LLC
101 S. 4th Street, Suite B
Artesia, NM 88210

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures

CONCHO

February 25, 2019

One Energy Partners Operating, LLC
2929 Allen Parkway, Suite 200
Houston, TX 77019

RE: Application For Authorization To Inject
White Falcon 16 State SWD #1
2000' FNL, 2630' FWL
Unit F, Section 16, Township 25 South, Range 35 East, N.M.P.M.
Lea County, New Mexico

To Whom It May Concern:

Enclosed for your review is a copy of COG Operating LLC's C-108 Application to Inject for the above referenced well. We plan to drill this well for SWD service if our C-108 is approved. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as the surface owner or an affected person within a one mile radius area of review. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter.

Please do not hesitate to contact us at 575-748-6940 should you have any questions.

Sincerely,

Brian Collins
Facilities Engineering Advisor

BC/mv
Enclosures