Revised March 23 2017

| RECEIVED | REVIEWER | TYPE | APP NO |
|---|---|---|---|
| 5-12-2017 | LRL | NSL | pKSC1713548452 |

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

2017 MAY 12

## 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: OXY USA Inc.** **OGRID Number: 16696**
**Well Name: Patton MDP1-17 Federal #5H** **API: 30-015-pending**
**Pool: Cotton Draw; Bone Spring** **Pool Code: 13367**

**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 or working interest owners
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**

**Sarah Mitchell**
Print or Type Name

Sarah Mitchell
Signature

**5/9/2017**
Date

432-699-4318
Phone Number

sarah_mitchell@oxy com
e-mail Address

**OXY USA Inc**

**PO Box 50250**
**Midland, TX 79710-0250**

May 9, 2017

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

Attention Leonard Lowe

Re ***Application for Administrative Approval of Non-Standard Location –***
***Patton MDP1 17 Federal #5H – Cotton Draw Bone Spring***
***Surface – 834 FSL 1585 FEL Ut O Sec 8 T24S R31E***
***Top Perforation – 340 FNL 1260 FEL Ut A Sec 17 T24S R31E***
***Bottom Perforation – 340 FSL 1260 FEL Ut P Sec 17 T24S R31E***
***Bottom Hole –180 FSL 1260 FEL Ut P Sec 17 T24 R31E***
***Eddy County, New Mexico***

Dear Mr Lowe

OXY USA Inc respectfully requests administrative approval of a non-standard location on the Patton MDP1 17 Federal #5H well API Number-30-015-Pending Property Code Pending The #5H well is proposed to be completed in the Cotton Draw Bone Spring Pool Code 13367 This will be a horizontal well in a pool with no special rules for setback, so the setback requirements under Rule 19 15 15 9 (A) and 19 15 16 15 (B) would apply The proposed producing interval is outside of the proposed Producing Area but within the proposed Project Area and will be drilled as follows

Surface – 834 FSL 1585 FEL Ut O Sec 8 T24S R31E
Top Perforation – 340 FNL 1260 FEL Ut A Sec 17 T24S R31E
Bottom Perforation – 340 FSL 1260 FEL Ut P Sec 17 T24S R31E
Bottom Hole –180 FSL 1260 FEL Ut P Sec 17 T24 R31E

The adjoining spacing units are located in T24S R31E Section 8-Units O P, Section 9- Unit M, Section 16- D E, L M, Section 17-Units A B, G H I J O, P Section 20- Units A B Section 21- Unit D

Approval of the unorthodox producing interval will allow for efficient spacing of horizontal wells and thereby prevent waste

To support this request, the following information has been submitted for your review

1 Application for Permit to Drill
2 C-102 Plat for the proposed well and additional plats with offsetting well and affected spacing units
3 List of affected offset parties that adjoin the non-standard copies of the signed certified return receipts will be furnished upon request
4 Proposed Directional Survey

If you need any additional information please call me at 432-699-4318

Sincerely,

Sarah Mitchell
Regulatory Specialist
OXY USA Inc

Attachments

CC NMOCD-Artesia BLM-Carlsbad, Service List

**OXY USA Inc.**

PO Box 50250
Midland, TX 79710-0250

May 9, 2017

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Re ***Application for Administrative Approval of Non-Standard Location –***
***Patton MDP1 17 Federal #5H – Cotton Draw Bone Spring***
***Surface – 834 FSL 1585 FEL Ut O Sec 8 T24S R31E***
***Top Perforation – 340 FNL 1260 FEL Ut A Sec 17 T24S R31E***
***Bottom Perforation – 340 FSL 1260 FEL Ut P Sec 17 T24S R31E***
***Bottom Hole –180 FSL 1260 FEL Ut P Sec 17 T24 R31E***
***Eddy County, New Mexico***

Ladies and Gentlemen

Enclosed is a copy of an application, filed with the New Mexico Oil Conservation Division by OXY USA Inc , requesting administrative approval for a non-standard location As an affected party, notice is being provided to you pursuant to Rule 19 15 15 9 (A) and 19 15 16 15 (B) The well is located as follows

Surface – 834 FSL 1585 FEL Ut O Sec 8 T24S R31E
Top Perforation – 340 FNL 1260 FEL Ut A Sec 17 T24S R31E
Bottom Perforation – 340 FSL 1260 FEL Ut P Sec 17 T24S R31E
Bottom Hole –180 FSL 1260 FEL Ut P Sec 17 T24 R31E

If you object to the well's location, you must notify the Division in writing no later than 20 days from the date the application is received by the NMOCD (1220 South St Francis Drive, Santa Fe, NM 87505, Attention Leonard Lowe)

If you need any additional information, you can contact John Schneider, CPL at 713-366-5330 or myself at 432-699-4318

Sincerely,

Sarah Mitchell
Regulatory Specialist
OXY USA Inc

Attachments

Form 3160-3
(March 2012)

FORM APPROVED
OMB No 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No
NMNM031963

6 If Indian Allotee or Tribe Name

1a Type of work ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement Name and No

1b Type of Well ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☑ Multiple Zone

8 Lease Name and Well No
PATTON MDP1 17 FEDERAL 5H

2 Name of Operator
OXY USA INC

9 API Well No

3a Address
5 Greenway Plaza, Suite 110 Houston TX 770

3b Phone No *(include area code)*
(713)366-5716

10 Field and Pool or Exploratory
COTTON DRAW BONE SPRING / 2ND I

4 Location of Well *(Report location clearly and in accordance with any State requirements *)*

At surface SWSE / 834 FSL / 1585 FEL / LAT 32 2268881 / LONG -103 7964288

At proposed prod zone SESE / 180 FSL / 1260 FEL / LAT 32 2105739 / LONG -103 7953657

11 Sec , T R M or Blk and Survey or Area
SEC 8 / T24S / R31E / NMP

14 Distance in miles and direction from nearest town or post office*
15 miles

12 County or Parish
EDDY

13 State
NM

15 Distance from proposed* location to nearest property or lease line ft (Also to nearest drig unit line, if any)
834 feet

16 No of acres in lease
480

17 Spacing Unit dedicated to this well
160

18 Distance from proposed location* to nearest well drilling, completed applied for on this lease ft
30 feet

19 Proposed Depth
10122 feet / 15957 feet

20 BLM/BIA Bond No on file
FED ESB000226

21 Elevations (Show whether DF KDB, RT GL etc )
3544 feet

22 Approximate date work will start*
09/06/2018

23 Estimated duration
25 days

## 24 Attachments

The following completed in accordance with the requirements of Onshore Oil and Gas Order No 1 must be attached to this form

1 Well plat certified by a registered surveyor
2 A Drilling Plan
3 A Surface Use Plan (if the location is on National Forest System Lands the SUPO must be filed with the appropriate Forest Service Office)
4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
5 Operator certification
6 Such other site specific information and/or plans as may be required by the BLM

| 25 Signature | Name *(Printed Typed)* | Date |
|---|---|---|
| (Electronic Submission) | David Stewart / Ph (713)366-5716 | 03/28/2017 |

Title
Sr Regulatory Advisor

| Approved by *(Signature)* | Name *(Printed Typed)* | Date |
|---|---|---|
| | | |

| Title | Office |
|---|---|
| | CARLSBAD |

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon
Conditions of approval if any, are attached

Title 18 U S C Section 1001 and Title 43 U S C Section 1212 make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false fictitious or fraudulent statements or representations as to any matter within its jurisdiction

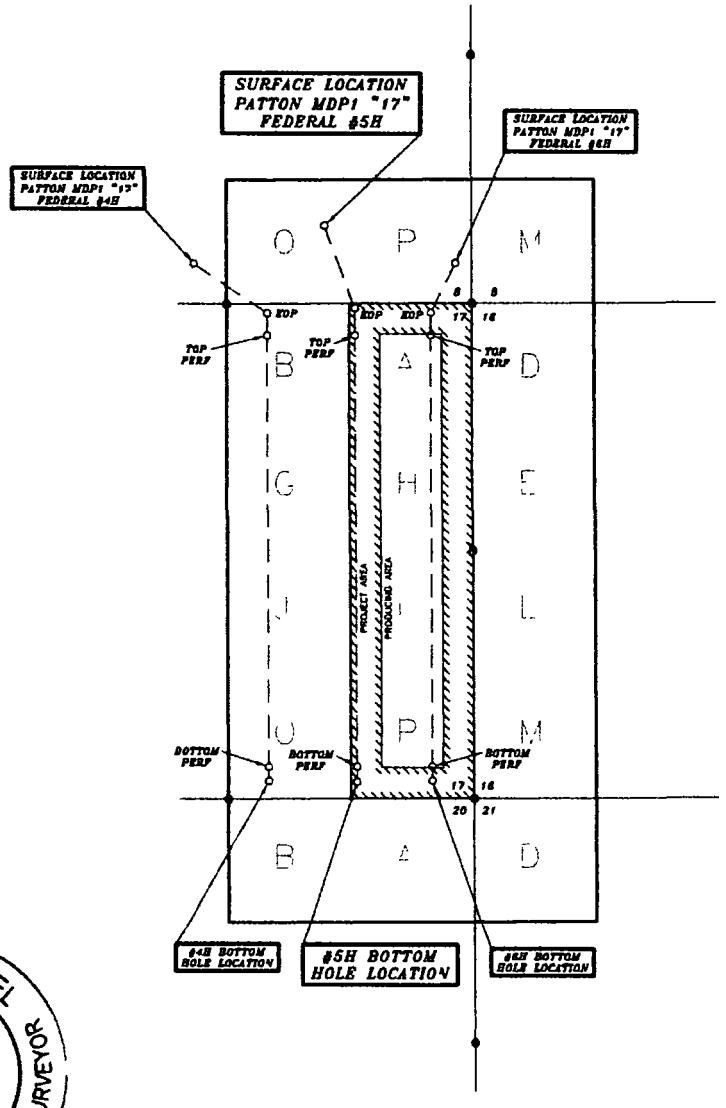
(Continued on page 2)

*(Instructions on page 2)

# OXY USA INC.

## PATTON MDP1 "17" FEDERAL #5H

## SECTIONS 8, 9, 16, 17, 20 & 21, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO


TERRY J ASEL
NEW MEXICO
15079
REGISTERED PROFESSIONAL LAND SURVEYOR

### SURVEYORS CERTIFICATE

I, TERRY J ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS

Terry J. Asel 4/20/2017

Terry J Asel N M R.P.L.S No 15079

Asel Surveying
P O BOX 393 - 310 W TAYLOR
HOBBS, NEW MEXICO - 575-393-9146

2000' 0 2000' 4000' FEET

SCALE 1"=2000'

WO# 170419NSL-b

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

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

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-015- | 13367 | Cotton Draw, Bone Spring |

| Property Code | Property Name | Well Number |
|---|---|---|
| | PATTON MDP1 "17" FEDERAL | 5H |

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 16696 | OXY USA INC | 3543.6' |

## Surface Location

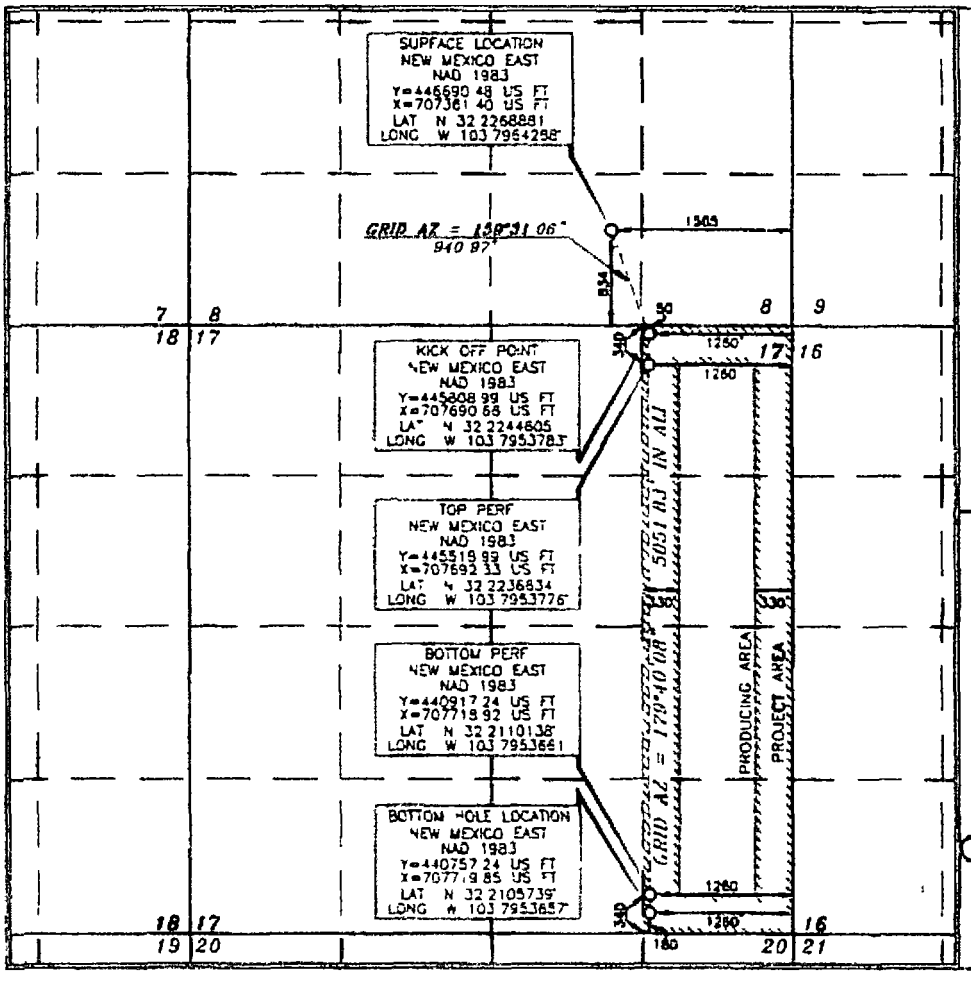
| UL or lot no | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| O | 8 | 24 SOUTH | 31 EAST, N M P M | | 834' | SOUTH | 1565 | EAST | EDDY |

## 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 |
|---|---|---|---|---|---|---|---|---|---|
| P | 17 | 24 SOUTH | 31 EAST, N M P M | | 180' | SOUTH | 1260' | EAST | EDDY |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 160 | Y | | NSL will be filed |

*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 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.

Signature — Date: 3/22/17

David Stewart
Printed Name

david_stewart@oxy.com
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.

Date of Survey: OCTOBER 7, 2016

Signature and Seal of Professional Surveyor

TERRY J. ASEL — NEW MEXICO — 15079 — PROFESSIONAL LAND SURVEYOR

Terry J. Asel 11/1/2016

Certificate Number 15079

WO# 161007WL-d (KA)

**Application Non-Standard Location - Service List**
**OXY USA Inc.**
**Patton MDP1 17 Federal #5H**

New Mexico Oil Conservation Division
811 S First St
Artesia, NM 88210
7017-0190-0000-4589-1275

New Mexico Oil Conservation Division
1220 South St Francis Dr
Santa Fe, NM 87505
7017-0190-0000-4589-1282

United States Dept of Interior
Bureau of Land Management
620 E Greene Street
Carlsbad, NM 88220
7017-0190-0000-4589-1299

**T24S R31E**
**Section 8 - Units O, P**

OXY USA Inc
P O Box 50250
Midland, TX 79710

Hayes Properties, Inc
500 W Texas Avenue
Midland, TX 79701
7017-0190-0000-4589-1381

Devon Energy Production Company, L P
333 W Sheridan Avenue
Oklahoma City, OK 73102-5010
7017-0190-0000-4589-1398

**Section 9 - Unit M &**
**Section 16 - Units D, E, L, M**

Chevron USA Inc
6301 Deauville
Midland, TX 79706-2964
7017-0190-0000-4589-1305

**Section 17- Units A, B, G, H, I, J, O, P**

EOG Resources, Inc
P O Box 2267
Midland, TX 79702
7017-0190-0000-4589-1312

**Section 20- Units A, B &**
**Section 21- Unit D**

CTV OG NM LLC
201 Main Street, Suite 2700
Fort Worth, Texas 76102
7017-0190-0000-4589-1336

Keystone OG NM LLC
201 Main Street, Suite 2700
Fort Worth, TX 76102
7017-0190-0000-4589

LMBI OG NM LLC
201 Main Street, Suite 2700
Fort Worth, TX 76102
7017-0190-0000-4589-1350

SRBI OG NM LLC
201 Main Street, Suite 2700
Fort Worth, Texas 76102
7017-0190-0000-4589-1367

Thru Line OG NM LLC
201 Main Street, Suite 2700
Fort Worth, Texas 76102
7017-0190-0000-4589-1374

Copies of this application were mailed to the following individuals, companies and organizations on or before
09-May-2017

Sarah Mitchell
OXY USA Inc

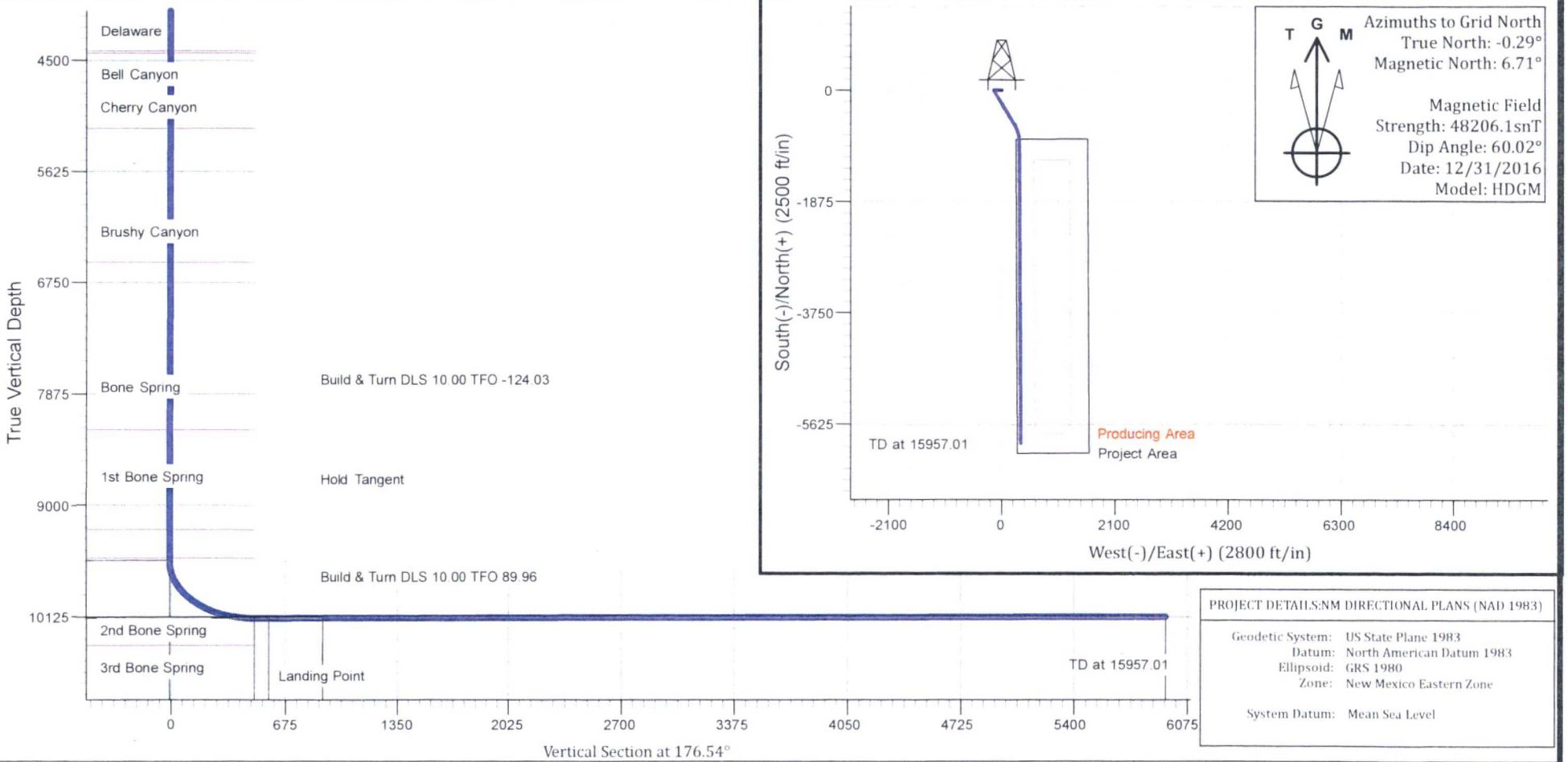
Project: PRD NM DIRECTIONAL PLANS
Site: Patton MDP1 17 Federal
Well: Patton MDP1 17 Federal 5H
Wellbore: WB00
Design: Permitting Plan

**WELL DETAILS:** Patton MDP1 17 Federal 5H

Ground Level: 3543.60

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|
| 0.00 | 0.00 | 446690.48 | 707361.40 | 32° 13' 36.797069 N | 103° 47' 47.143721 W |

WELL @ 3570.10ft (Original Well Elev)










PROJECT DETAILS:NM DIRECTIONAL PLANS (NAD 1983)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

## SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target | Annotation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 2 | 1500.00 | 0.00 | 0.00 | 1500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | Nudge away from other well at TFO 270° |
| 3 | 1600.00 | 1.00 | 270.00 | 1599.99 | 0.00 | -0.87 | 1.00 | 270.00 | -0.05 | | Allow BHA to walk at TFO 270° |
| 4 | 9560.00 | 1.00 | 270.00 | 9558.78 | 0.00 | -139.79 | 0.00 | 0.00 | -8.43 | | Build & Turn DLS 10.00 TFO -124.03 |
| 5 | 10467.20 | 90.16 | 145.96 | 10137.26 | -480.81 | 174.83 | 10.00 | -124.03 | 490.47 | | Hold Tangent |
| 6 | 10567.79 | 90.16 | 145.96 | 10136.97 | -564.16 | 231.13 | 0.00 | 0.00 | 577.07 | | Build & Turn DLS 10.00 TFO 89.96 |
| 7 | 10904.84 | 90.16 | 179.67 | 10136.00 | -881.54 | 329.28 | 10.00 | 89.96 | 899.80 | P_17_5H_LP1 | Landing Point |
| 8 | 15957.01 | 90.16 | 179.67 | 10122.00 | -5933.60 | 358.47 | 0.00 | 0.00 | 5944.42 | | TD at 15957.01 |

| | | | |
|---|---|---|---|
| **Database** | HOPSPP | **Local Co-ordinate Reference** | Well Patton MDP1 17 Federal 5H |
| **Company** | ENGINEERING DESIGNS | **TVD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Project** | PRD NM DIRECTIONAL PLANS (NAD 1983) | **MD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Site** | Patton MDP1 17 Federal | **North Reference** | Grid |
| **Well** | Patton MDP1 17 Federal 5H | **Survey Calculation Method** | Minimum Curvature |
| **Wellbore** | WB00 | | |
| **Design** | Permitting Plan | | |

**Project** PRD NM DIRECTIONAL PLANS (NAD 1983)

| | | | |
|---|---|---|---|
| **Map System** | US State Plane 1983 | **System Datum** | Mean Sea Level |
| **Geo Datum** | North American Datum 1983 | | |
| **Map Zone** | New Mexico Eastern Zone | | Using geodetic scale factor |

**Site** Patton MDP1 17 Federal

| | | | | | |
|---|---|---|---|---|---|
| **Site Position** | | **Northing** | 446,011 46 usft | **Latitude** | 32° 13' 30 217436 N |
| **From** | Map | **Easting** | 704,511 86 usft | **Longitude** | 103° 48' 20 355774 W |
| **Position Uncertainty** | 0 00 ft | **Slot Radius** | 13 200 in | **Grid Convergence** | 0 28 ° |

**Well** Patton MDP1 17 Federal 5H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 679 06 ft | **Northing** | 446 690 48 usft | **Latitude** | 32° 13' 36 797069 N |
| | **+E/-W** | 2,849 72 ft | **Easting** | 707,361 40 usft | **Longitude** | 103° 47' 47 143721 W |
| **Position Uncertainty** | | 0 00 ft | **Wellhead Elevation** | 3,543 60 ft | **Ground Level** | 3 543 60 ft |

**Wellbore** WB00

| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
|---|---|---|---|---|---|
| | HDGM | 12/31/2016 | 7 00 | 60 02 | 48,206 |

**Design** Permitting Plan

**Audit Notes**

| | | | | | |
|---|---|---|---|---|---|
| **Version** | | **Phase** | PROTOTYPE | **Tie On Depth** | 0 00 |

| **Vertical Section** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** |
|---|---|---|---|---|
| | 0 00 | 0 00 | 0 00 | 176 54 |

**Plan Sections**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 1,500 00 | 0 00 | 0 00 | 1,500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 1,600 00 | 1 00 | 270 00 | 1,599 99 | 0 00 | -0 87 | 1 00 | 1 00 | 0 00 | 270 00 | |
| 9,560 00 | 1 00 | 270 00 | 9,558 78 | 0 00 | -139 79 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 10 467 20 | 90 16 | 145 96 | 10,137 26 | -480 81 | 174 83 | 10 00 | 9 83 | -13 67 | -124 03 | |
| 10,567 79 | 90 16 | 145 96 | 10 136 97 | -564 16 | 231 13 | 0 00 | 0 00 | 0 00 | 0 00 | |
| 10 904 84 | 90 16 | 179 67 | 10 136 00 | -881 54 | 329 28 | 10 00 | 0 00 | 10 00 | 89 96 | P_17_5H_LP1 |
| 15,957 01 | 90 16 | 179 67 | 10,122 00 | -5,933 60 | 358 47 | 0 00 | 0 00 | 0 00 | 0 00 | P17_5H_BHL |

| | | | |
|---|---|---|---|
| **Database** | HOPSPP | **Local Co-ordinate Reference** | Well Patton MDP1 17 Federal 5H |
| **Company** | ENGINEERING DESIGNS | **TVD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Project** | PRD NM DIRECTIONAL PLANS (NAD 1983) | **MD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Site** | Patton MDP1 17 Federal | **North Reference** | Grid |
| **Well** | Patton MDP1 17 Federal 5H | **Survey Calculation Method** | Minimum Curvature |
| **Wellbore** | WB00 | | |
| **Design** | Permitting Plan | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 100 00 | 0 00 | 0 00 | 100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 200 00 | 0 00 | 0 00 | 200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 300 00 | 0 00 | 0 00 | 300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 400 00 | 0 00 | 0 00 | 400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 500 00 | 0 00 | 0 00 | 500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 600 00 | 0 00 | 0 00 | 600 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 700 00 | 0 00 | 0 00 | 700 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 800 00 | 0 00 | 0 00 | 800 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 900 00 | 0 00 | 0 00 | 900 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 1,000 00 | 0 00 | 0 00 | 1,000 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 1,100 00 | 0 00 | 0 00 | 1,100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 1,200 00 | 0 00 | 0 00 | 1,200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 1,300 00 | 0 00 | 0 00 | 1 300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 1,400 00 | 0 00 | 0 00 | 1,400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 1,500 00 | 0 00 | 0 00 | 1,500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 |
| 1,600 00 | 1 00 | 270 00 | 1,599 99 | 0 00 | -0 87 | -0 05 | 1 00 | 1 00 | 0 00 |
| 1,700 00 | 1 00 | 270 00 | 1 699 98 | 0 00 | -2 62 | -0 16 | 0 00 | 0 00 | 0 00 |
| 1,800 00 | 1 00 | 270 00 | 1,799 96 | 0 00 | -4 36 | -0 26 | 0 00 | 0 00 | 0 00 |
| 1,900 00 | 1 00 | 270 00 | 1,899 95 | 0 00 | -6 11 | -0 37 | 0 00 | 0 00 | 0 00 |
| 2,000 00 | 1 00 | 270 00 | 1,999 93 | 0 00 | -7 85 | -0 47 | 0 00 | 0 00 | 0 00 |
| 2,100 00 | 1 00 | 270 00 | 2,099 92 | 0 00 | -9 60 | -0 58 | 0 00 | 0 00 | 0 00 |
| 2,200 00 | 1 00 | 270 00 | 2,199 90 | 0 00 | -11 34 | -0 68 | 0 00 | 0 00 | 0 00 |
| 2,300 00 | 1 00 | 270 00 | 2,299 89 | 0 00 | -13 09 | -0 79 | 0 00 | 0 00 | 0 00 |
| 2,400 00 | 1 00 | 270 00 | 2,399 87 | 0 00 | -14 83 | -0 89 | 0 00 | 0 00 | 0 00 |
| 2,500 00 | 1 00 | 270 00 | 2,499 86 | 0 00 | -16 58 | -1 00 | 0 00 | 0 00 | 0 00 |
| 2,600 00 | 1 00 | 270 00 | 2,599 84 | 0 00 | -18 33 | -1 11 | 0 00 | 0 00 | 0 00 |
| 2,700 00 | 1 00 | 270 00 | 2,699 83 | 0 00 | -20 07 | -1 21 | 0 00 | 0 00 | 0 00 |
| 2,800 00 | 1 00 | 270 00 | 2 799 81 | 0 00 | -21 82 | -1 32 | 0 00 | 0 00 | 0 00 |
| 2,900 00 | 1 00 | 270 00 | 2,899 80 | 0 00 | -23 56 | -1 42 | 0 00 | 0 00 | 0 00 |
| 3,000 00 | 1 00 | 270 00 | 2,999 78 | 0 00 | -25 31 | -1 53 | 0 00 | 0 00 | 0 00 |
| 3,100 00 | 1 00 | 270 00 | 3,099 77 | 0 00 | -27 05 | -1 63 | 0 00 | 0 00 | 0 00 |
| 3 200 00 | 1 00 | 270 00 | 3,199 75 | 0 00 | -28 80 | -1 74 | 0 00 | 0 00 | 0 00 |
| 3 300 00 | 1 00 | 270 00 | 3 299 74 | 0 00 | -30 54 | -1 84 | 0 00 | 0 00 | 0 00 |
| 3,400 00 | 1 00 | 270 00 | 3 399 72 | 0 00 | -32 29 | -1 95 | 0 00 | 0 00 | 0 00 |
| 3,500 00 | 1 00 | 270 00 | 3,499 71 | 0 00 | -34 03 | -2 05 | 0 00 | 0 00 | 0 00 |
| 3,600 00 | 1 00 | 270 00 | 3,599 69 | 0 00 | -35 78 | -2 16 | 0 00 | 0 00 | 0 00 |
| 3,700 00 | 1 00 | 270 00 | 3 699 68 | 0 00 | -37 52 | -2 26 | 0 00 | 0 00 | 0 00 |
| 3,800 00 | 1 00 | 270 00 | 3,799 66 | 0 00 | -39 27 | -2 37 | 0 00 | 0 00 | 0 00 |
| 3,900 00 | 1 00 | 270 00 | 3,899 64 | 0 00 | -41 01 | -2 47 | 0 00 | 0 00 | 0 00 |
| 4,000 00 | 1 00 | 270 00 | 3,999 63 | 0 00 | -42 76 | -2 58 | 0 00 | 0 00 | 0 00 |
| 4,100 00 | 1 00 | 270 00 | 4,099 61 | 0 00 | -44 50 | -2 68 | 0 00 | 0 00 | 0 00 |
| 4,200 00 | 1 00 | 270 00 | 4,199 60 | 0 00 | -46 25 | -2 79 | 0 00 | 0 00 | 0 00 |
| 4,300 00 | 1 00 | 270 00 | 4,299 58 | 0 00 | -47 99 | -2 89 | 0 00 | 0 00 | 0 00 |
| 4,400 00 | 1 00 | 270 00 | 4,399 57 | 0 00 | -49 74 | -3 00 | 0 00 | 0 00 | 0 00 |
| 4,500 00 | 1 00 | 270 00 | 4,499 55 | 0 00 | -51 48 | -3 10 | 0 00 | 0 00 | 0 00 |
| 4,600 00 | 1 00 | 270 00 | 4,599 54 | 0 00 | -53 23 | -3 21 | 0 00 | 0 00 | 0 00 |
| 4,700 00 | 1 00 | 270 00 | 4,699 52 | 0 00 | -54 98 | -3 32 | 0 00 | 0 00 | 0 00 |
| 4,800 00 | 1 00 | 270 00 | 4,799 51 | 0 00 | -56 72 | -3 42 | 0 00 | 0 00 | 0 00 |
| 4,900 00 | 1 00 | 270 00 | 4,899 49 | 0 00 | -58 47 | -3 53 | 0 00 | 0 00 | 0 00 |
| 5,000 00 | 1 00 | 270 00 | 4,999 48 | 0 00 | -60 21 | -3 63 | 0 00 | 0 00 | 0 00 |
| 5,100 00 | 1 00 | 270 00 | 5 099 46 | 0 00 | -61 96 | -3 74 | 0 00 | 0 00 | 0 00 |
| 5,200 00 | 1 00 | 270 00 | 5,199 45 | 0 00 | -63 70 | -3 84 | 0 00 | 0 00 | 0 00 |
| 5,300 00 | 1 00 | 270 00 | 5,299 43 | 0 00 | -65 45 | -3 95 | 0 00 | 0 00 | 0 00 |

| | | | |
|---|---|---|---|
| **Database** | HOPSPP | **Local Co-ordinate Reference** | Well Patton MDP1 17 Federal 5H |
| **Company** | ENGINEERING DESIGNS | **TVD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Project** | PRD NM DIRECTIONAL PLANS (NAD 1983) | **MD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Site** | Patton MDP1 17 Federal | **North Reference** | Grid |
| **Well** | Patton MDP1 17 Federal 5H | **Survey Calculation Method** | Minimum Curvature |
| **Wellbore** | WB00 | | |
| **Design** | Permitting Plan | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 5,400 00 | 1 00 | 270 00 | 5,399 42 | 0 00 | -67 19 | -4 05 | 0 00 | 0 00 | 0 00 |
| 5,500 00 | 1 00 | 270 00 | 5,499 40 | 0 00 | -68 94 | -4 16 | 0 00 | 0 00 | 0 00 |
| 5,600 00 | 1 00 | 270 00 | 5,599 39 | 0 00 | -70 68 | -4 26 | 0 00 | 0 00 | 0 00 |
| 5,700 00 | 1 00 | 270 00 | 5,699 37 | 0 00 | -72 43 | -4 37 | 0 00 | 0 00 | 0 00 |
| 5,800 00 | 1 00 | 270 00 | 5 799 36 | 0 00 | -74 17 | -4 47 | 0 00 | 0 00 | 0 00 |
| 5,900 00 | 1 00 | 270 00 | 5 899 34 | 0 00 | -75 92 | -4 58 | 0 00 | 0 00 | 0 00 |
| 6 000 00 | 1 00 | 270 00 | 5 999 32 | 0 00 | -77 66 | -4 68 | 0 00 | 0 00 | 0 00 |
| 6,100 00 | 1 00 | 270 00 | 6,099 31 | 0 00 | -79 41 | -4 79 | 0 00 | 0 00 | 0 00 |
| 6,200 00 | 1 00 | 270 00 | 6 199 29 | 0 00 | -81 15 | -4 89 | 0 00 | 0 00 | 0 00 |
| 6 300 00 | 1 00 | 270 00 | 6 299 28 | 0 00 | -82 90 | -5 00 | 0 00 | 0 00 | 0 00 |
| 6,400 00 | 1 00 | 270 00 | 6 399 26 | 0 00 | -84 64 | -5 10 | 0 00 | 0 00 | 0 00 |
| 6,500 00 | 1 00 | 270 00 | 6,499 25 | 0 00 | -86 39 | -5 21 | 0 00 | 0 00 | 0 00 |
| 6,600 00 | 1 00 | 270 00 | 6,599 23 | 0 00 | -88 13 | -5 31 | 0 00 | 0 00 | 0 00 |
| 6,700 00 | 1 00 | 270 00 | 6,699 22 | 0 00 | -89 88 | -5 42 | 0 00 | 0 00 | 0 00 |
| 6,800 00 | 1 00 | 270 00 | 6 799 20 | 0 00 | -91 63 | -5 53 | 0 00 | 0 00 | 0 00 |
| 6 900 00 | 1 00 | 270 00 | 6,899 19 | 0 00 | -93 37 | -5 63 | 0 00 | 0 00 | 0 00 |
| 7,000 00 | 1 00 | 270 00 | 6,999 17 | 0 00 | -95 12 | -5 74 | 0 00 | 0 00 | 0 00 |
| 7,100 00 | 1 00 | 270 00 | 7,099 16 | 0 00 | -96 86 | -5 84 | 0 00 | 0 00 | 0 00 |
| 7,200 00 | 1 00 | 270 00 | 7 199 14 | 0 00 | -98 61 | -5 95 | 0 00 | 0 00 | 0 00 |
| 7,300 00 | 1 00 | 270 00 | 7,299 13 | 0 00 | -100 35 | -6 05 | 0 00 | 0 00 | 0 00 |
| 7,400 00 | 1 00 | 270 00 | 7,399 11 | 0 00 | -102 10 | -6 16 | 0 00 | 0 00 | 0 00 |
| 7,500 00 | 1 00 | 270 00 | 7,499 10 | 0 00 | -103 84 | -6 26 | 0 00 | 0 00 | 0 00 |
| 7,600 00 | 1 00 | 270 00 | 7,599 08 | 0 00 | -105 59 | -6 37 | 0 00 | 0 00 | 0 00 |
| 7,700 00 | 1 00 | 270 00 | 7 699 07 | 0 00 | -107 33 | -6 47 | 0 00 | 0 00 | 0 00 |
| 7,800 00 | 1 00 | 270 00 | 7,799 05 | 0 00 | -109 08 | -6 58 | 0 00 | 0 00 | 0 00 |
| 7 900 00 | 1 00 | 270 00 | 7,899 04 | 0 00 | -110 82 | -6 68 | 0 00 | 0 00 | 0 00 |
| 8,000 00 | 1 00 | 270 00 | 7,999 02 | 0 00 | -112 57 | -6 79 | 0 00 | 0 00 | 0 00 |
| 8,100 00 | 1 00 | 270 00 | 8,099 01 | 0 00 | -114 31 | -6 89 | 0 00 | 0 00 | 0 00 |
| 8,200 00 | 1 00 | 270 00 | 8,198 99 | 0 00 | -116 06 | -7 00 | 0 00 | 0 00 | 0 00 |
| 8,300 00 | 1 00 | 270 00 | 8,298 97 | 0 00 | -117 80 | -7 10 | 0 00 | 0 00 | 0 00 |
| 8,400 00 | 1 00 | 270 00 | 8 398 96 | 0 00 | -119 55 | -7 21 | 0 00 | 0 00 | 0 00 |
| 8,500 00 | 1 00 | 270 00 | 8,498 94 | 0 00 | -121 29 | -7 31 | 0 00 | 0 00 | 0 00 |
| 8,600 00 | 1 00 | 270 00 | 8 598 93 | 0 00 | -123 04 | -7 42 | 0 00 | 0 00 | 0 00 |
| 8,700 00 | 1 00 | 270 00 | 8 698 91 | 0 00 | -124 78 | -7 53 | 0 00 | 0 00 | 0 00 |
| 8 800 00 | 1 00 | 270 00 | 8 798 90 | 0 00 | -126 53 | -7 63 | 0 00 | 0 00 | 0 00 |
| 8 900 00 | 1 00 | 270 00 | 8 898 88 | 0 00 | -128 28 | -7 74 | 0 00 | 0 00 | 0 00 |
| 9,000 00 | 1 00 | 270 00 | 8 998 87 | 0 00 | -130 02 | -7 84 | 0 00 | 0 00 | 0 00 |
| 9 100 00 | 1 00 | 270 00 | 9 098 85 | 0 00 | -131 77 | -7 95 | 0 00 | 0 00 | 0 00 |
| 9,200 00 | 1 00 | 270 00 | 9 198 84 | 0 00 | -133 51 | -8 05 | 0 00 | 0 00 | 0 00 |
| 9,300 00 | 1 00 | 270 00 | 9 298 82 | 0 00 | -135 26 | -8 16 | 0 00 | 0 00 | 0 00 |
| 9,400 00 | 1 00 | 270 00 | 9 398 81 | 0 00 | -137 00 | -8 26 | 0 00 | 0 00 | 0 00 |
| 9,500 00 | 1 00 | 270 00 | 9,498 79 | 0 00 | -138 75 | -8 37 | 0 00 | 0 00 | 0 00 |
| 9,560 00 | 1 00 | 270 00 | 9 558 78 | 0 00 | -139 79 | -8 43 | 0 00 | 0 00 | 0 00 |
| 9,600 00 | 3 54 | 159 49 | 9 598 76 | -1 16 | -139 71 | -7 27 | 10 00 | 6 35 | -276 27 |
| 9,700 00 | 13 47 | 149 43 | 9,697 54 | -14 10 | -132 69 | 6 08 | 10 00 | 9 93 | -10 06 |
| 9 800 00 | 23 45 | 147 88 | 9,792 27 | -41 05 | -116 14 | 33 97 | 10 00 | 9 99 | -1 55 |
| 9,900 00 | 33 45 | 147 22 | 9 880 08 | -81 18 | -90 58 | 75 57 | 10 00 | 10 00 | -0 66 |
| 10 000 00 | 43 45 | 146 84 | 9 958 30 | -133 27 | -56 76 | 129 60 | 10 00 | 10 00 | -0 38 |
| 10,100 00 | 53 44 | 146 58 | 10,024 55 | -195 73 | -15 73 | 194 43 | 10 00 | 10 00 | -0 26 |
| 10,200 00 | 63 44 | 146 38 | 10 076 82 | -266 68 | 31 27 | 268 08 | 10 00 | 10 00 | -0 20 |
| 10,300 00 | 73 44 | 146 21 | 10 113 51 | -343 95 | 82 82 | 348 32 | 10 00 | 10 00 | -0 17 |
| 10 400 00 | 83 44 | 146 06 | 10 133 53 | -425 20 | 137 34 | 432 71 | 10 00 | 10 00 | -0 15 |
| 10,467 20 | 90 16 | 145 96 | 10 137 26 | -480 81 | 174 83 | 490 47 | 10 00 | 10 00 | -0 15 |
| 10,500 00 | 90 16 | 145 96 | 10,137 16 | -507 98 | 193 19 | 518 71 | 0 00 | 0 00 | 0 00 |

| | | | |
|---|---|---|---|
| **Database** | HOPSPP | **Local Co-ordinate Reference** | Well Patton MDP1 17 Federal 5H |
| **Company** | ENGINEERING DESIGNS | **TVD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Project** | PRD NM DIRECTIONAL PLANS (NAD 1983) | **MD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Site** | Patton MDP1 17 Federal | **North Reference** | Grid |
| **Well** | Patton MDP1 17 Federal 5H | **Survey Calculation Method** | Minimum Curvature |
| **Wellbore** | WB00 | | |
| **Design** | Permitting Plan | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 10,567 79 | 90 16 | 145 96 | 10,136 97 | -564 16 | 231 13 | 577 07 | 0 00 | 0 00 | 0 00 |
| 10,600 00 | 90 16 | 149 18 | 10 136 88 | -591 34 | 248 40 | 605 25 | 10 00 | 0 01 | 10 00 |
| 10,700 00 | 90 17 | 159 18 | 10,136 59 | -681 25 | 291 89 | 697 61 | 10 00 | 0 00 | 10 00 |
| 10 800 00 | 90 17 | 169 18 | 10,136 30 | -777 34 | 319 11 | 795 17 | 10 00 | 0 00 | 10 00 |
| 10,900 00 | 90 16 | 179 18 | 10,136 01 | -876 70 | 329 23 | 894 96 | 10 00 | -0 01 | 10 00 |
| 10,904 84 | 90 16 | 179 67 | 10,136 00 | -881 54 | 329 28 | 899 80 | 10 00 | -0 01 | 10 00 |
| 11,000 00 | 90 16 | 179 67 | 10 135 74 | -976 70 | 329 83 | 994 81 | 0 00 | 0 00 | 0 00 |
| 11,100 00 | 90 16 | 179 67 | 10,135 46 | -1,076 70 | 330 41 | 1,094 66 | 0 00 | 0 00 | 0 00 |
| 11 200 00 | 90 16 | 179 67 | 10 135 18 | -1,176 69 | 330 99 | 1,194 51 | 0 00 | 0 00 | 0 00 |
| 11,300 00 | 90 16 | 179 67 | 10,134 91 | -1 276 69 | 331 56 | 1,294 36 | 0 00 | 0 00 | 0 00 |
| 11,400 00 | 90 16 | 179 67 | 10,134 63 | -1,376 69 | 332 14 | 1 394 21 | 0 00 | 0 00 | 0 00 |
| 11,500 00 | 90 16 | 179 67 | 10,134 35 | -1,476 69 | 332 72 | 1,494 06 | 0 00 | 0 00 | 0 00 |
| 11,600 00 | 90 16 | 179 67 | 10,134 07 | -1 576 69 | 333 30 | 1,593 92 | 0 00 | 0 00 | 0 00 |
| 11,700 00 | 90 16 | 179 67 | 10,133 80 | -1 676 68 | 333 87 | 1,693 77 | 0 00 | 0 00 | 0 00 |
| 11,800 00 | 90 16 | 179 67 | 10,133 52 | -1,776 68 | 334 45 | 1,793 62 | 0 00 | 0 00 | 0 00 |
| 11,900 00 | 90 16 | 179 67 | 10,133 24 | -1 876 68 | 335 03 | 1,893 47 | 0 00 | 0 00 | 0 00 |
| 12,000 00 | 90 16 | 179 67 | 10,132 97 | -1 976 68 | 335 61 | 1,993 32 | 0 00 | 0 00 | 0 00 |
| 12,100 00 | 90 16 | 179 67 | 10,132 69 | -2 076 68 | 336 19 | 2,093 17 | 0 00 | 0 00 | 0 00 |
| 12,200 00 | 90 16 | 179 67 | 10,132 41 | -2 176 67 | 336 76 | 2 193 02 | 0 00 | 0 00 | 0 00 |
| 12,300 00 | 90 16 | 179 67 | 10 132 13 | -2,276 67 | 337 34 | 2,292 87 | 0 00 | 0 00 | 0 00 |
| 12,400 00 | 90 16 | 179 67 | 10,131 86 | -2,376 67 | 337 92 | 2,392 72 | 0 00 | 0 00 | 0 00 |
| 12 500 00 | 90 16 | 179 67 | 10 131 58 | -2,476 67 | 338 50 | 2,492 57 | 0 00 | 0 00 | 0 00 |
| 12 600 00 | 90 16 | 179 67 | 10,131 30 | -2,576 66 | 339 07 | 2,592 42 | 0 00 | 0 00 | 0 00 |
| 12 700 00 | 90 16 | 179 67 | 10,131 03 | -2 676 66 | 339 65 | 2,692 27 | 0 00 | 0 00 | 0 00 |
| 12 800 00 | 90 16 | 179 67 | 10 130 75 | -2,776 66 | 340 23 | 2,792 12 | 0 00 | 0 00 | 0 00 |
| 12,900 00 | 90 16 | 179 67 | 10,130 47 | -2 876 66 | 340 81 | 2,891 98 | 0 00 | 0 00 | 0 00 |
| 13 000 00 | 90 16 | 179 67 | 10 130 19 | -2 976 66 | 341 39 | 2,991 83 | 0 00 | 0 00 | 0 00 |
| 13,100 00 | 90 16 | 179 67 | 10,129 92 | -3,076 65 | 341 96 | 3,091 68 | 0 00 | 0 00 | 0 00 |
| 13,200 00 | 90 16 | 179 67 | 10,129 64 | -3,176 65 | 342 54 | 3 191 53 | 0 00 | 0 00 | 0 00 |
| 13,300 00 | 90 16 | 179 67 | 10 129 36 | -3 276 65 | 343 12 | 3,291 38 | 0 00 | 0 00 | 0 00 |
| 13,400 00 | 90 16 | 179 67 | 10,129 09 | -3 376 65 | 343 70 | 3,391 23 | 0 00 | 0 00 | 0 00 |
| 13,500 00 | 90 16 | 179 67 | 10 128 81 | -3,476 65 | 344 28 | 3 491 08 | 0 00 | 0 00 | 0 00 |
| 13,600 00 | 90 16 | 179 67 | 10,128 53 | -3,576 64 | 344 85 | 3,590 93 | 0 00 | 0 00 | 0 00 |
| 13,700 00 | 90 16 | 179 67 | 10 128 25 | -3 676 64 | 345 43 | 3 690 78 | 0 00 | 0 00 | 0 00 |
| 13,800 00 | 90 16 | 179 67 | 10 127 98 | -3 776 64 | 346 01 | 3,790 63 | 0 00 | 0 00 | 0 00 |
| 13 900 00 | 90 16 | 179 67 | 10 127 70 | -3 876 64 | 346 59 | 3 890 48 | 0 00 | 0 00 | 0 00 |
| 14,000 00 | 90 16 | 179 67 | 10,127 42 | -3 976 64 | 347 16 | 3 990 33 | 0 00 | 0 00 | 0 00 |
| 14,100 00 | 90 16 | 179 67 | 10 127 15 | -4 076 63 | 347 74 | 4 090 19 | 0 00 | 0 00 | 0 00 |
| 14 200 00 | 90 16 | 179 67 | 10,126 87 | -4 176 63 | 348 32 | 4 190 04 | 0 00 | 0 00 | 0 00 |
| 14,300 00 | 90 16 | 179 67 | 10 126 59 | -4 276 63 | 348 90 | 4 289 89 | 0 00 | 0 00 | 0 00 |
| 14,400 00 | 90 16 | 179 67 | 10,126 31 | -4 376 63 | 349 48 | 4 389 74 | 0 00 | 0 00 | 0 00 |
| 14,500 00 | 90 16 | 179 67 | 10 126 04 | -4 476 63 | 350 05 | 4 489 59 | 0 00 | 0 00 | 0 00 |
| 14,600 00 | 90 16 | 179 67 | 10 125 76 | -4 576 62 | 350 63 | 4,589 44 | 0 00 | 0 00 | 0 00 |
| 14,700 00 | 90 16 | 179 67 | 10 125 48 | -4 676 62 | 351 21 | 4,689 29 | 0 00 | 0 00 | 0 00 |
| 14,800 00 | 90 16 | 179 67 | 10,125 21 | -4,776 62 | 351 79 | 4 789 14 | 0 00 | 0 00 | 0 00 |
| 14,900 00 | 90 16 | 179 67 | 10,124 93 | -4,876 62 | 352 36 | 4,888 99 | 0 00 | 0 00 | 0 00 |
| 15,000 00 | 90 16 | 179 67 | 10 124 65 | -4 976 62 | 352 94 | 4 988 84 | 0 00 | 0 00 | 0 00 |
| 15,100 00 | 90 16 | 179 67 | 10 124 38 | -5 076 61 | 353 52 | 5 088 69 | 0 00 | 0 00 | 0 00 |
| 15,200 00 | 90 16 | 179 67 | 10,124 10 | -5 176 61 | 354 10 | 5,188 54 | 0 00 | 0 00 | 0 00 |
| 15,300 00 | 90 16 | 179 67 | 10 123 82 | -5 276 61 | 354 68 | 5,288 39 | 0 00 | 0 00 | 0 00 |
| 15,400 00 | 90 16 | 179 67 | 10,123 54 | -5 376 61 | 355 25 | 5,388 25 | 0 00 | 0 00 | 0 00 |
| 15,500 00 | 90 16 | 179 67 | 10 123 27 | -5 476 61 | 355 83 | 5,488 10 | 0 00 | 0 00 | 0 00 |
| 15,600 00 | 90 16 | 179 67 | 10 122 99 | -5 576 60 | 356 41 | 5 587 95 | 0 00 | 0 00 | 0 00 |
| 15,700 00 | 90 16 | 179 67 | 10,122 71 | -5 676 60 | 356 99 | 5,687 80 | 0 00 | 0 00 | 0 00 |

| | | | |
|---|---|---|---|
| **Database** | HOPSPP | **Local Co-ordinate Reference** | Well Patton MDP1 17 Federal 5H |
| **Company** | ENGINEERING DESIGNS | **TVD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Project** | PRD NM DIRECTIONAL PLANS (NAD 1983) | **MD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Site** | Patton MDP1 17 Federal | **North Reference** | Grid |
| **Well** | Patton MDP1 17 Federal 5H | **Survey Calculation Method** | Minimum Curvature |
| **Wellbore** | WB00 | | |
| **Design** | Permitting Plan | | |

**Planned Survey**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|---|---|---|---|---|---|---|---|---|
| 15,800 00 | 90 16 | 179 67 | 10 122 44 | -5 776 60 | 357 56 | 5,787 65 | 0 00 | 0 00 | 0 00 |
| 15,900 00 | 90 16 | 179 67 | 10 122 16 | -5,876 60 | 358 14 | 5 887 50 | 0 00 | 0 00 | 0 00 |
| 15,957 01 | 90 16 | 179 67 | 10 122 00 | -5 933 60 | 358 47 | 5,944 42 | 0 00 | 0 00 | 0 00 |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| P17_5H_KOP | 0 00 | 0 00 | 9 663 00 | -881 54 | 329 28 | 445,808 99 | 707 690 66 | 32° 13' 28 057876 N | 103° 47' 43 361990 |
| - plan misses target center by 473 00ft at 10906 16ft MD (10136 00 TVD -882 85 N, 329 29 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| P17_5H_BHL | 0 00 | 0 00 | 10,122 00 | -5,933 60 | 358 47 | 440,757 24 | 707,719 85 | 32° 12' 38 066143 N | 103° 47' 43 316573 |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |
| P_17_5H_LP1 | 0 00 | 0 00 | 10,136 00 | -881 54 | 329 28 | 445,808 99 | 707 690 66 | 32° 13' 28 057876 N | 103° 47' 43 361990 |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |
| P_17_5H_LP | 0 00 | 0 00 | 10 136 00 | -937 47 | -615 48 | 445,753 07 | 706 745 96 | 32° 13' 27 551185 N | 103° 47' 54 362757 |
| - plan misses target center by 910 57ft at 10404 04ft MD (10133 97 TVD, -428 53 N, 139 59 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Interp @ 10136 46 | 0 00 | 0 00 | 10 136 46 | -1,447 58 | 332 55 | 445,242 98 | 707,693 93 | 32° 13' 22 456736 N | 103° 47' 43 356906 |
| - plan misses target center by 2 03ft at 11470 89ft MD (10134 43 TVD, -1447 58 N, 332 55 E) | | | | | | | | | |
| - Point | | | | | | | | | |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 700 00 | 700 00 | Rustler | | | |
| 1,060 00 | 1 060 00 | Salado | | | |
| 2,840 19 | 2 840 00 | Castile Anhydrite | | | |
| 4,402 43 | 4,402 00 | Delaware | | | |
| 4,428 44 | 4,428 00 | Bell Canyon | | | |
| 5,189 55 | 5,189 00 | Cherry Canyon | | | |
| 6,549 76 | 6,549 00 | Brushy Canyon | | | |
| 8,237 02 | 8,236 00 | Bone Spring | | | |
| 9,242 17 | 9,241 00 | 1st Bone Spring | | 0 00 | |
| 9,529 21 | 9 528 00 | 2nd Bone Spring | | 0 00 | |

| | | | |
|---|---|---|---|
| **Database** | HOPSPP | **Local Co-ordinate Reference** | Well Patton MDP1 17 Federal 5H |
| **Company** | ENGINEERING DESIGNS | **TVD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Project** | PRD NM DIRECTIONAL PLANS (NAD 1983) | **MD Reference** | WELL @ 3570 10ft (Original Well Elev) |
| **Site** | Patton MDP1 17 Federal | **North Reference** | Grid |
| **Well** | Patton MDP1 17 Federal 5H | **Survey Calculation Method** | Minimum Curvature |
| **Wellbore** | WB00 | | |
| **Design** | Permitting Plan | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | +E/-W (ft) | Comment |
|---|---|---|---|---|
| 1,500 00 | 1 500 00 | 0 00 | 0 00 | Nudge away from other well at TFO 270° |
| 1,600 00 | 1,599 99 | 0 00 | -0 87 | Allow BHA to walk at TFO 270° |
| 9,560 00 | 9 558 78 | 0 00 | -139 79 | Build & Turn DLS 10 00 TFO -124 03 |
| 10,467 20 | 10,137 27 | -480 80 | 174 83 | Hold Tangent |
| 10,567 79 | 10 136 97 | -564 16 | 231 13 | Build & Turn DLS 10 00 TFO 89 96 |
| 10,904 85 | 10 136 00 | -881 55 | 329 28 | Landing Point |
| 15,957 01 | 10,122 00 | -5,933 60 | 358 47 | TD at 15957 01 |

**OXY USA Inc.**
**5 Greenway Plaza, Suite 110**
**Houston, TX 77046**

June 21, 2017

Mr Michael McMillan
New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

RE. Application for Nonstandard Location—Ownership Statement
OXY USA Inc
Patton MDP1 17 Federal #2H and #5H Wells
Section 17, T24S-R31E, Eddy County, New Mexico

Dear Mr McMillan:

My name is Stacy Rojas and I am the Land Negotiator responsible for the area covering OXY USA Inc.'s Patton MDP1 17 Federal #2H and Patton MDP1 17 Federal #5H wells, being the W/2 of the W/2 and the E/2 of the E/2 of Section 17, T24S-R31E, respectively

I am familiar with the ownership of Section 17, T24S-R31E, Eddy County, New Mexico Subsequent to the filing of the NSL application on May 9, 2017 covering the subject wells, OXY USA Inc and EOG closed an acreage trade whereby OXY USA Inc is now the owner of 100% working interest in Section 17, T24S-R31E, Eddy County, New Mexico.

Sincerely,

OXY USA Inc

Stacy Rojas

Stacy Rojas
Land Negotiator Advisor, Sr
Office (713) 215-7541
Right Fax (713) 985-1873
Email stacy_rojas@oxy.com
Mobile (832) 541-6125

**Occidental Oil and Gas Corporation**
**ATTN: Kacie Cruz**
**5 Greenway Plaza, Suite 110**
**Houston, TX 77046**
**713-350-4889**
**kacie_cruz@oxy.com**

June 22, 2017

Mr Michael McMillan
New Mexico Oil Conservation Division
1220 South Francis Drive
Santa Fe, New Mexico 87505

RE Application for Nonstandard Location—Engineering Justification
OXY USA Inc
Patton MDP1-17 Federal #5H
E/2 E/2 Section 17, T24S-R31E, Eddy County

Dear Mr McMillan

Oxy USA Inc respectfully seeks approval for non-standard locations, increasing horizontal well spacing from 4 wells per section ("wps") to 6 wps to effectively develop the Bone Spring and Wolfcamp formations It is Oxy's responsibility as a prudent operator to optimize well spacing for horizontal development and minimize reserves left in the ground Increasing horizontal well spacing from 4 wps to 6 wps will optimize recoverable reserves Any reduction in well spacing will result in untapped reserves being left in the reservoir resulting in waste of a resource that will not be developed otherwise

Sincerely,

Kacie Cruz
Development Production Engineer
Oxy USA Inc

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to.

EOG Resources, Inc
PO Box 2267
Midland, TX 79702

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature
X Robert Jora ☑ Agent ☐ Addressee

B. Received by (Printed Name) K. Force C. Date of Delivery 5-12-17

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

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☑ Certified Mail® ☐ Priority Mail Express™
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