**NM OIL CONSERVATION**
ARTESIA DISTRICT

FEB 17 2015

RECEIVED


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


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

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-015-42947 | 55510 | Scanlon Draw; Bone Spring |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 38432 | AGATE PWU 21 | 12H |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 6137 | DEVON ENERGY PRODUCTION COMPANY, L.P. | 3325.8' |

## [10] Surface Location

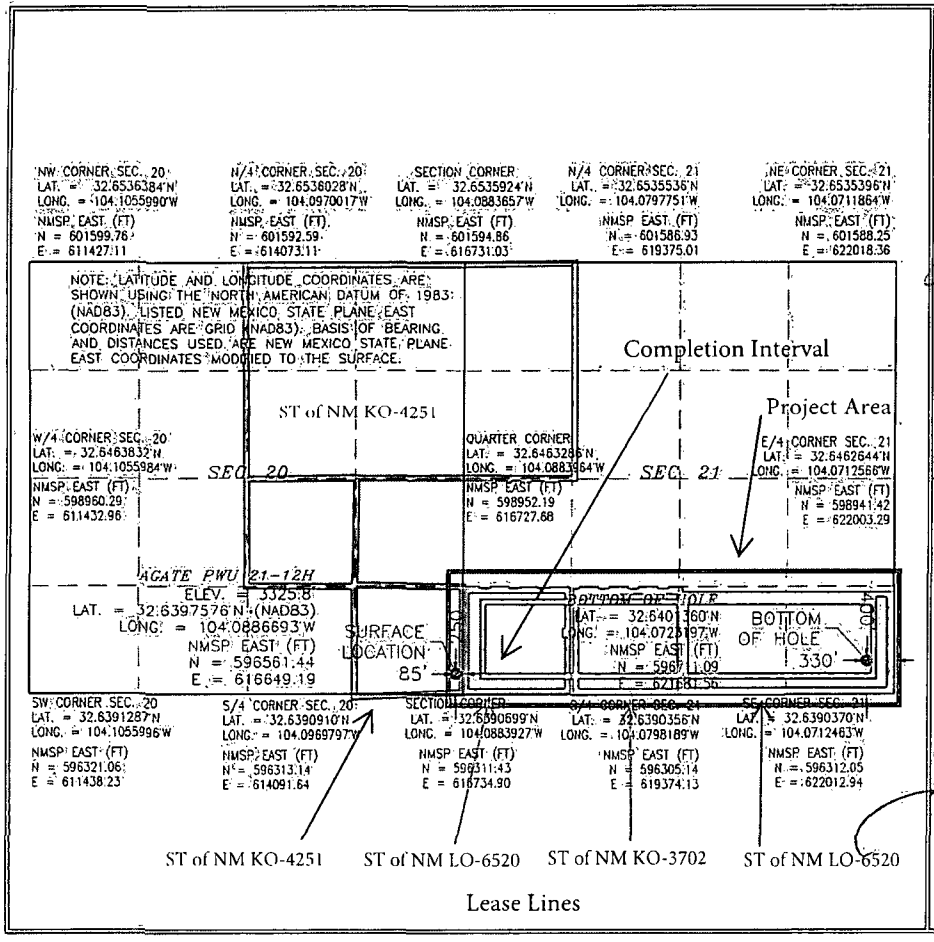
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 20 | 19 S | 29 E | | 250 | SOUTH | 85 | EAST | EDDY |

## [11] Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| P | 21 | 19 S | 29 E | | 400 | SOUTH | 330 | EAST | EDDY |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| 160.00 | | | |

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




## [17] OPERATOR CERTIFICATION

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

Linda Good 2/11/2015
Signature Date

Linda Good
Printed Name

linda.good@dvn.com
E-mail Address

## [18] SURVEYOR CERTIFICATION

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

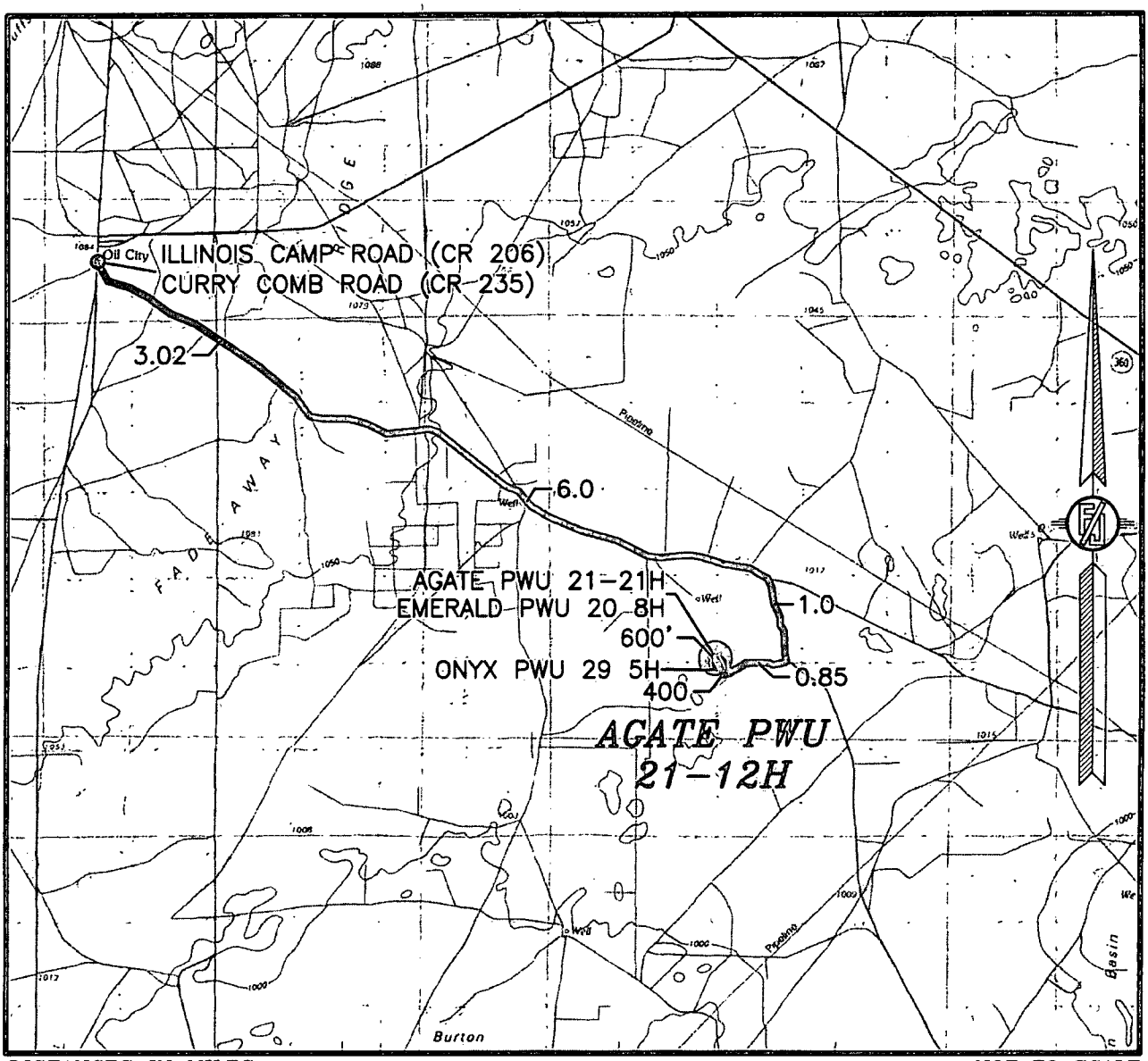
NOVEMBER 13, 2014
Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 3411

# SECTION 20, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
# EDDY COUNTY, STATE OF NEW MEXICO
# VICINITY MAP




*DISTANCES IN MILES* *NOT TO SCALE*

**DIRECTIONS TO LOCATION**
FROM THE INTERSECTION OF ILLINOIS CAMP ROAD (CR 206) AND CURRY COMB ROAD (CR 235) GO SOUTHEAST ON CR 235 3.02 MILES TO INTERSECTION OF CR 246 AND CR 235 TURN LEFT ON CR 235 (CURRY COMB ROAD) GO EAST ON CR 235 ABOUT 6.0 MILES ROAD "Y"S' RIGHT GO SOUTH ABOUT 1.0 MILES TURN RIGHT ON INTERSECTION GO WEST ABOUT 0.85 MILES TO CALICHE ROAD ON RIGHT GO NORTH ABOUT 400 FT. TURN RIGHT TO ONYX PWU 29 5H GO NORTH ON PAD ABOUT 600 FT. WELL IS ON EXISTING PAD FOR EMERALD PWU 20 8H

*DEVON ENERGY PRODUCTION COMPANY, L.P.*
***AGATE PWU 21-12H***
*LOCATED 250 FT. FROM THE SOUTH LINE AND 85 FT. FROM THE EAST LINE OF SECTION 20, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO*

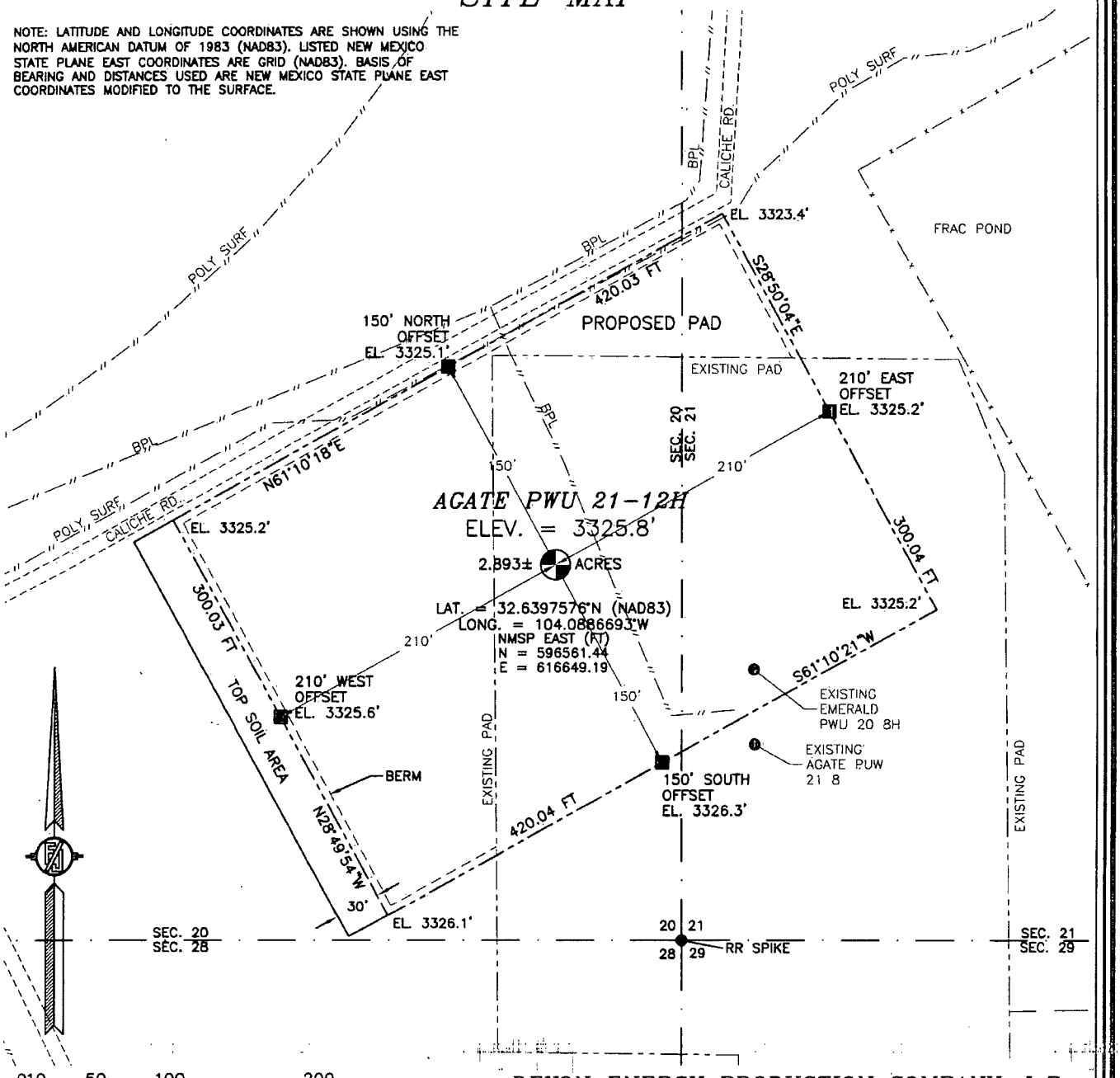
*NOVEMBER 13, 2014*

*SURVEY NO. 3411*

*MADRON SURVEYING, INC.* 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

# SECTION 20, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
# EDDY COUNTY, STATE OF NEW MEXICO
## SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE.




0 10 50 100 200
SCALE 1" = 100'

**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF ILLINOIS CAMP ROAD (CR 208) AND CURRY COMB ROAD (CR 235) GO SOUTHEAST ON CR 235 3.02 MILES TO INTERSECTION OF CR 246 AND CR 235 TURN LEFT ON CR 235 (CURRY COMB ROAD) GO EAST ON CR 235 ABOUT 6.0 MILES ROAD "Y'S" RIGHT GO SOUTH ABOUT 1.0 MILES TURN RIGHT ON INTERSECTION GO WEST ABOUT 0.85 MILES TO CALICHE ROAD ON RIGHT GO NORTH ABOUT 400 FT. TURN RIGHT TO ONYX PWU 29 5H GO NORTH ON PAD ABOUT 600 FT. WELL IS ON EXISTING PAD FOR EMERALD PWU 20 8H

*DEVON ENERGY PRODUCTION COMPANY, L.P.*

***ACATE PWU 21-12H***

*LOCATED 250 FT. FROM THE SOUTH LINE AND 85 FT. FROM THE EAST LINE OF SECTION 20, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO*

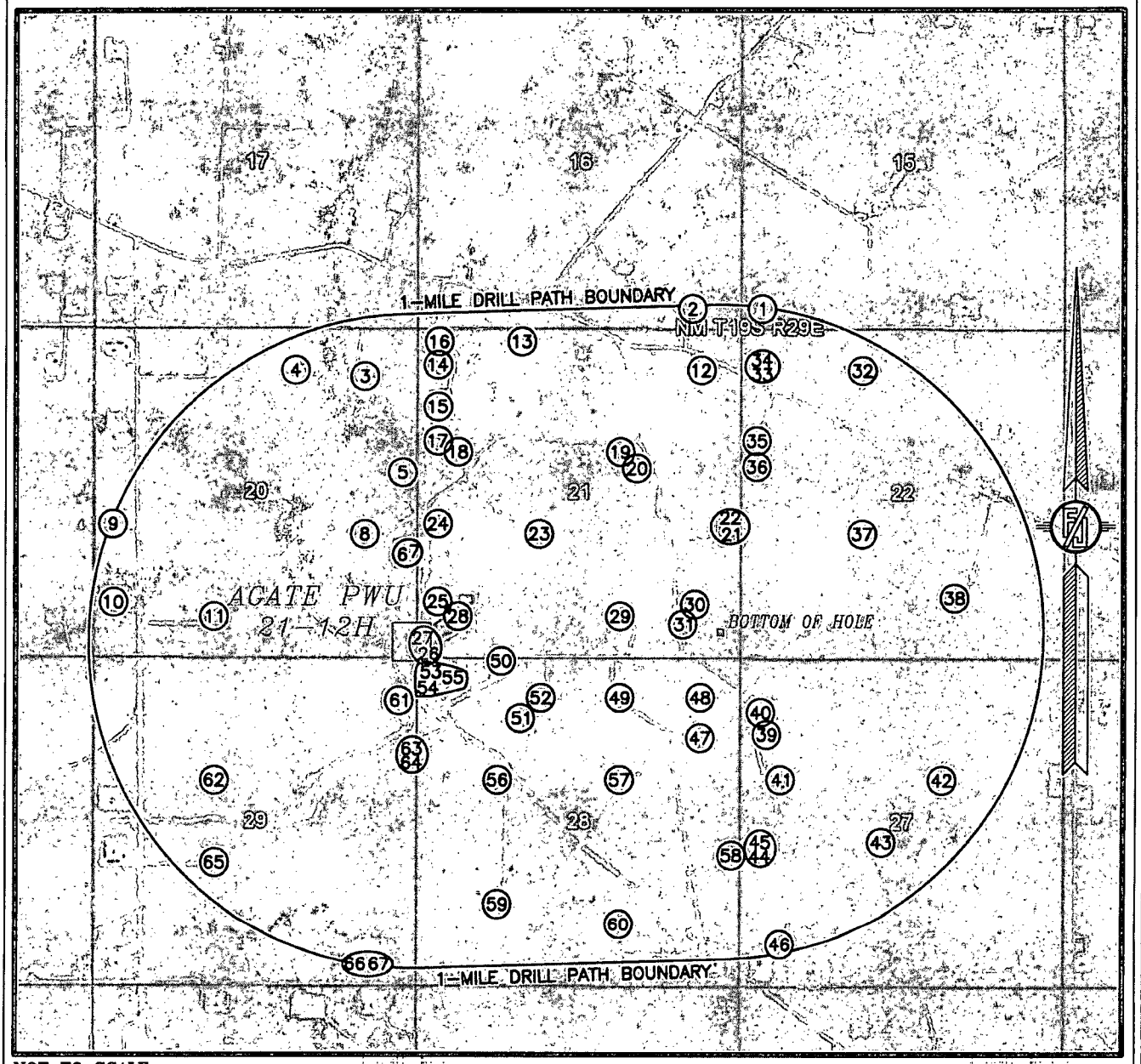
*NOVEMBER 13, 2014*

*SURVEY NO. 3411*

*MADRON SURVEYING, INC.* 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 20, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

# AERIAL PHOTO




NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MAY 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.

**ACATE PWU 21-12H**

LOCATED 250 FT. FROM THE SOUTH LINE
AND 85 FT. FROM THE EAST LINE OF
SECTION 20, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 13, 2014

SURVEY NO. 3411

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

# SECTION 20, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
# EDDY COUNTY, STATE OF NEW MEXICO
# WELLS WITHIN 1-MILE DRILL PATH BOUNDARY

| | API | Well | Type | Status | ULSTR | Current Operator |
|---|---|---|---|---|---|---|
| 1 | 30-015-37376 | PARKWAY STATE COM #003 | Oil | Active | M-15-19S-29E | [162683] CIMAREX ENERGY CO. OF COLORADO |
| 2 | 30-015-37632 | MAGNUM 16 STATE #003 | Oil | Active | P-16-19S-29E | [162683] CIMAREX ENERGY CO. OF COLORADO |
| 3 | 30-015-31238 | PARKWAY WEST UNIT #011 | Oil | Active | A-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 4 | 30-015-03599 | PRE-ONGARD WELL #001 | Oil | Plugged | B-20-19S-29E | [214263] PRE-ONGARD WELL OPERATOR |
| 5 | 30-015-40591 | AGATE PWU 21 #006H | Oil | Active | H-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 6 | 30-015-40511 | AGATE PWU 21 #007H | Oil | Active | I-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 7 | 30-015-40587 | EMERALD PWU 20 #007H | Oil | Active | I-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 8 | 30-015-32124 | PARKWAY #013 | Gas | Active | I-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 9 | 30-015-39365 | EMERALD PWU 20 #003H | Oil | Active | L-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 10 | 30-015-40037 | EMERALD PWU 20 #004H | Oil | Active | M-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 11 | 30-015-22367 | PARKWAY WEST UNIT #005 | Gas | Active | N-20-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 12 | 30-015-03601 | PRE-ONGARD WELL #001 | Oil | Plugged | A-21-19S-29E | [214263] PRE-ONGARD WELL OPERATOR |
| 13 | 30-015-38525 | PARKWAY 16 STATE COM #003H | Oil | New | C-21-19S-29E | [14744] MEWBOURNE OIL CO |
| 14 | 30-015-38335 | AGATE PWU 21 #001H | Oil | Active | D-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 15 | 30-015-40590 | AGATE PWU 21 #005H | Oil | Active | D-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 16 | 30-015-38109 | PARKWAY 16 STATE COM #002H | Oil | Active | D-21-19S-29E | [14744] MEWBOURNE OIL CO |
| 17 | 30-015-38605 | AGATE PWU 21 #002H | Oil | Active | E-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 18 | 30-015-31295 | PARKWAY WEST UNIT #012 | Gas | Active | E-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 19 | 30-015-23109 | PARKWAY WEST UNIT #009 | Gas | Active | G-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 20 | 30-015-03600 | PRE-ONGARD WELL #001 | Oil | Plugged | G-21-19S-29E | [214263] PRE-ONGARD WELL OPERATOR |
| 21 | 30-015-41007 | DIAMOND PWU 22 #007H | Oil | Active | I-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 22 | 30-015-39372 | DIAMOND PWU 22 #003H | Oil | Active | I-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 23 | 30-015-32663 | PARKWAY #019 | Oil | Active | K-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 24 | 30-015-39374 | AGATE PWU 21 #003H | Oil | Active | L-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 25 | 30-015-40134 | AGATE PWU 21 #004H | Oil | Active | M-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 26 | 30-015-40512 | AGATE PWU 21 #008H | Oil | Active | M-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 27 | 30-015-40513 | EMERALD PWU 20 #008H | Oil | Active | M-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 28 | 30-015-33526 | PARKWAY WEST UNIT #024 | Gas | Active | M-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 29 | 30-015-22979 | PARKWAY WEST UNIT #006 | Gas | Active | O-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 30 | 30-015-41014 | DIAMOND PWU 22 #008H | Oil | Active | P-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 31 | 30-015-40036 | DIAMOND PWU 22 #004H | Oil | Active | P-21-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 32 | 30-015-23006 | PARKWAY WEST UNIT #007 | Gas | Active | C-22-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 33 | 30-015-40822 | DIAMOND PWU 22 #005H | Oil | Active | D-22-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 34 | 30-015-38334 | DIAMOND PWU 22 #001H | Oil | Active | D-22-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 35 | 30-015-38475 | DIAMOND PWU 22 #002H | Oil | Active | E-22-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 36 | 30-015-41008 | DIAMOND PWU 22 #006H | Oil | Active | E-22-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 37 | 30-015-23033 | PARKWAY WEST UNIT #008 | Gas | Active | K-22-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 38 | 30-015-33482 | PARKWAY WEST UNIT #021 | Gas | Active | O-22-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 39 | 30-015-40835 | PARKWAY WEST SWD #001 | Salt Water Disposal | New | D-27-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 40 | 30-015-38333 | TURQUOISE PWU 27 #001H | Oil | Active | D-27-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 41 | 30-015-33447 | PARKWAY WEST UNIT #017 | Gas | Active | E-27-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 42 | 30-015-23108 | PARKWAY WEST UNIT #010 | Gas | Active | G-27-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 43 | 30-015-03607 | PRE-ONGARD WELL #001 | Oil | Plugged | K-27-19S-29E | [214263] PRE-ONGARD WELL OPERATOR |
| 44 | 30-015-40508 | TURQUOISE PWU 27 #007H | Oil | Active | L-27-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 45 | 30-015-40501 | TURQUOISE PWU 27 #003H | Oil | Active | L-27-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 46 | 30-015-33444 | PARKWAY WEST UNIT #020 | Gas | Active | M-27-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 47 | 30-015-32363 | PARKWAY WEST UNIT #015 | Gas | Active | A-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 48 | 30-015-03608 | PRE-ONGARD WELL #001 | Oil | Plugged | A-28-19S-29E | [214263] PRE-ONGARD WELL OPERATOR |
| 49 | 30-015-32184 | PARKWAY #014 | Gas | Active | B-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 50 | 30-015-40217 | CORAL PWU 28 #002H | Oil | Active | C-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 51 | 30-015-30401 | PARKWAY WEST 28 UNIT #004 | Gas | Active | C-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 52 | 30-015-20760 | PARKWAY WEST UNIT #001 | Gas | Plugged | C-28-19S-29E | [169355] DEVON LOUISIANA CORPORATION |
| 53 | 30-015-40509 | CORAL PWU 28 #005H | Oil | Active | D-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 54 | 30-015-40135 | ONYX PWU 29 #005H | Oil | Active | D-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 55 | 30-015-40206 | CORAL PWU 28 #001H | Oil | Active | D-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 56 | 30-015-29628 | PARKWAY WEST 28 UNIT #002 | Oil | Active | E-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 57 | 30-015-32685 | PARKWAY #020 | Oil | Active | G-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 58 | 30-015-40592 | CORAL PWU 28 #007H | Oil | Active | I-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 59 | 30-015-30003 | PARKWAY WEST 28 UNIT #003 | Gas | Active | M-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 60 | 30-015-32812 | PARKWAY #016 | Gas | Active | O-28-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 61 | 30-015-39386 | ONYX PWU 29 #001H | Oil | Active | A-29-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 62 | 30-015-21005 | PARKWAY WEST UNIT #002 | Gas | Active | G-29-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 63 | 30-015-40514 | ONYX PWU 29 #006H | Oil | Active | H-29-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 64 | 30-015-40516 | CORAL PWU 28 #006H | Oil | Active | H-29-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 65 | 30-015-23107 | PARKWAY WEST UNIT #003 | Gas | Active | K-29-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 66 | 30-015-40510 | CORAL PWU 28 #008H | Oil | New | P-29-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |
| 67 | 30-015-40515 | ONYX PWU 29 #008H | Oil | Active | P-29-19S-29E | [6137] DEVON ENERGY PRODUCTION COMPANY, LP |

*DEVON ENERGY PRODUCTION COMPANY, L.P.*

***AGATE PWU 21-12H***

*LOCATED 250 FT. FROM THE SOUTH LINE*
*AND 85 FT. FROM THE EAST LINE OF*
*SECTION 20, TOWNSHIP 19 SOUTH,*
*RANGE 29 EAST, N.M.P.M.*
*EDDY COUNTY, STATE OF NEW MEXICO*

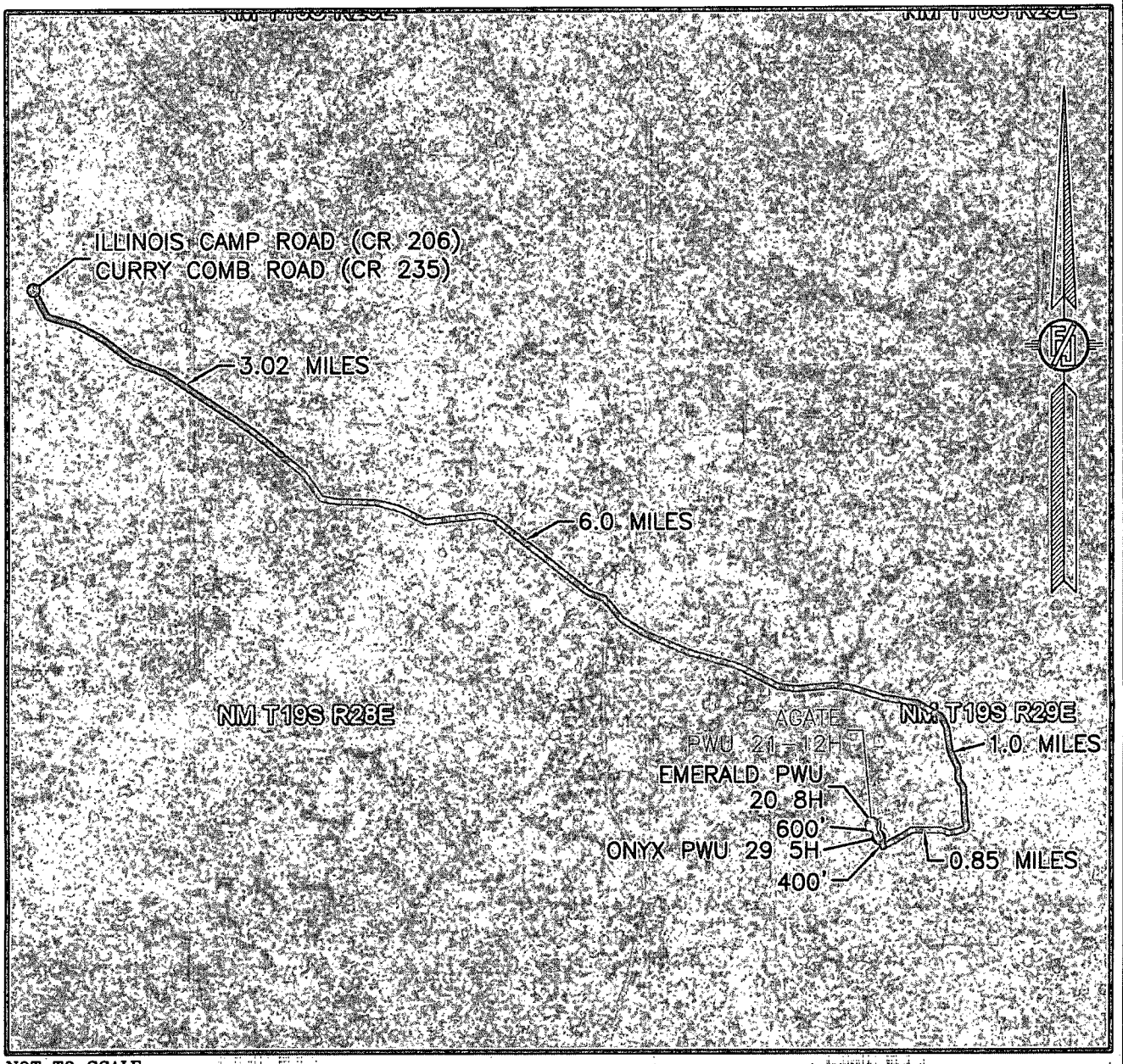
*NOVEMBER 13, 2014*

*SURVEY NO. 3411*

*MADRON SURVEYING, INC.* 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 20, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

# AERIAL ACCESS ROUTE MAP




NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MAY 2014

DEVON ENERGY PRODUCTION COMPANY, L.P.

**AGATE PWU 21-12H**

LOCATED 250 FT. FROM THE SOUTH LINE
AND 85 FT. FROM THE EAST LINE OF
SECTION 20, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 13, 2014

SURVEY NO. 3411

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

## 1. Geologic Formations

| | | | |
|---|---|---|---|
| TVD of target | 9,055' | Pilot hole depth | N/A |
| MD at TD: | 13,853' | Deepest expected fresh water: | |

## Basin

| Formation | Depth (TVD) from KB | Water/Mineral Bearing/ Target Zone? | Hazards* |
|---|---|---|---|
| Rustler | Surface | Barren | |
| Salt | 465 | Barren | |
| Tansil | 1,130 | Barren | |
| Yates | 1,265 | Barren | |
| Queen | 2,165 | Oil | |
| Grayburg | 2,555 | Oil | |
| Delaware | 3,445 | Oil | |
| Bone Spring Lm | 4,975 | Oil | |
| 2nd BS Lm | 7,005 | Oil | |
| 3rd BS Lm | 7,990 | Oil | |
| 3rd BS Sd | 8,620 | Oil | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

*H2S, water flows, loss of circulation, abnormal pressures, etc.

## 2. Casing Program

| Hole Size | Casing Interval From | Casing Interval To | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| 17.5" | 0 | 350' | 13.375" | 48 | H-40 | STC | 4.92 | 11.05 | 32.20 |
| 12.25" | 0 | 3,400' | 9.625" | 36 | J-55 | LTC | 1.143 | 1.99 | 3.70 |
| 8.75" | 0 | 8,400' | 7" | 29 | HCP-110 | BTC | 2.065 | 2.52 | 3.92 |
| 8.75" | 8,400' | 13,853' | 5.5" | 17 | P-110 | BTC | 1.79 | 2.21 | 3.69 |
| | | | | BLM Minimum Safety Factor | | | 1.125 | 1.00 | 1.6 Dry<br>1.8 Wet |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

| | Y or N |
|---|---|
| Is casing new? If used, attach certification as required in Onshore Order #1 | Y |
| Does casing meet API specifications? If no, attach casing specification sheet. | Y |
| Is premium or uncommon casing planned? If yes attach casing specification sheet. | N |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y |
| Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing? | Y |
| Is well located within Capitan Reef? | N |
| If yes, does production casing cement tie back a minimum of 50' above the Reef? | |
| Is well within the designated 4 string boundary. | |
| Is well located in SOPA but not in R-111-P? | N |
| If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing? | |
| Is well located in R-111-P and SOPA? | N |
| If yes, are the first three strings cemented to surface? | |
| Is 2nd string set 100' to 600' below the base of salt? | |
| Is well located in high Cave/Karst? | N |
| If yes, are there two strings cemented to surface? | |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? | |
| Is well located in critical Cave/Karst? | N |
| If yes, are there three strings cemented to surface? | |

## 3. Cementing Program

| Casing | # Sks | Wt. lb/ gal | $H_20$ gal/sk | Yld ft3/ sack | 500# Comp. Strength (hours) | Slurry Description |
|---|---|---|---|---|---|---|
| Surf. | 400 | 14.8 | 6.34 | 1.34 | 6 | Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake + 1% BWOC Calcium Chloride |
| Inter. | 680 | 12.9 | 9.81 | 1.85 | 15 | Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake |
| | 430 | 14.8 | 1.33 | 6.32 | 7 | Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake |
| 7 x 5.5" Combo Prod | 360 | 10.4 | 16.8 | 3.17 | 25 | Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake |
| | 1450 | 14.5 | 5.31 | 1.2 | 25 | Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite |

| Casing String | TOC | % Excess |
|---|---|---|
| Surface | 0' | 100% |
| Intermediate | 0' | 75% |
| 7 x 5.5" Combo Prod. | 2400' | 25% |

## 4. Pressure Control Equipment

| | |
|---|---|
| N | A variance is requested for the use of a diverter on the surface casing. See attached for schematic. |

| BOP installed and tested before drilling which hole? | Size? | Min. Required WP | Type | ✓ | Tested to: |
|---|---|---|---|---|---|
| 12-1/4" | 13-5/8" | 3M | Annular | x | 50% of working pressure |
| | | | Blind Ram | | 3M |
| | | | Pipe Ram | | |
| | | | Double Ram | x | |
| | | | Other* | | |
| 8-3/4" | 13-5/8" | 3M | Annular | x | 50% testing pressure |
| | | | Blind Ram | | 3M |
| | | | Pipe Ram | | |
| | | | Double Ram | x | |
| | | | Other * | | |
| | | | Annular | | |
| | | | Blind Ram | | |
| | | | Pipe Ram | | |
| | | | Double Ram | | |
| | | | Other * | | |

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

| | |
|---|---|
| Y | Formation integrity test will be performed per Onshore Order #2.<br>On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. |

| | | |
|---|---|---|
| Y | A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart. | |
| | Y | Are anchors required by manufacturer? |
| Y | A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.<br><br>Devon proposes using a multi-bowl wellhead assembly (FMC Uni-head). This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi.<br>• Wellhead will be installed by FMC's representatives.<br>• If the welding is performed by a third party, the FMC's representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.<br>• FMC representative will install the test plug for the initial BOP test.<br>• FMC will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.<br>• If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.<br>• Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.<br>• Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.<br><br>After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the FMC Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.<br>After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the FMC Uni-head.<br><br>The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP. | |

| | |
|---|---|
| | Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns<br><br>See attached schematic. |

**5. Mud Program**

| Depth | | Type | Weight (ppg) | Viscosity | Water Loss |
|---|---|---|---|---|---|
| From | To | | | | |
| 0 | 350' | FW Gel | 8.6-8.8 | 28-34 | N/C |
| 350' | 3,400' | Saturated Brine | 10.0-10.2 | 28-34 | N/C |
| 3,400' | 13,853' | Cut Brine | 8.5-9.3 | 28-34 | N/C |

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

| | |
|---|---|
| What will be used to monitor the loss or gain of fluid? | PVT/Pason/Visual Monitoring |

**6. Logging and Testing Procedures**

| Logging, Coring and Testing. | |
|---|---|
| x | Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM. |
| | No Logs are planned based on well control or offset log information. |
| | Drill stem test? If yes, explain |
| | Coring? If yes, explain |

| Additional logs planned | | Interval |
|---|---|---|
| | Resistivity | Int. shoe to KOP |
| | Density | Int. shoe to KOP |
| X | CBL | Production casing |
| X | Mud log | Intermediate shoe to TD |
| | PEX | |

## 7. Drilling Conditions

| Condition | Specify what type and where? |
|---|---|
| BH Pressure at deepest TVD | 4075 psi |
| Abnormal Temperature | No |

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

| | |
|---|---|
| Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM. | |
| N | H2S is present |
| Y | H2S Plan attached |

## 8. Other facets of operation

Is this a walking operation? No.
Will be pre-setting casing? No.

Attachments
_x_ Directional Plan
___ Other, describe

# DEVON ENERGY

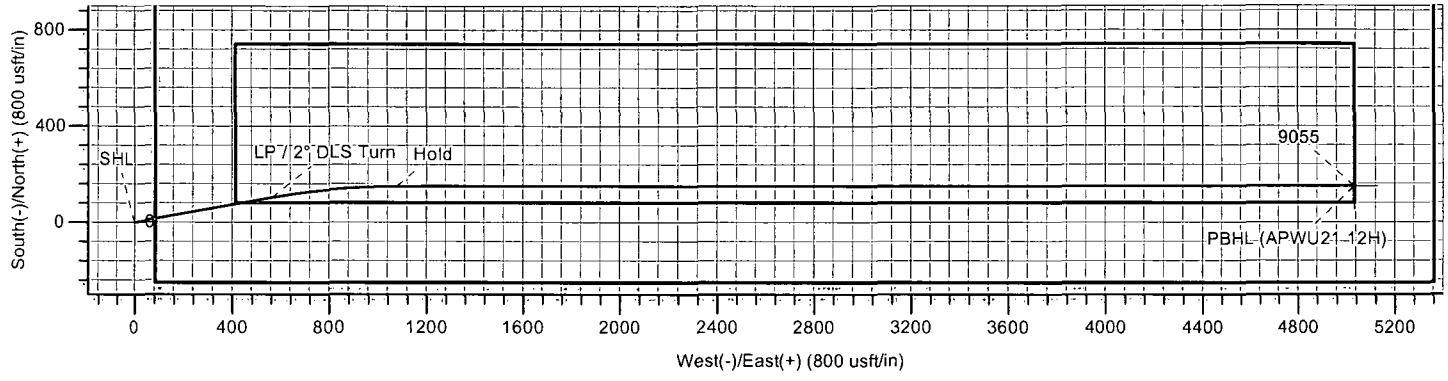
Project: Eddy County, NM (NAD-83)
Site: Agate PWU 21
Well: 12H
Wellbore: OH
Design: Plan #1

T M

Azimuths to Grid North
True North: -0.13°
Magnetic North: 7.47°

Magnetic Field
Strength: 48409.1snT
Dip Angle: 60.39°
Date: 12/15/2014
Model: BGGM2014

devon







DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|---|---|
| SHL (APWU21 12H) | 0.00 | 0.00 | 0.00 | 596561.44 | 616649.19 | 32° 38' 23.127 N | 104° 5' 19.209 W |
| PBHL (APWU21 12H) | 9055.00 | 149.65 | 5032.37 | 596711.09 | 621681.56 | 32° 38' 24.490 N | 104° 4' 20.351 W |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Annotation |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 8482.04 | 0.00 | 0.00 | 8482.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | KOP 10° DLS |
| 3 | 9382.04 | 90.00 | 79.65 | 9055.00 | 102.94 | 563.63 | 10.00 | 79.65 | 563.63 | LP / 2° DLS Turn |
| 4 | 9899.47 | 90.00 | 90.00 | 9055.00 | 149.55 | 1078.25 | 2.00 | 90.00 | 1078.25 | Hold |
| 5 | 13853.58 | 90.00 | 90.00 | 9055.00 | 149.65 | 5032.37 | 0.00 | 0.00 | 5032.37 | TD |


LEAM Drilling Systems, Inc.

**LEAM DRILLING SYSTEMS LLC**
**2010 East Davis, Conroe, Texas 77301**
**Phone: 936/756-7577, Fax 936/756-7595**


Plan: Plan #1 (12H/OH)
Agate PWU 21
Created By: Brady Deaver Date: 13:53, December 15 2014
Date: _____
Approved: _____ Date: _____

LEAM
Drilling Systems, Inc.

# DEVON ENERGY

**Eddy County, NM (NAD-83)**
**Agate PWU 21**
**12H**

**OH**

**Plan: Plan #1**

# Standard Planning Report

**15 December, 2014**

devon

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 12H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Project:** | Eddy County, NM (NAD-83) | **MD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Site:** | Agate PWU 21 | **North Reference:** | Grid |
| **Well:** | 12H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Project** Eddy County, NM (NAD-83)

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

**Site** Agate PWU 21

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 599,285.26 usft | **Latitude:** | 32° 38' 50.084 N |
| **From:** | Map | **Easting:** | 616,483.03 usft | **Longitude:** | 104° 5' 21.079 W |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.13 ° |

**Well** 12H, 3rd BS SS

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | -2,723.82 usft | **Northing:** | 596,561.44 usft | **Latitude:** | 32° 38' 23.127 N |
| | **+E/-W** | 166.16 usft | **Easting:** | 616,649.19 usft | **Longitude:** | 104° 5' 19.209 W |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | 3,350.80 usft | **Ground Level:** | 3,325.80 usft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | BGGM2014 | 12/15/2014 | 7.60 | 60.39 | 48,409 |

**Design** Plan #1

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.00 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 90.00 |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,482.04 | 0.00 | 0.00 | 8,482.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 9,382.04 | 90.00 | 79.65 | 9,055.00 | 102.94 | 563.63 | 10.00 | 10.00 | 0.00 | 79.65 | |
| 9,899.47 | 90.00 | 90.00 | 9,055.00 | 149.55 | 1,078.25 | 2.00 | 0.00 | 2.00 | 90.00 | |
| 13,853.59 | 90.00 | 90.00 | 9,055.00 | 149.65 | 5,032.37 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL (APWU21 12H) |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 12H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Project:** | Eddy County, NM (NAD-83) | **MD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Site:** | Agate PWU 21 | **North Reference:** | Grid |
| **Well:** | 12H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **SHL (APWU21 12H)** | | | | | | | | | |
| 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 |
| 465.00 | 0.00 | 0.00 | 465.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Salt** | | | | | | | | | |
| 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 |
| 1,130.00 | 0.00 | 0.00 | 1,130.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Tansil** | | | | | | | | | |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,265.00 | 0.00 | 0.00 | 1,265.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Yates** | | | | | | | | | |
| 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 | 0.00 | 0.00 | 1,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 0.00 | 0.00 | 1,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 0.00 | 0.00 | 1,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 0.00 | 0.00 | 1,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 0.00 | 0.00 | 2,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 0.00 | 0.00 | 2,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,165.00 | 0.00 | 0.00 | 2,165.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Queen** | | | | | | | | | |
| 2,200.00 | 0.00 | 0.00 | 2,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 0.00 | 0.00 | 2,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 0.00 | 0.00 | 2,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 0.00 | 0.00 | 2,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,555.00 | 0.00 | 0.00 | 2,555.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Grayburg** | | | | | | | | | |
| 2,600.00 | 0.00 | 0.00 | 2,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 0.00 | 0.00 | 2,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 0.00 | 0.00 | 2,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 0.00 | 0.00 | 2,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 0.00 | 0.00 | 3,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 0.00 | 0.00 | 3,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 0.00 | 0.00 | 3,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 0.00 | 0.00 | 3,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 0.00 | 0.00 | 3,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,445.00 | 0.00 | 0.00 | 3,445.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Delaware** | | | | | | | | | |
| 3,500.00 | 0.00 | 0.00 | 3,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 0.00 | 0.00 | 3,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 0.00 | 0.00 | 3,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 0.00 | 0.00 | 3,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 0.00 | 0.00 | 3,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 12H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Project:** | Eddy County, NM (NAD-83) | **MD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Site:** | Agate PWU 21 | **North Reference:** | Grid |
| **Well:** | 12H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,000.00 | 0.00 | 0.00 | 4,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 0.00 | 0.00 | 4,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 0.00 | 0.00 | 4,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 0.00 | 0.00 | 4,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 0.00 | 0.00 | 4,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 0.00 | 0.00 | 4,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 0.00 | 0.00 | 4,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 0.00 | 0.00 | 4,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 0.00 | 0.00 | 4,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 0.00 | 0.00 | 4,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,975.00 | 0.00 | 0.00 | 4,975.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **1st BS LM** | | | | | | | | | |
| 5,000.00 | 0.00 | 0.00 | 5,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 0.00 | 0.00 | 5,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 0.00 | 0.00 | 5,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 0.00 | 0.00 | 5,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 0.00 | 0.00 | 5,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 0.00 | 0.00 | 5,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 0.00 | 0.00 | 5,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 0.00 | 0.00 | 5,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 0.00 | 0.00 | 5,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 0.00 | 0.00 | 5,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 0.00 | 0.00 | 6,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 6,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 0.00 | 0.00 | 6,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 0.00 | 0.00 | 6,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 0.00 | 0.00 | 6,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 0.00 | 0.00 | 6,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 0.00 | 0.00 | 6,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 0.00 | 0.00 | 6,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,800.00 | 0.00 | 0.00 | 6,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 0.00 | 0.00 | 6,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,000.00 | 0.00 | 0.00 | 7,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,005.00 | 0.00 | 0.00 | 7,005.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **2nd BS LM** | | | | | | | | | |
| 7,100.00 | 0.00 | 0.00 | 7,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 0.00 | 0.00 | 7,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 7,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 0.00 | 0.00 | 7,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 0.00 | 0.00 | 7,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,990.00 | 0.00 | 0.00 | 7,990.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **3rd BS LM** | | | | | | | | | |
| 8,000.00 | 0.00 | 0.00 | 8,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 8,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 8,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 0.00 | 0.00 | 8,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 0.00 | 0.00 | 8,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,482.04 | 0.00 | 0.00 | 8,482.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **KOP 10° DLS** | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 12H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Project:** | Eddy County, NM (NAD-83) | **MD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Site:** | Agate PWU 21 | **North Reference:** | Grid |
| **Well:** | 12H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 8,500.00 | 1.80 | 79.65 | 8,500.00 | 0.05 | 0.28 | 0.28 | 10.00 | 10.00 | 0.00 |
| 8,550.00 | 6.80 | 79.65 | 8,549.84 | 0.72 | 3.96 | 3.96 | 10.00 | 10.00 | 0.00 |
| 8,600.00 | 11.80 | 79.65 | 8,599.17 | 2.17 | 11.90 | 11.90 | 10.00 | 10.00 | 0.00 |
| 8,621.37 | 13.93 | 79.65 | 8,620.00 | 3.03 | 16.58 | 16.58 | 10.00 | 10.00 | 0.00 |
| 3rd BS SS | | | | | | | | | |
| 8,650.00 | 16.80 | 79.65 | 8,647.60 | 4.39 | 24.04 | 24.04 | 10.00 | 10.00 | 0.00 |
| 8,700.00 | 21.80 | 79.65 | 8,694.78 | 7.36 | 40.29 | 40.29 | 10.00 | 10.00 | 0.00 |
| 8,750.00 | 26.80 | 79.65 | 8,740.34 | 11.05 | 60.52 | 60.52 | 10.00 | 10.00 | 0.00 |
| 8,800.00 | 31.80 | 79.65 | 8,783.93 | 15.45 | 84.58 | 84.58 | 10.00 | 10.00 | 0.00 |
| 8,850.00 | 36.80 | 79.65 | 8,825.22 | 20.51 | 112.29 | 112.29 | 10.00 | 10.00 | 0.00 |
| 8,900.00 | 41.80 | 79.65 | 8,863.91 | 26.20 | 143.43 | 143.43 | 10.00 | 10.00 | 0.00 |
| 8,950.00 | 46.80 | 79.65 | 8,899.68 | 32.47 | 177.77 | 177.77 | 10.00 | 10.00 | 0.00 |
| 9,000.00 | 51.80 | 79.65 | 8,932.28 | 39.27 | 215.05 | 215.05 | 10.00 | 10.00 | 0.00 |
| 9,050.00 | 56.80 | 79.65 | 8,961.45 | 46.57 | 254.98 | 254.98 | 10.00 | 10.00 | 0.00 |
| 9,100.00 | 61.80 | 79.65 | 8,986.97 | 54.29 | 297.25 | 297.25 | 10.00 | 10.00 | 0.00 |
| 9,150.00 | 66.80 | 79.65 | 9,008.65 | 62.38 | 341.56 | 341.56 | 10.00 | 10.00 | 0.00 |
| 9,200.00 | 71.80 | 79.65 | 9,026.32 | 70.78 | 387.55 | 387.55 | 10.00 | 10.00 | 0.00 |
| 9,250.00 | 76.80 | 79.65 | 9,039.85 | 79.43 | 434.89 | 434.89 | 10.00 | 10.00 | 0.00 |
| 9,300.00 | 81.80 | 79.65 | 9,049.13 | 88.25 | 483.21 | 483.21 | 10.00 | 10.00 | 0.00 |
| 9,350.00 | 86.80 | 79.65 | 9,054.10 | 97.18 | 532.13 | 532.13 | 10.00 | 10.00 | 0.00 |
| 9,382.04 | 90.00 | 79.65 | 9,055.00 | 102.94 | 563.63 | 563.63 | 10.00 | 10.00 | 0.00 |
| LP / 2° DLS Turn | | | | | | | | | |
| 9,400.00 | 90.00 | 80.01 | 9,055.00 | 106.11 | 581.31 | 581.31 | 2.00 | 0.00 | 2.00 |
| 9,500.00 | 90.00 | 82.01 | 9,055.00 | 121.74 | 680.08 | 680.08 | 2.00 | 0.00 | 2.00 |
| 9,600.00 | 90.00 | 84.01 | 9,055.00 | 133.91 | 779.33 | 779.33 | 2.00 | 0.00 | 2.00 |
| 9,700.00 | 90.00 | 86.01 | 9,055.00 | 142.61 | 878.95 | 878.95 | 2.00 | 0.00 | 2.00 |
| 9,800.00 | 90.00 | 88.01 | 9,055.00 | 147.82 | 978.81 | 978.81 | 2.00 | 0.00 | 2.00 |
| 9,899.47 | 90.00 | 90.00 | 9,055.00 | 149.55 | 1,078.25 | 1,078.25 | 2.00 | 0.00 | 2.00 |
| Hold | | | | | | | | | |
| 10,000.00 | 90.00 | 90.00 | 9,055.00 | 149.55 | 1,178.79 | 1,178.79 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.00 | 90.00 | 9,055.00 | 149.56 | 1,278.79 | 1,278.79 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.00 | 90.00 | 9,055.00 | 149.56 | 1,378.79 | 1,378.79 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.00 | 90.00 | 9,055.00 | 149.56 | 1,478.79 | 1,478.79 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.00 | 90.00 | 9,055.00 | 149.56 | 1,578.79 | 1,578.79 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.00 | 90.00 | 9,055.00 | 149.57 | 1,678.79 | 1,678.79 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.00 | 90.00 | 9,055.00 | 149.57 | 1,778.79 | 1,778.79 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.00 | 90.00 | 9,055.00 | 149.57 | 1,878.79 | 1,878.79 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.00 | 90.00 | 9,055.00 | 149.57 | 1,978.79 | 1,978.79 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.00 | 90.00 | 9,055.00 | 149.58 | 2,078.79 | 2,078.79 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.00 | 90.00 | 9,055.00 | 149.58 | 2,178.79 | 2,178.79 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.00 | 90.00 | 9,055.00 | 149.58 | 2,278.79 | 2,278.79 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.00 | 90.00 | 9,055.00 | 149.58 | 2,378.79 | 2,378.79 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.00 | 90.00 | 9,055.00 | 149.59 | 2,478.79 | 2,478.79 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.00 | 90.00 | 9,055.00 | 149.59 | 2,578.79 | 2,578.79 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.00 | 90.00 | 9,055.00 | 149.59 | 2,678.79 | 2,678.79 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.00 | 90.00 | 9,055.00 | 149.59 | 2,778.79 | 2,778.79 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.00 | 90.00 | 9,055.00 | 149.60 | 2,878.79 | 2,878.79 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.00 | 90.00 | 9,055.00 | 149.60 | 2,978.79 | 2,978.79 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.00 | 90.00 | 9,055.00 | 149.60 | 3,078.79 | 3,078.79 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.00 | 90.00 | 9,055.00 | 149.60 | 3,178.79 | 3,178.79 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 90.00 | 90.00 | 9,055.00 | 149.61 | 3,278.79 | 3,278.79 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.00 | 90.00 | 9,055.00 | 149.61 | 3,378.79 | 3,378.79 | 0.00 | 0.00 | 0.00 |
| 12,300.00 | 90.00 | 90.00 | 9,055.00 | 149.61 | 3,478.79 | 3,478.79 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 12H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Project:** | Eddy County, NM (NAD-83) | **MD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Site:** | Agate PWU 21 | **North Reference:** | Grid |
| **Well:** | 12H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 12,400.00 | 90.00 | 90.00 | 9,055.00 | 149.61 | 3,578.79 | 3,578.79 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.00 | 90.00 | 9,055.00 | 149.62 | 3,678.79 | 3,678.79 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.00 | 90.00 | 9,055.00 | 149.62 | 3,778.79 | 3,778.79 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.00 | 90.00 | 9,055.00 | 149.62 | 3,878.79 | 3,878.79 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.00 | 90.00 | 9,055.00 | 149.62 | 3,978.79 | 3,978.79 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.00 | 90.00 | 9,055.00 | 149.63 | 4,078.79 | 4,078.79 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 90.00 | 90.00 | 9,055.00 | 149.63 | 4,178.79 | 4,178.79 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 90.00 | 90.00 | 9,055.00 | 149.63 | 4,278.79 | 4,278.79 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 90.00 | 90.00 | 9,055.00 | 149.63 | 4,378.79 | 4,378.79 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 90.00 | 90.00 | 9,055.00 | 149.64 | 4,478.79 | 4,478.79 | 0.00 | 0.00 | 0.00 |
| 13,400.00 | 90.00 | 90.00 | 9,055.00 | 149.64 | 4,578.79 | 4,578.79 | 0.00 | 0.00 | 0.00 |
| 13,500.00 | 90.00 | 90.00 | 9,055.00 | 149.64 | 4,678.79 | 4,678.79 | 0.00 | 0.00 | 0.00 |
| 13,600.00 | 90.00 | 90.00 | 9,055.00 | 149.64 | 4,778.79 | 4,778.79 | 0.00 | 0.00 | 0.00 |
| 13,700.00 | 90.00 | 90.00 | 9,055.00 | 149.65 | 4,878.79 | 4,878.79 | 0.00 | 0.00 | 0.00 |
| 13,800.00 | 90.00 | 90.00 | 9,055.00 | 149.65 | 4,978.79 | 4,978.79 | 0.00 | 0.00 | 0.00 |
| 13,853.59 | 90.00 | 90.00 | 9,055.00 | 149.65 | 5,032.37 | 5,032.37 | 0.00 | 0.00 | 0.00 |
| TD - PBHL (APWU21 12H) | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| SHL (APWU21 12H)<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 596,561.44 | 616,649.19 | 32° 38' 23.127 N | 104° 5' 19.209 W |
| PBHL (APWU21 12H)<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 9,055.00 | 149.65 | 5,032.37 | 596,711.09 | 621,681.56 | 32° 38' 24.490 N | 104° 4' 20.351 W |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 465.00 | 465.00 | Salt | | 0.00 | |
| 1,130.00 | 1,130.00 | Tansil | | 0.00 | |
| 1,265.00 | 1,265.00 | Yates | | 0.00 | |
| 2,165.00 | 2,165.00 | Queen | | 0.00 | |
| 2,555.00 | 2,555.00 | Grayburg | | 0.00 | |
| 3,445.00 | 3,445.00 | Delaware | | 0.00 | |
| 4,975.00 | 4,975.00 | 1st BS LM | | 0.00 | |
| 7,005.00 | 7,005.00 | 2nd BS LM | | 0.00 | |
| 7,990.00 | 7,990.00 | 3rd BS LM | | 0.00 | |
| 8,621.37 | 8,620.00 | 3rd BS SS | | 0.00 | |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 12H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Project:** | Eddy County, NM (NAD-83) | **MD Reference:** | 3325.8' GL + 25' RKB @ 3350.80usft |
| **Site:** | Agate PWU 21 | **North Reference:** | Grid |
| **Well:** | 12H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 8,482.04 | 8,482.04 | 0.00 | 0.00 | KOP 10° DLS |
| 9,382.04 | 9,055.00 | 102.94 | 563.63 | LP / 2° DLS Turn |
| 9,899.47 | 9,055.00 | 149.55 | 1,078.25 | Hold |
| 13,853.59 | 9,055.00 | 149.65 | 5,032.37 | TD |