

RECEIVED: 02/20/2019	REVIEWER:	TYPE: SWD	APP NO: pMAM1911655129
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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: Percussion Petroleum Operating, LLC _____ **OGRID Number:** 371755 _____
Well Name: Osage Boyd 15 SWD No. 2 _____ **API:** 30-015-28599 _____
Pool: SWD; Cisco-Canyon _____ **Pool Code:** 96186 _____

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

1) **TYPE OF APPLICATION:** Check those which apply for [A] SWD-2074

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

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

FOR OCD ONLY

- ☐ Notice Complete

☐ Application Content Complete

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.

February 14, 2019

Ramona Hovey – Agent of Percussion Petroleum Operating, LLC _____ Date

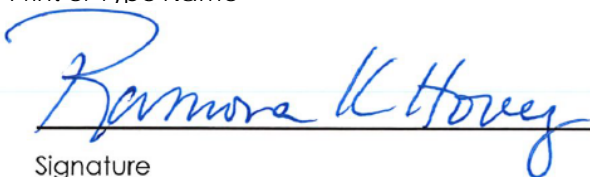
Print or Type Name

(512) 600-1777

Phone Number

ramona@lonquist.com

e-mail Address


 Signature

LONQUIST & CO. LLC

PETROLEUM
ENGINEERS

ENERGY
ADVISORS

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

February 14, 2019

New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division District IV
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
(505) 476-3440

RE: OSAGE BOYD 15 SWD NO. 2 AUTHORIZATION TO INJECT

To Whom It May Concern:

Attached for your review is Form C-108, Application for Authorization to Inject, and its supplemental documents prepared for Percussion Petroleum Operating, LLC's ("Percussion") Osage Boyd 15 SWD No. 2. In addition, Forms C-101 and C-102 have also been included with this package. Notices have been sent to offset, operators, leaseholders and the surface owner. Proof of notice will be sent to the OCD upon receipt.

Any questions should be directed towards Percussion Petroleum Operating, LLC's agent Lonquist & Co., LLC.

Regards,



Ramona Hovey
Sr. Petroleum Engineer
Lonquist & Co., LLC

(512) 600-1777
ramona@lonquist.com

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage
Application qualifies for administrative approval? X Yes No
- II. OPERATOR: Percussion Petroleum, LLC
ADDRESS: 919 Milam St. Suite 2475
CONTACT PARTY: Ryan Barber PHONE: 713-518-1331
- 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: Ramona Hovey TITLE: Consulting Engineer – Agent for Percussion Petroleum
SIGNATURE: Ramona Hovey DATE: 2/14/2019
E-MAIL ADDRESS: ramona@lonquist.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: _____

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.

INJECTION WELL DATA SHEET

OPERATOR: Percussion Petroleum Operating, LLCWELL NAME & NUMBER: Osage Boyd 15 SWD No. 2WELL LOCATION: 1,650 FSL 1,980 FWL
FOOTAGE LOCATIONK
UNIT LETTER15
SECTION19S
TOWNSHIP25E
RANGEWELLBORE SCHEMATICWELL CONSTRUCTION DATASurface CasingHole Size: 13.750"Casing Size: 9.625"Cemented with: 950 sx.**or** _____ ft³Top of Cement: surfaceMethod Determined: circulationProduction CasingHole Size: 8.750"Casing Size: 7.000"Cemented with: 1,320 sx.**or** _____ ft³Top of Cement: surfaceMethod Determined: circulationLinerHole Size: 6.125"Casing Size: 4.500"Cemented with: 175 sx.**or** _____ ft³Top of Cement: 7,800'Method Determined: calculationTotal Depth: 9,600'Injection Interval7,620 feet to 8,060 feet

(Perforated Interval)

INJECTION WELL DATA SHEET

Tubing Size: 3.5" IPC, 9.3 lb/ft, L-80, Upset, from 0' – 7,520'

Lining Material: Internal Plastic Coated (IPC)

Type of Packer: 7" X 2-7/8" Non-permanent Nickle Plated Packer with 2-7/8" x 3.5" crossover at packer

Packer Setting Depth: 7,520'

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?

(1.) Upper Pennsylvanian, North, oil production from 8/22/1996 - 9/8/1999

(2.) Re-entry into Morrow, gas production from 9/8/1999 - Present

2. Name of the Injection Formation: Cisco-Canyon

3. Name of Field or Pool (if applicable): SWD; Cisco-Canyon 96186

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.

7627'-7630' (Cisco/Canyon): 6/5/1996 w/ 4" gun 2 jspf (LDT/CNL)

7660'-7665' (Cisco/Canyon): 6/3/1996 w/ 4" gun 2 jspf (LDT/CNL)

7667'-7669' (Cisco/Canyon): 6/3/1996 w/ 4" gun 2 jspf (LDT/CNL)

7671'-7710' (Cisco/Canyon): 6/3/1996 w/ 4" gun 2 jspf (LDT/CNL)

7722'-7726' (Cisco/Canyon): 6/3/1996 w/ 4" gun 2 jspf (LDT/CNL)

7746'-7753' (Cisco/Canyon): 6/1/1996 w/ 4" gun 4 jspf

7772'-7786' (Cisco/Canyon): 6/1/1996 w/ 4" gun 4 jspf

7791'-7818' (Cisco/Canyon): 6/1/1996 w/ 4" gun 4 jspf

Cement squeeze from 7,627' – 7,818' before re-entry down to Morrow (8/21/1999)

9088'-9092' (Morrow): 9/27/2005, 4spf, 0 deg phasing
9126'-9138' (Morrow): 9/27/2005, 4spf, 0 deg phasing
9146'-9156' (Morrow): 9/27/2005, 4spf, 0 deg phasing
9170'-9186' (Morrow): 9/27/2005, 4spf, 0 deg phasing
9204'-9216' (Morrow): 9/27/2005, 4spf, 0 deg phasing
9220'-9228' (Morrow): 9/27/2005, 4spf, 0 deg phasing
9248'-9252' (Morrow): 9/27/2005, 4spf, 0 deg phasing

Proposed SWD wellbore will contain cast iron bridge plug @ 9,038' with 25 sacks of cement on top

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

Glorieta: 2,345'

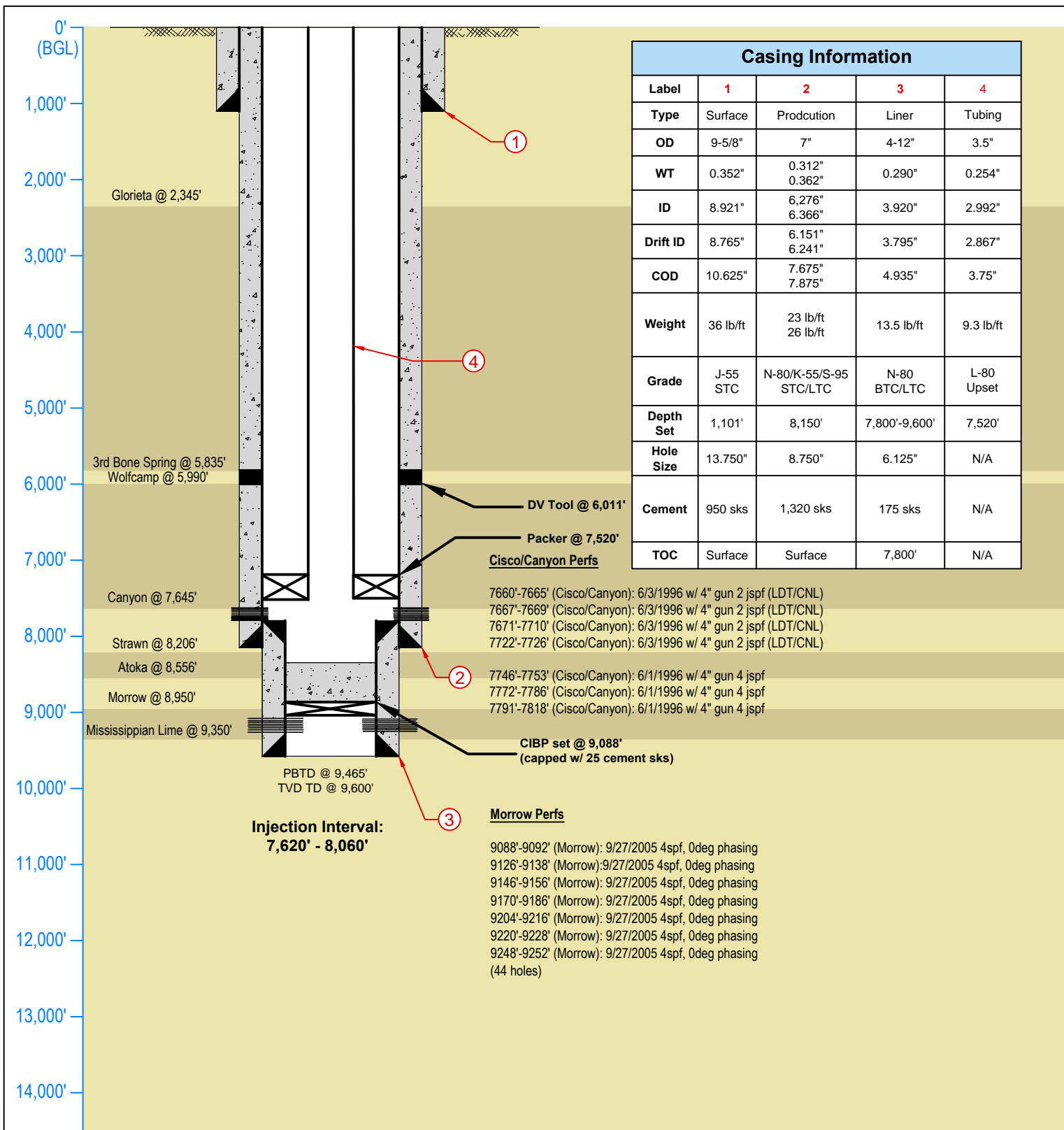
3rd Bone Spring: 5,835'

Wolfcamp: 5,990'

Strawn: 8,206'

Atoka: 8,556'

Morrow: 8,950'



LONQUIST

FIELD SERVICE

AUSTIN HOUSTON WICHITA CALGARY

Percussion Petroleum Operating, LLC

Osage Boyd 15 SWD No. 2 (Proposed)

Country: USA

State/Province: New Mexico

County/Parish: Eddy

Location: 1,650' FSL, 1,980' FWL

Site:

Status: Morrow Gas Producer

Survey/STR: S-15 T-19S R-25E

Field: SWD; Cisco-Canyon (96186)

Serial No:

Texas License F-8952

Well API No: 30-015-28599

Project No: 1901

Date: 2/13/2019

3345 Bee Cave Road, Suite 201
Austin, Texas 78746
Tel: 512.732.9812
Fax: 512.732.9816

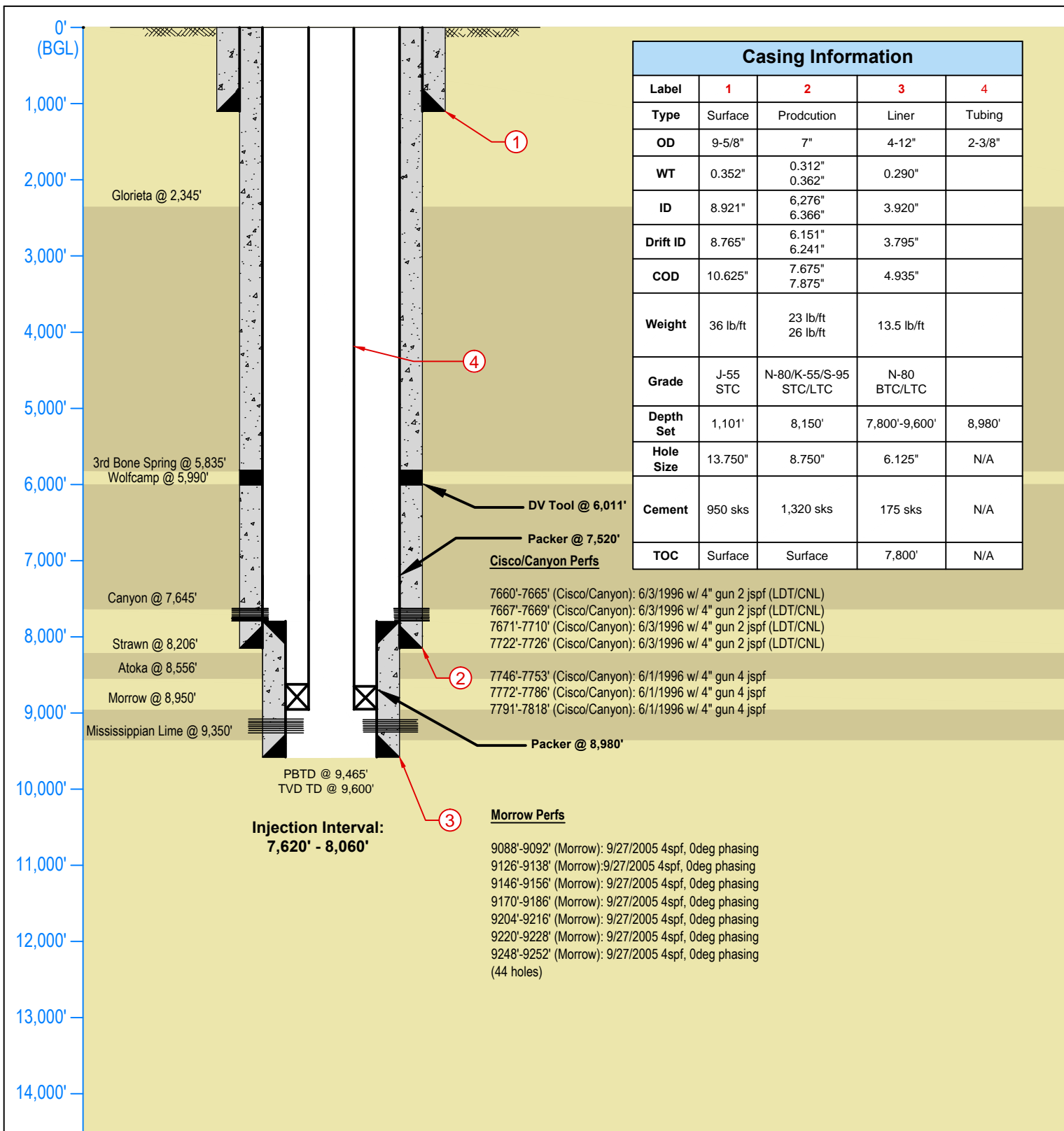
Drawn: TFM

Reviewed:

Approved:

Rev No: 1

Notes: Configuration to change from Morrow gas producer to Cisco-Canyon SWD



LONQUIST

FIELD SERVICE

AUSTIN HOUSTON WICHITA CALGARY

Percussion Petroleum Operating, LLC

Osage Boyd 15 SWD No. 2 (Existing)

Country: USA

State/Province: New Mexico

County/Parish: Eddy

Location: 1,650' FSL, 1,980' FWL

Site:

Status: Morrow Gas Producer

Survey/STR: S-15 T-19S R-25E

Field: SWD; Cisco-Canyon (96186)

Serial No:

Texas License F-8952

Well API No: 30-015-28599

Project No: 1901

Date: 2/13/2019

3345 Bee Cave Road, Suite 201
Austin, Texas 78746
Tel: 512.732.9812
Fax: 512.732.9816

Drawn: TFM

Reviewed:

Approved:

Rev No: 1

Notes: Configuration to change from Morrow gas producer to Cisco-Canyon SWD



Percussion Petroleum Operating, LLC

Osage Boyd 15 SWD No. 2

FORM C-108 Supplemental Information

III. Well Data

A. Wellbore Information

1.

Well information	
Lease Name	Osage Boyd 15 SWD
Well No.	2
Location	S-15 T-19S R-25E
Footage Location	1,650' FSL & 1,980' FWL

2.

a. Wellbore Description

Casing Information			
Type	Surface	Production	Liner
OD	9.625"	7.000"	4.5"
WT	0.352"	0.317", 0.362"	0.290"
ID	8.921"	6.276", 6.366"	3.920"
Drift ID	8.765"	6,151", 6.241"	3.795"
COD	10.625"	7.675", 7.875"	4.935"
Weight	36 lb/ft	23 & 26 lb/ft	13.5 lb/ft
Grade	J-55 STC	N-80/K-55/S-95 STC/LTC	N-80 BTC/LTC
Hole Size	13.75"	8.75"	6.125"
Depth Set	1,101'	8,150'	7,800'-9,600'

b. Cementing Program

Cement Information			
Casing String	Conductor	Production	Liner
Cement Type	-	-	Class H
Lead Cement Volume	-	-	175 sx
Total Volume	950 sks	1,320 sks	175 sks
TOC	Surface	Surface	7,800'
Method	Circulate to Surface	Circulate to Surface	Logged

3. Tubing Description

Tubing Information	
OD	3.5"
WT	0.254"
ID	2.992"
Drift ID	2.867"
COD	3.75"
Weight	9.3 lb/ft
Grade	L-80 Upset
Depth Set	0-7,520'

Tubing will be Internal Plastic Coated (IPC)

4. Packer Description

7" X 2-7/8" Non-permanent Nickle Plated Packer with 2-7/8" x 3.5" crossover at packer

B. Completion Information

1. Injection Formation: Cisco/Canyon
2. Gross Injection Interval: 7,620' - 8,060'

Completion Type: Perforated interval

3. Originally drilled as an oil producer in Upper Pennsylvanian, North from 8/22/1996 - 9/8/1999. Re-entry into Morrow, gas production from 9/8/1999 - Present
4. See the attached wellbore schematic.
5. Oil and Gas Bearing Zones within area of well:

Formation	Depth
Glorieta	2,345'
3 rd Bone Spring	5,835'
Wolfcamp	5,990'
Strawn	8,206'
Atoka	8,556'
Morrow	8,950'

VI. Area of Review

Two (2) wells within a 1-mile radius penetrate the proposed Cisco-Canyon injection zone. They are both active saltwater disposal wells. There are no plugged wells in the proposed injection zone within a 1-mile radius. According to the New Mexico Oil Conservation Division, currently active wells include:

- Dagger Draw SWD #001 (API: 30-015-25003)
- Osage Boyd 15 SWD #001 (API: 30-015-28992)

VII. Proposed Operation Data

1. Proposed Daily Rate of Fluids to be Injection:

Average Volume: 8,500 BPD

Maximum Volume: 10,000 BPD

2. Closed System

3. Anticipated Injection Pressure:

Average Injection Pressure: 1,143 PSI (surface pressure)

Maximum Injection Pressure: 1,524 PSI (surface pressure)

4. The injection fluid is to be locally produced water. It is expected that the source water will predominantly be from the Glorieta-Yeso, Bone Spring, Pennsylvanian, and Morrow formations. Attached are produced water sample analyses taken from offset wells that feature samples from the Artesia, Bone Spring, Cisco, Glorieta-Yeso, Grayburg/San Andreas, Morrow, Pennsylvanian, San Andreas/Yeso, and Wolfcamp formations.

5. The disposal interval is non-productive. No water samples are available from the surrounding area within a 1-mile AOR.

VIII. Geological Data

Cisco Formation Lithology

The Cisco Formation is an Upper Pennsylvanian (Virgilian) carbonate reservoir that occurs below the Wolfcamp and above the Strawn formation in the Northwest Shelf of the Permian Basin. Reservoirs formed in the Northwest Shelf were created in shallow-water ramp structures across North Eddy County. Sediments in the Cisco are dominated by carbonates and shales. The carbonate architecture on the Northwest shelf is represented by large-scale, asymmetric, sigmoidal clinoforms. The Northwest Shelf has been known to be much more dolomitized than the equivalent succession in the rest of the Permian Basin, several types of dolomite are potentially present in this specific region of the Northwest Shelf. Generalized distribution of this formation has included beach grainstones and lagoonal mudstones and packstones. With algal boundstone restricting migration, dolomitized fusulinid and crinoid wackestone-grainstone create reservoirs with optimal porosity and permeability. These characteristics allow for this formation to be a receptive saltwater disposal horizon.

Canyon Formation Lithology

The Canyon Formation is a Missourian carbonate deposited over preexisting shelves and platforms around basin margins. On the Northwest Shelf, the Canyon sequence is characterized by aggradation and progradation as this region of the Permian Basin was known to form in a platform to ramp structure in shallow water. The Canyon formation rests beneath the Cisco formation in the northern region of Eddy County. The Strawn is the lower confining layer for the proposed Osage Boyd 15 SWD No. 2. Facies such as phylloid-algal-dominated bioherms and ooid grainstones create sound carbonate reservoirs in the Canyon formation. This carbonate reservoir provides an ideal horizon that is potentially prolific and compatible for disposal.

A. Injection Zone: Cisco-Canyon Formation

Formation	Depth
Glorieta	2,345'
3 rd Bone Spring	5,835'
Wolfcamp	5,990'
Canyon	7,645'
Strawn	8,206'
Atoka	8,556'
Morrow	8,950'
Mississippian Lime	9,350'

B. Underground Sources of Drinking Water

Three (3) water wells exist within one mile of the proposed well. Across the area, fresh water wells are usually drilled between 100' and 500' in depth. Water depths range from 42' – 310'. Surface casing has previously been set to protect against USDW at 1,101'.

IX. Proposed Stimulation Program

Percussion plans to perforate optimal intervals determined by log analysis and acidize the new perforations with 110 barrels of 15% NEFE acid.

X. Logging and Test Data on the Well

Within the Oil Conservation Division's online files, the OCD possesses the following logs:

1. Compressed neutron, Litho-Density, Gamma Ray
2. Laterolog-Micro CFL, Gamma Ray
3. Gamma Ray, Spectroscopy
4. Sonic, Gamma Ray
5. Azimuthal Laterolog, Micro-CFL/NGT

XI. Chemical Analysis of Fresh Water Wells

Attached is a map of three (3) water wells that exist within one mile of the well location. Samples from the well will be obtained and analysis results will be provided as soon as possible. A Water Right Summary from the New Mexico Office of the State Engineer is attached for water well RA-02909, RA-05450 and RA-05900.

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 and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address Percussion Petroleum Operating, LLC 919 Milam St., Suite 2475 Houston, TX 77002		² OGRID Number 371755 ³ API Number 30-015-28599
⁴ Property Code	⁵ Property Name Osage Boyd 15	⁶ Well No. 2

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
K	15	19S	25E		1650	S	1980	W	Eddy

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

⁹ Pool Information

Pool Name SWD: Cisco-Canyon	Pool Code 96186
--------------------------------	--------------------

Additional Well Information

¹¹ Work Type	¹² Well Type	¹³ Cable/Rotary	¹⁴ Lease Type	¹⁵ Ground Level Elevation 3457
¹⁶ Multiple	¹⁷ Proposed Depth	¹⁸ Formation	¹⁹ Contractor	²⁰ Spud Date
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

²¹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Old Surf.	14-3/4"	9-5/8"	36	1101'	950 sx	Surface
Old Int.	8-3/4"	7"	26 & 23	8150'	1320 sx	Surface
Old. Liner	6-1/8"	4-1/2"	13.5	9580'	175 sx	7805'

Casing/Cement Program: Additional Comments


Propose to convert to SWD in the Cisco-Canyon interval. Set CIBP above Morrow perms, perf and acidize Cisco-Canyon, set packer and tubing, and perform SRT.

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular & rams	5000 psi	3500 psi	TBD

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.

Signature: 

Printed name: Ryan Barber

Title: Petroleum Engineer

E-mail Address: ryan@percussionpetroleum.com

Date: 2/13/19

Phone: 979-292-6279

OIL CONSERVATION DIVISION

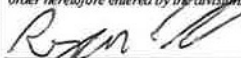

Approved By:

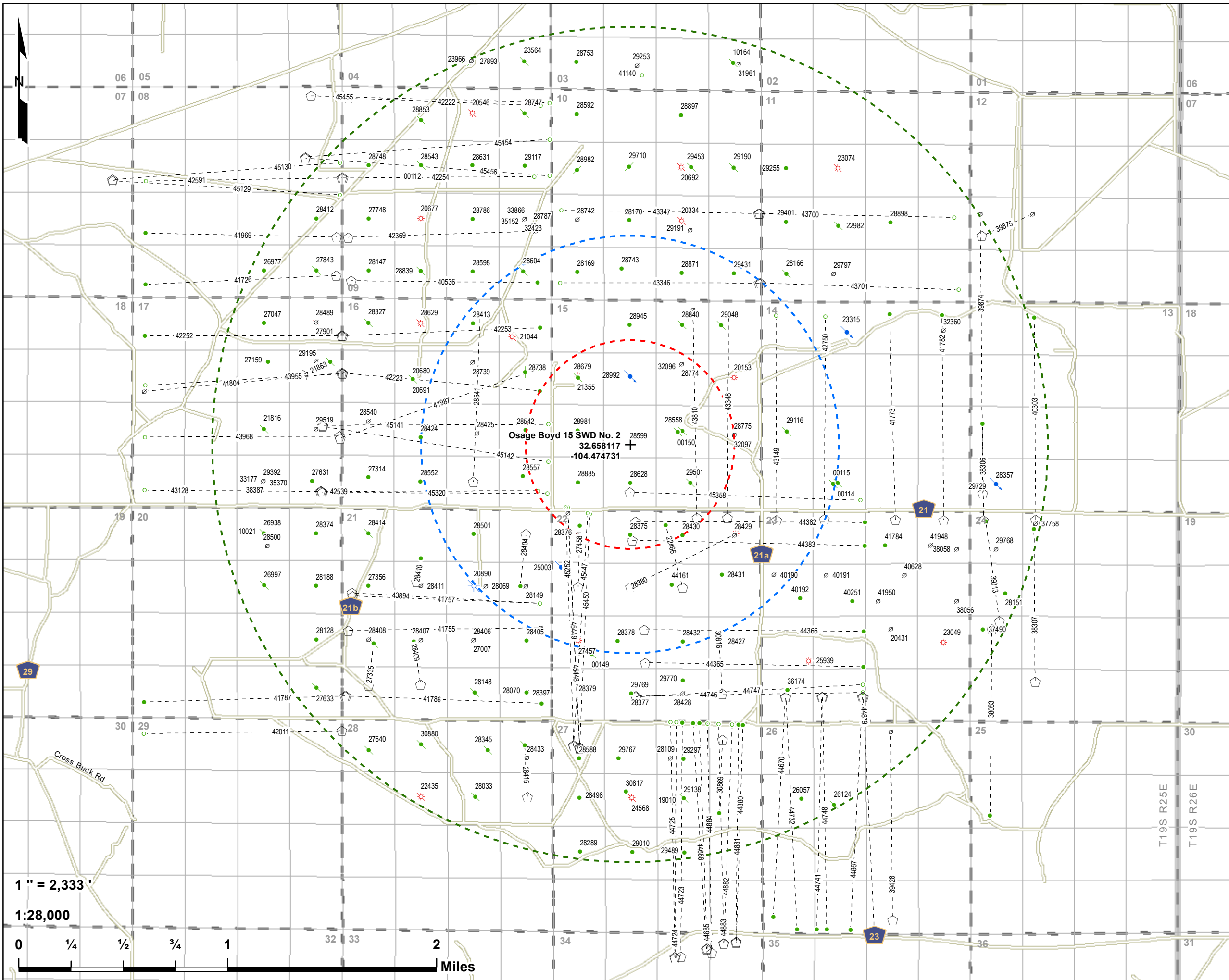
Title:

Approved Date:

Expiration Date:

Conditions of Approval Attached

16			
			<p>17 OPERATOR CERTIFICATION</p> <p><i>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.</i></p> <div style="display: flex; justify-content: space-between;"> <div>  Signature </div> <div> 2/13/19 Date </div> </div> <p>Ryan Barber Printed Name</p> <p>ryan@percussionpetroleum.com E-mail Address</p>
1980'			<p>18 SURVEYOR CERTIFICATION</p> <p><i>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.</i></p> <p>July 28, 1995 Date of Survey</p> <p>Signature and Seal of Professional Surveyor: Dan Reddy</p>
	1650'		<p>NM Cert. No. 5412 Certificate Number</p>



Osage Boyd 15 SWD No. 2
2 Mile Area of Review
Percussion Petroleum Operating LLC
Eddy County, NM

PCS: NAD 1983 SPCS NM-E FIPS 3001 (US Ft.)
Drawn by: SJL Date: 2/14/2019 Approved by: TFM

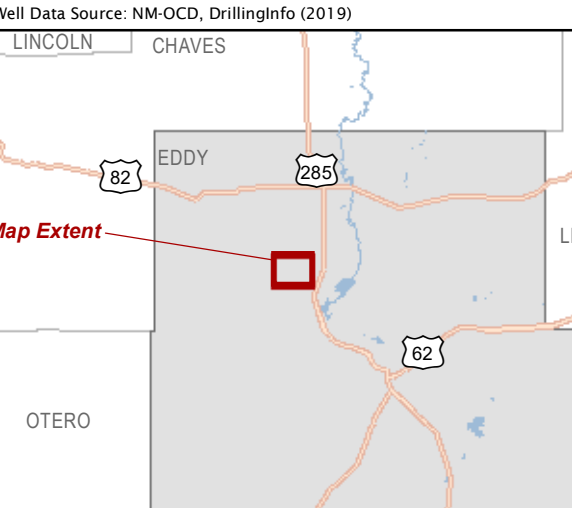
LONQUIST & CO. LLC

**PETROLEUM
ENGINEERS**

**ENERGY
ADVISORS**

AUSTIN · HOUSTON · WICHITA · DENVER · CALGARY

- + Osage Boyd 15 SWD No. 2
 - 1/2 Mile Radius
 - 1 Mile Radius
 - 2 Mile Radius
 - QQ-Section (NM-PLSS 2nd Div.)
 - Section (NM-PLSS 1st Div.)
 - Township/Range (NM-PLSS)
 - Laterals
- API (30-015-...) SHL Status - Type (Count)**
- Horizontal Surface Location (88)
 - Active - Oil (68)
 - Active - Gas (6)
 - Active - Salt Water Disposal (4)
 - Permitted - Oil (1)
 - Permitted - Miscellaneous (1)
 - Approved TA - Oil (1)
 - Plugged (Not Released) - Oil (3)
 - Plugged (Site Released) - Oil (37)
 - Plugged (Site Released) - Gas (9)
 - Plugged (Site Released) - Salt Water Disposal (1)
 - Canceled Location (51)
- API (30-015-...) BHL Status - Type (Count)**
- Active - Oil (38)
 - Active - Gas (1)
 - Permitted - Oil (37)
 - Plugged (Site Released) - Oil (3)
 - Canceled Location (9)



Osage Boyd 15 SWD No 2
1 Mile Area of Review List

API (30-015-...)	WELL NAME	WELL TYPE	STATUS	OPERATOR	TVD (FT.)	LATITUDE (NAD83 DD)	LONGITUDE (NAD83 DD)	SPUD DATE	FIELD
00115	PRE-ONGARD WELL #002	O	P	PRE-ONGARD WELL OPERATOR	790	32.6554146000	-104.458046000	3/22/1952	
00150	PRE-ONGARD WELL #001	O	P	PRE-ONGARD WELL OPERATOR	NR	32.6590004000	-104.470832800	NR	
20153	BOYD BN COM #001	G	A	EOG Y RESOURCES, INC.	9416	32.6627655000	-104.466171300	7/17/1968	[72840] BOYD, MORROW (GAS)
21044	NDUP UNIT #001	G	P	EOG Y RESOURCES, INC.	9370	32.6655960000	-104.484428400	7/6/1995	[15472] DAGGER DRAW, UPPER PENN, NORTH; [72840] BOYD, MORROW (GAS)
21355	OSAGE BOYD COM #001	G	P	NEARBURG PRODUCING CO	9256	32.6628494000	-104.479049700	9/30/1974	[15472] DAGGER DRAW, UPPER PENN, NORTH; [72840] BOYD, MORROW (GAS)
22466	B & B #001	O	A	PERCUSSION PETROLEUM OPERATING, LLC	9484	32.6481857000	-104.470390300	9/28/2006	[15472] DAGGER DRAW, UPPER PENN, NORTH; [96065] WC, GLORIETA-YESO; [97565] N. SEVEN RIVERS, GLORIETA-YESO
25003	DAGGER DRAW SWD #001	S	A	TACTICAL OIL & GAS, LLC	8128	32.6495667000	-104.480384800	10/9/1984	[96186] SWD, CISCO-CANYON; [97565] N. SEVEN RIVERS, GLORIETA-YESO
27457	ROSS RANCH 22 #001	G	A	PERCUSSION PETROLEUM OPERATING, LLC	9444	32.6444740000	-104.478935200	8/8/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [74640] CEMETARY, MORROW (GAS)
27458	ROSS RANCH 22 #002	O	A	PERCUSSION PETROLEUM OPERATING, LLC	7330	32.6482239000	-104.478965800	10/3/1994	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28069	ARROYO 21 #001	O	C	NEARBURG PRODUCING CO	0	32.64825019040	-104.48656035200	-	
28149	ALTO AOL COM #001	O	C	EOG Y RESOURCES, INC.	0	32.6482417570	-104.483263171	-	
28169	POLO AOP FEDERAL #003	O	A	EOG Y RESOURCES, INC.	5554	32.6701088000	-104.479087800	7/15/1995	[15472] DAGGER DRAW, UPPER PENN, NORTH; [98068] WC-015 G-01 S192510M, BONE SPRING
28375	ROSS RANCH 22 #003	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8065	32.65183640000	-104.47470090000	12/15/2009	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28376	ROSS RANCH 22 #005	O	C	NEARBURG PRODUCING CO	0	32.6518550541	-104.478979964	-	
28378	ROSS RANCH 22 #007	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8225	32.64446260000	-104.47572330000	4/23/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH; [96542] WILDCAT, GRANITE; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28380	ROSS RANCH 22 #004	G	A	PERCUSSION PETROLEUM OPERATING, LLC	8190	32.6482048000	-104.474670400	3/27/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28404	RODKE AOY #001	O	A	EOG Y RESOURCES, INC.	8885	32.6518707000	-104.483276400	8/25/2000	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28413	APAREJO APA STATE #003	O	A	EOG Y RESOURCES, INC.	8286	32.6665192000	-104.487648000	3/31/1995	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28425	BOYD X STATE COM #009	O	C	EOG Y RESOURCES, INC.	0	32.65886199250	-104.48731289000	-	[15472] DAGGER DRAW, UPPER PENN, NORTH
28429	B & B #003	O	C	NEARBURG PRODUCING CO	0	32.6517984692	-104.466131298	-	
28430	B&B 22 SWD #001	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8200	32.6518173000	-104.470413200	1/3/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH; [96186] SWD, CISCO-CANYON
28431	B & B #007	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8164	32.6490822000	-104.467178300	5/17/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28432	B & B #009	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8280	32.64444350000	-104.47037510000	2/21/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH; [96542] WILDCAT, GRANITE; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28501	ROSS EG FEDERAL #014	O	A	EOG Y RESOURCES, INC.	8350	32.6518822000	-104.487571700	9/10/1995	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28541	BOYD X STATE #010	O	A	EOG Y RESOURCES, INC.	8340	32.6555099000	-104.487594600	12/23/1995	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28542	AMOLE AMM STATE COM #004	O	A	EOG Y RESOURCES, INC.	8230	32.6591301000	-104.483322100	3/4/1998	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28557	BOYD X STATE #011	O	A	EOG Y RESOURCES, INC.	8350	32.6559143000	-104.483528100	12/14/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28558	BOYD BN #002	O	P	EOG Y RESOURCES, INC.	8350	32.6590767000	-104.470443700	9/1/1995	[15472] DAGGER DRAW, UPPER PENN, NORTH
28599	OSAGE BOYD 15 #002	O	A	PERCUSSION PETROLEUM OPERATING, LLC	9580	32.6590958000	-104.474739100	9/8/1999	[15472] DAGGER DRAW, UPPER PENN, NORTH; [72840] BOYD, MORROW (GAS)
28604	WARREN ANW FEDERAL #004	O	P	EOG Y RESOURCES, INC.	8150	32.6701317000	-104.483535800	9/12/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH
28628	OSAGE BOYD 15 #004	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8150	32.6554642000	-104.474723800	6/6/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28679	OSAGE BOYD 15 FEDERAL COM #003	O	P	NEARBURG PRODUCING CO	8200	32.6627617000	-104.479011500	9/30/1995	[15472] DAGGER DRAW, UPPER PENN, NORTH
28738	BOYD X STATE #012	O	T	EOG Y RESOURCES, INC.	8255	32.6631470000	-104.483345000	3/5/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28739	APAREJO APA STATE COM #006	O	C	EOG Y RESOURCES, INC.	0	32.6637959744	-104.487665266	-	
28743	POLO AOP FEDERAL #004	O	A	EOG Y RESOURCES, INC.	9450	32.6703606000	-104.475448600	1/25/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [72840] BOYD, MORROW (GAS)
28774	BOYD BN COM #003	O	C	EOG Y RESOURCES, INC.	0	32.6637024346	-104.470497585	-	
28775	BOYD BN COM #004	O	C	EOG Y RESOURCES, INC.	0	32.6587802966	-104.466165188	-	
28840	APOLLO APU FEDERAL COM #001	O	P	EOG Y RESOURCES, INC.	8275	32.6664238000	-104.470481900	3/27/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH
28871	POLO AOP FEDERAL #006	O	A	EOG Y RESOURCES, INC.	8250	32.6700516000	-104.470504800	6/17/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [50290] PENASCO, WOLFCAMP; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28885	OSAGE BOYD 15 #005	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8350	32.6554832000	-104.479011500	1/8/2008	[15472] DAGGER DRAW, UPPER PENN, NORTH; [96542] WILDCAT, GRANITE; [97482] WC, GLORIETA-YESO; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28945	OSAGE BOYD 15 FEDERAL COM #006	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8128	32.6664505000	-104.474777200	5/15/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [72840] BOYD, MORROW (GAS)
28981	OSAGE BOYD 15 #007	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8170	32.6591148000	-104.479034400	5/28/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
28992	OSAGE BOYD 15 SWD #001	S	A	PERCUSSION PETROLEUM OPERATING, LLC	8135	32.6628227000	-104.474762000	6/18/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH; [96186] SWD, CISCO-CANYON
29048	APOLLO APU FEDERAL COM #002	O	P	EOG Y RESOURCES, INC.	8140	32.6664009000	-104.467262300	7/24/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH
29116	BOYD BN DEEP COM #005	O	P	EOG Y RESOURCES, INC.	8300	32.6590462000	-104.461868300	10/5/1996	[15472] DAGGER DRAW, UPPER PENN, NORTH
29431	APOLLO APU FEDERAL #003	O	A	EOG Y RESOURCES, INC.	8230	32.6700249000	-104.466209400	5/28/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
29501	BOYD BN #006	O	P	EOG Y RESOURCES, INC.	8218	32.6554413000	-104.469780000	12/18/1997	[15472] DAGGER DRAW, UPPER PENN, NORTH
30816	B & B #011H	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8120	32.6408043000	-104.467132600	2/28/2000	[15472] DAGGER DRAW, UPPER PENN, NORTH; [97565] N. SEVEN RIVERS, GLORIETA-YESO
32096	BOYD BN COM #003Q	O	C	EOG Y RESOURCES, INC.	0	32.6637024346	-104.470497585	-	[15472] DAGGER DRAW, UPPER PENN, NORTH
32097	BOYD BN COM #004Q	O	C	EOG Y RESOURCES, INC.	0	32.6587802966	-104.466165188	-	[15472] DAGGER DRAW, UPPER PENN, NORTH
40190	ARKANSAS 23 FEE #001	O	C	CIMAREX ENERGY CO.	0	32.6490669000	-104.462890600	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
40536	WARREN ANW FEDERAL #008H	O	A	EOG Y RESOURCES, INC.	2581	32.6694717000	-104.497627300	8/10/2012	[50270] PENASCO DRAW, SA-YESO (ASSOC)
41755	PATRIOT AIZ #013H	O	C	EOG Y RESOURCES, INC.	0	32.6451683000	-104.497848500	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
41757	ALTO AOL #002C	O	C	EOG Y RESOURCES, INC.	0	32.6475639000	-104.497497600	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
41987	AMOLE AMM STATE COM #005H	O	N	EOG Y RESOURCES, INC.	0	32.6585350000	-104.498535200	-	[50270] PENASCO DRAW, SA-YESO (ASSOC)
42223	BOYD X STATE COM #015H	O	A	EOG RESOURCES INC	2652	32.6630554000	-104.498329200	3/3/2017	[97565] N. SEVEN RIVERS, GLORIETA-YESO
42253	BOYD X STATE COM #014H	O	A	EOG Y RESOURCES, INC.	2637	32.6656532000	-104.498329200	4/12/2014	[97565] N. SEVEN RIVERS, GLORIETA-YESO
42539	BOYD X STATE COM #013H	O	N	EOG Y RESOURCES, INC.	0	32.6548233000	-104.500061000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
42750	ARTEMIS BUA FEDERAL COM #001H	O	N	EOG Y RESOURCES, INC.	0	32.39106400000	-104.27315700000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
43149	APOLLO APU FEDERAL COM #004H	O	N	EOG Y RESOURCES, INC.	0	32.6528738423	-104.462676773	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
43346	POLO AOP FEDERAL COM #008H	O	N	EOG Y RESOURCES, INC.	0	32.6693502000	-104.464131800	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
43348	APOLLO APU FEDERAL COM #005H	O	N	EOG Y RESOURCES, INC.	0	32.39109600000	-104.28002000000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
43701	SERRANO FEDERAL COM #004H	O	N	EOG Y RESOURCES, INC.	0	32.4009650000	-104.275050000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
43810	APOLLO APU FEDERAL COM #006H	O	C	EOG Y RESOURCES, INC.	0	32.39109100000	-104.28092200000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
43894	ALTO AOL #002H	O	N	EOG Y RESOURCES, INC.	0	32.6477700000	-104.497550000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
44161	B&B 22 #012	O	A	PERCUSSION PETROLEUM OPERATING, LLC	3993	32.6483890000	-104.471283000	6/2/2017	[97565] N. SEVEN RIVERS, GLORIETA-YESO
44366	GOODMAN 22 #004H	O	A	PERCUSSION PETROLEUM OPERATING, LLC	2857	32.6452400000	-104.473538000	10/19/2017	[97565] N. SEVEN RIVERS, GLORIETA-YESO
44382	GOODMAN 22 #001H	O	A	PERCUSSION PETROLEUM OPERATING, LLC	8355	32.6527590000	-104.474246000	9/11/2017	[97565] N. SEVEN RIVERS, GLORIETA-YESO
44383	GOODMAN 22 #002H	O	A	PERCUSSION PETROLEUM OPERATING, LLC	2880	32.6514630000	-104.474539000	10/5/2017	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45141	BOYD X STATE COM #016H	O	N	EOG RESOURCES INC	0	32.65942440000	-104.49995670000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45142	BOYD X STATE COM #017H	O	N	EOG RESOURCES INC	0	32.6593419000	-104.499957500	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45252	ROSS RANCH 22 #009H	O	N	PERCUSSION PETROLEUM OPERATING, LLC	0	32.63721300000	-104.47932400000	9/29/2018	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45320	BOYD X STATE COM #018H	O	N	EOG RESOURCES INC	0	32.6547594000	-104.499994000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45358	BADBOY #001H	O	N	EOG RESOURCES INC	0	32.6548109000	-104.474744000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45447	ROSS RANCH 22 #010H	O	N	PERCUSSION PETROLEUM OPERATING, LLC	0	32.63715900000	-104.47932500000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45448	ROSS RANCH 22 #011H	O	N	PERCUSSION PETROLEUM OPERATING, LLC	0	32.6370630000	-104.478837000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45449	ROSS RANCH 22 #000	O	C	PERCUSSION PETROLEUM OPERATING, LLC	0	32.6370630000	-104.478837000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO
45450	ROSS RANCH 22 #012H	O	N	PERCUSSION PETROLEUM OPERATING, LLC	0	32.6370080000	-104.478837000	-	[97565] N. SEVEN RIVERS, GLORIETA-YESO