

3/21/2015 DATE IN	SUSPENSE	MAM ENGINEER	3/30/2015 LOGGED IN	NSL TYPE	PMA M150845 704 APP NO.
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



ADMINISTRATIVE APPLICATION CHECKLIST

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

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

- [D] Other: Specify _____

- NSL 7254
 - Devon Energy Production Company, L.P.
 6137

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or Does Not Apply

- [A] ☒ Working, Royalty or Overriding Royalty Interest Owners

- [B] ☐ Offset Operators, Leaseholders or Surface Owner

- [C] ☐ Application is One Which Requires Published Legal Notice

- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

- [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

- [F] ☐ Waivers are Attached

Well
 - menlynw2722
 Federal 14
 30-015-42385
 POW
 -Lost Tank
 Delaware
 40299

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **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.

Cari Allen
 Print or Type Name

Cari Allen
 Signature

Land Supervisor
 Title

3/27/15
 Date

cari.allen@dvn.com
 e-mail Address



Devon Energy Production Company, L.P.
333 West Sheridan Avenue
Oklahoma City, OK 73102

405 235 3611 Phone
www.devonenergy.com

Writer's direct dial 405 552 3365
zach.graham@dvn.com

March 27, 2015

VIA FED EX OVERNIGHT MAIL

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

Re: Application for a Non-Standard Location
Merlyn 27-22 Fed 1H
Sections 27/22, T21S-R31E
Eddy County, New Mexico

Dear Sir/Madam:

Devon Energy Production Company, L.P. ("Devon") has drilled the referenced horizontal well to an approximate total vertical depth of 7,847' and an approximate total measured depth of 18,797' in order to test the Lower Brushy Canyon, Delaware formation. During the drilling of this well, the actual well path inadvertently exceeded the 330' setback for a legal location in the 320 acre project area. Based on Devon's calculations approximately 3,629' (8,884' to 12,513' MD) of the horizontal wellbore is outside of the 330' setback as required by OCD rules. The point of maximum deviation from the 330' setback occurs at 8,884' MD at which point Devon's wellbore is unorthodox by approximately 214'.

Devon respectfully requests that the Commission administratively approve this application for a non-standard location in accordance with Division Rule 104(F) (3). This non-standard location affects the leasehold owners in unit letters G, J and O of section 27-21S-31E Eddy County, NM. Devon owns 100% of the working interest under the affected lands contained within section 27-21S-31E which is covered by State of New Mexico Lease VO-8748.

Attached for your review are a State of New Mexico form C-102, directional surveys, a structure map on top of the Lower Brushy Canyon, Delaware formation and a plat showing leasehold ownership, wellbore path and the affected acreage.

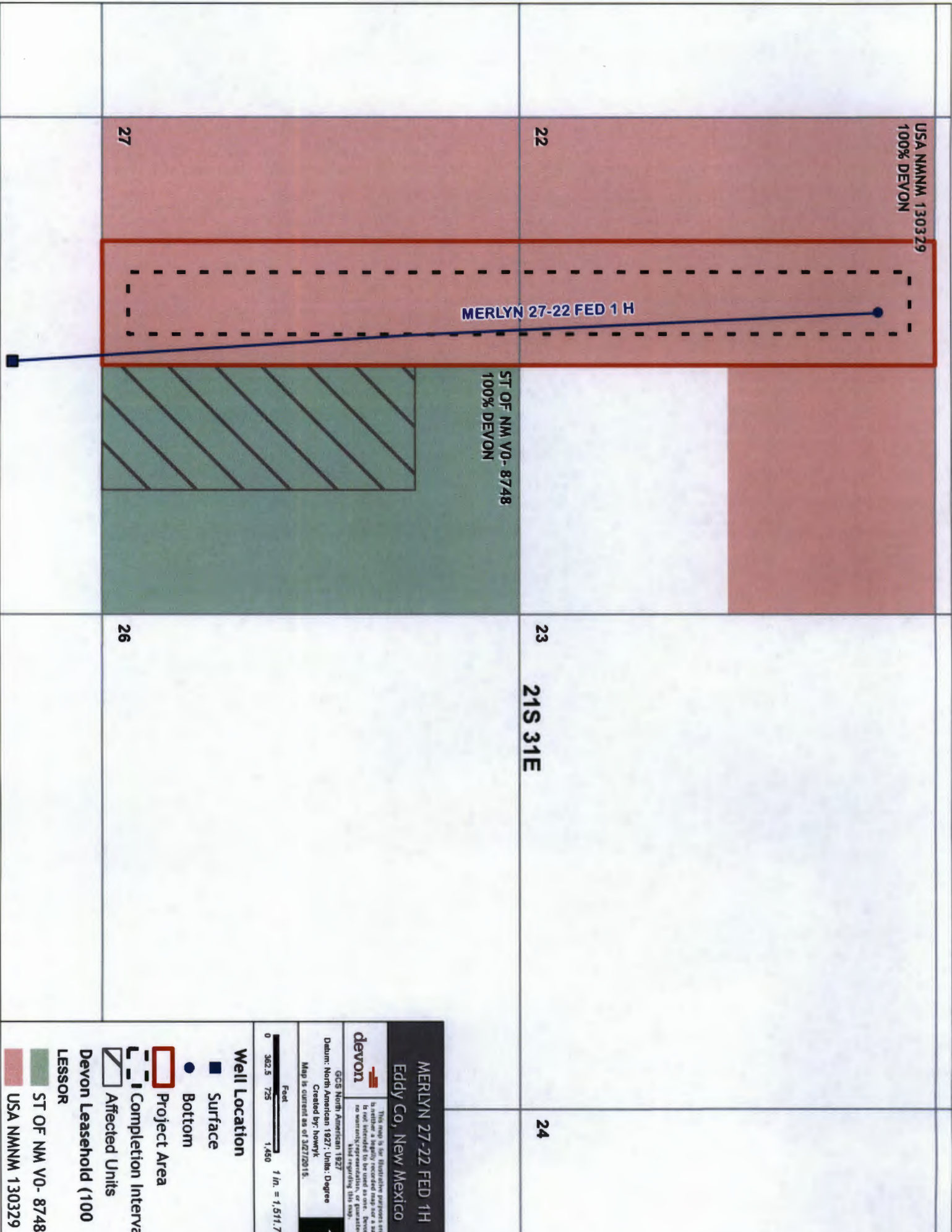
If you have any questions concerning this application, please contact the undersigned at (405) 552-3365.

Sincerely,

DEVON ENERGY PRODUCTION COMPANY, L.P.

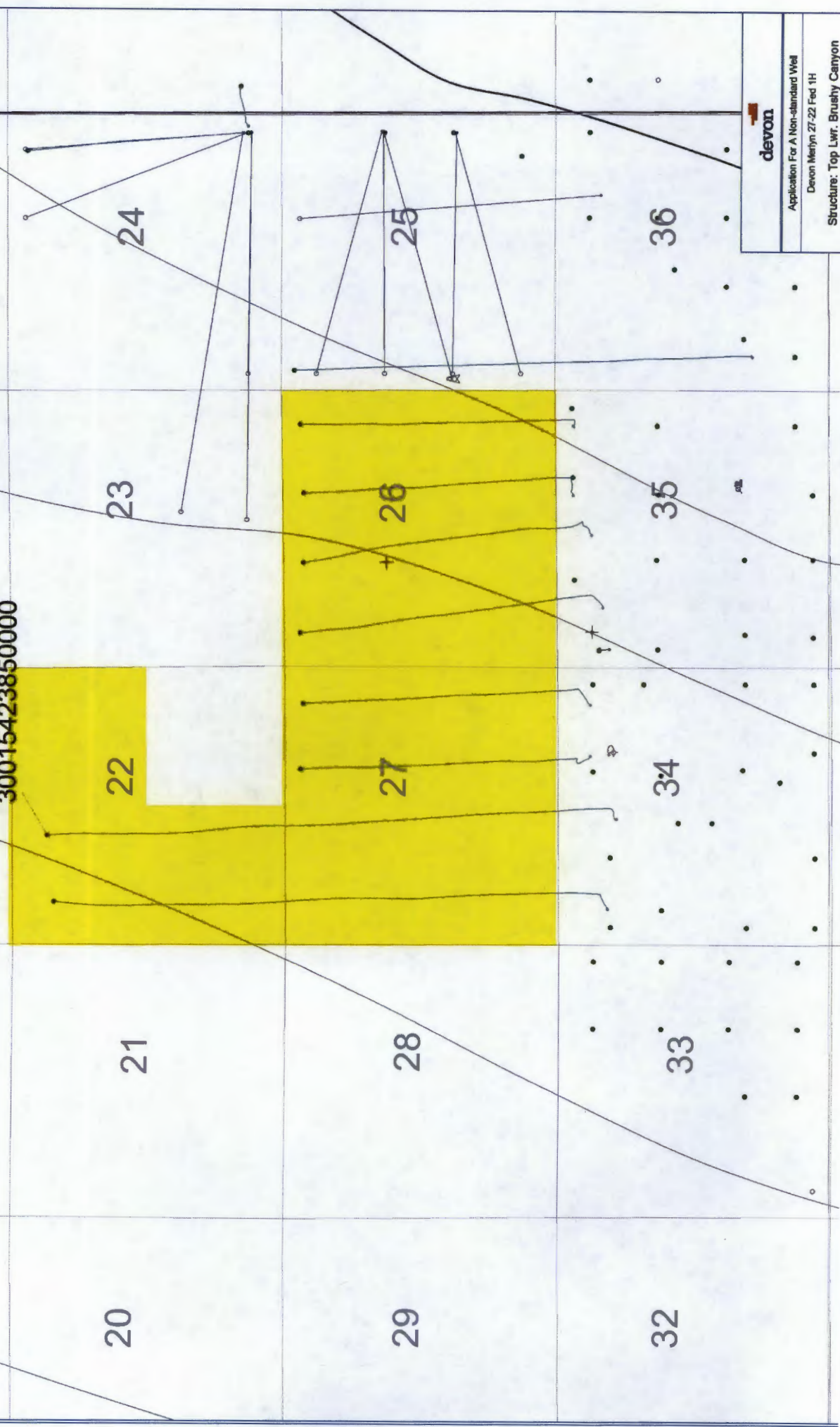
A handwritten signature in black ink, appearing to read "Zach Graham".

Zach Graham
Landman



21S 31E 143000 13 14 4400

DEVON
MERLYN 27-22 FEDERAL
1H
30015423850000



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

☐ AMENDED REPORT

¹ API Number 30-015-42385		² Pool Code 40299	³ Pool Name Lost Tank, Delaware	
⁴ Property Code 313259	⁵ Property Name MERLYN 27-22 FED			⁶ Well Number 1H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.			⁹ Elevation 3480.8

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	34	21 S	31 E		1165	NORTH	2385	WEST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	22	21 S	31 E		330	NORTH	1980	WEST	EDDY

¹² Dedicated Acres 320 ac	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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NW CORNER SEC. 22 LAT. = 32.313676"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713750.18	1983 BOTTOM OF HOLE LAT. = 32.411111"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713750.18	1/4 CORNER SEC. 22 LAT. = 32.411111"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713750.18	NE CORNER SEC. 22 LAT. = 32.4713537"N LONG. = 103.7571337"W NAD83 EAST (FT) N = 535668.02 E = 719033.95
W/4 CORNER SEC. 22 LAT. = 32.4841111"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713750.18	BOTTOM OF HOLE LAT. = 32.4704584"N LONG. = 103.7687878"W NAD83 EAST (FT) N = 535668.02 E = 713750.18	1/4 CORNER SEC. 22 LAT. = 32.4841111"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713750.18	E/4 CORNER SEC. 22 LAT. = 32.4841111"N LONG. = 103.7571337"W NAD83 EAST (FT) N = 535668.02 E = 719033.95
SECTION CORNER LAT. = 32.4580950"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713777.17	SECTION CORNER LAT. = 32.4580950"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713777.17	SECTION CORNER LAT. = 32.4580950"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 535668.02 E = 713777.17	SECTION CORNER LAT. = 32.4580950"N LONG. = 103.7571337"W NAD83 EAST (FT) N = 535668.02 E = 719033.95
W/4 CORNER SEC. 27 LAT. = 32.4480950"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 527743.42 E = 713791.11	W/4 CORNER SEC. 27 LAT. = 32.4480950"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 527743.42 E = 713791.11	W/4 CORNER SEC. 27 LAT. = 32.4480950"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 527743.42 E = 713791.11	E/4 CORNER SEC. 27 LAT. = 32.4480950"N LONG. = 103.7571337"W NAD83 EAST (FT) N = 527743.42 E = 719033.95
SECTION CORNER LAT. = 32.4423277"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 525101.25 E = 713804.14	SECTION CORNER LAT. = 32.4423277"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 525101.25 E = 713804.14	SECTION CORNER LAT. = 32.4423277"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 525101.25 E = 713804.14	SECTION CORNER LAT. = 32.4423277"N LONG. = 103.7571337"W NAD83 EAST (FT) N = 525101.25 E = 719033.95
W/4 CORNER SEC. 34 LAT. = 32.4350704"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 522444.02 E = 713817.53	W/4 CORNER SEC. 34 LAT. = 32.4350704"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 522444.02 E = 713817.53	W/4 CORNER SEC. 34 LAT. = 32.4350704"N LONG. = 103.7742867"W NAD83 EAST (FT) N = 522444.02 E = 713817.53	E/4 CORNER SEC. 34 LAT. = 32.4350704"N LONG. = 103.7571337"W NAD83 EAST (FT) N = 522444.02 E = 719033.95

McMillan, Michael, EMNRD

From: Graham, Zach <Zach.Graham@dvn.com>
Sent: Tuesday, March 31, 2015 10:22 AM
To: McMillan, Michael, EMNRD
Subject: RE: Merlyn 27-22 Fed 1H NSL Application

Michael-

Here are the footages from the west line of the sections.

~~8,884' MD - 2524.2127' FWL of section 27-21S-31E~~
8,931' MD - 2522.5625' FWL of Section 27-21S-31E ← round 2523'
12,513' MD - 2309.7148' FWL of section 27-21S-31E ← round to 2310' FWL
18,609' MD - 2061.5465' FWL of section 22-21S-31E ← round 2062' FWL

Thank you,
Zach

From: McMillan, Michael, EMNRD [<mailto:Michael.McMillan@state.nm.us>]
Sent: Tuesday, March 31, 2015 10:52 AM
To: Graham, Zach
Subject: RE: Merlyn 27-22 Fed 1H NSL Application

Zach
Can you provide the East and West footages?
Thank You
Michael McMillan

From: Graham, Zach [<mailto:Zach.Graham@dvn.com>]
Sent: Tuesday, March 31, 2015 9:48 AM
To: McMillan, Michael, EMNRD
Subject: Merlyn 27-22 Fed 1H NSL Application

Michael-

Below please find the additional information you requested.

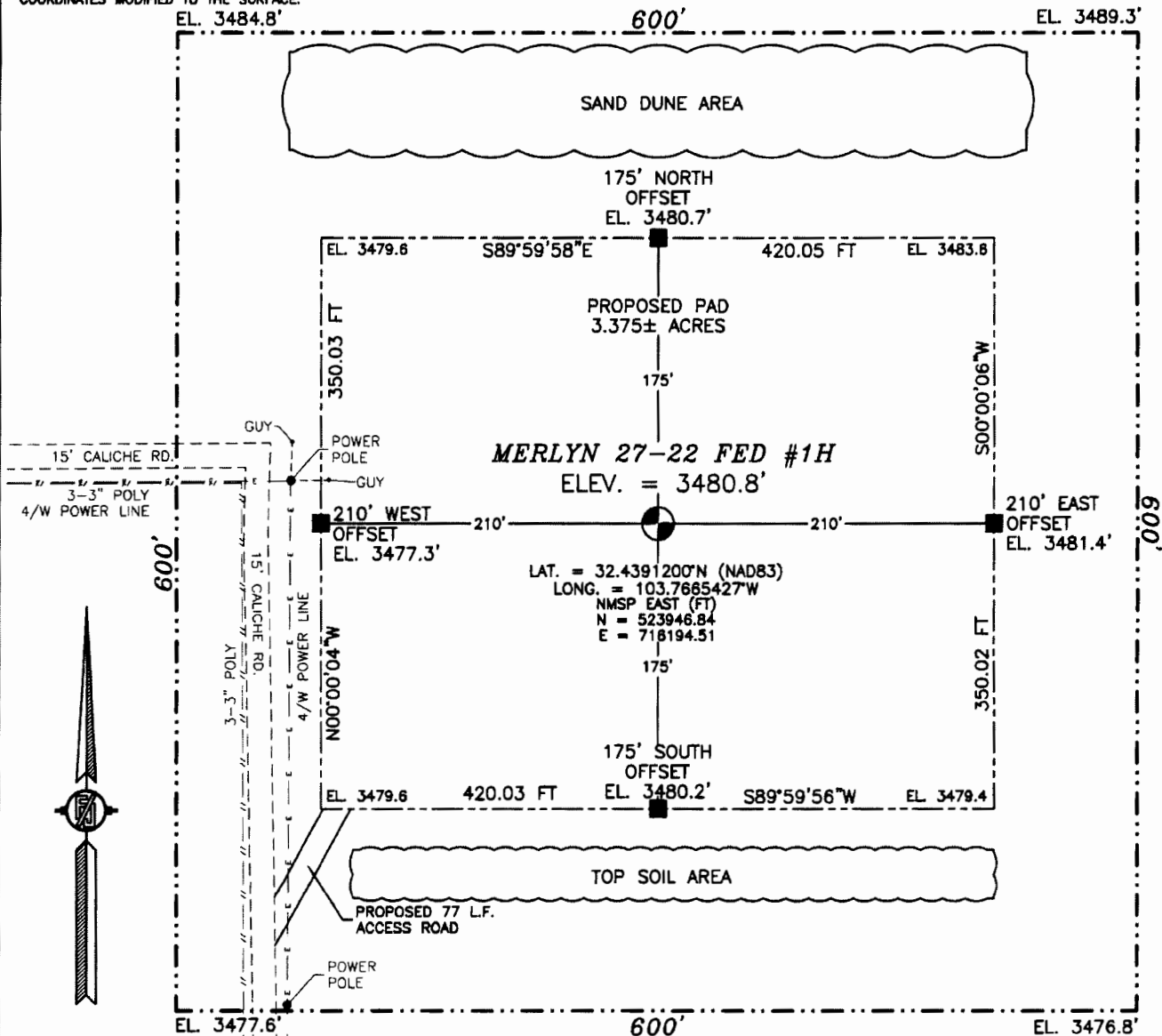
First Perforation in Section 27-22S-31E = 8,931' MD (376.95 feet from the South line of Section 27-22S-31E) ← round 376'
Last Perforation in Section 22-22S-31E = 18,609' MD (528.17 feet from the North line of Section 22-22S-31E) ← round 528'

Wellbore outside of the 330' setback:

8,884' MD (329.95 feet from the South line of section 27-22-31E) ← 45' less
12,513' MD (3,958.95 feet from the South line of section 27-22S-31E)

**SECTION 34, TOWNSHIP 21 SOUTH, RANGE 31 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.



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM U.S. HWY. 62/180 AND LOUIS WHITLOCK ROAD (WIPP RD.) GO SOUTH ON LOUIS WHITLOCK ROAD 7.3 MILES, TURN RIGHT AND GO WEST 688', TURN RIGHT AND GO NORTH D.36 MILES WHERE ROAD BENDS LEFT AND LOCATION IS NORTHEAST 210'.

DEVON ENERGY PRODUCTION COMPANY, L.P.

MERLYN 27-22 FED #1H

LOCATED 1165 FT. FROM THE NORTH LINE

AND 2385 FT. FROM THE WEST LINE OF

SECTION 34, TOWNSHIP 21 SOUTH,

RANGE 31 EAST, N.M.P.M.

EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 7, 2013

SURVEY NO. 1825B

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

SECTION 34, TOWNSHIP 21 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
LIVINGSTON RIDGE

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
MERLYN 27-22 FED #1H

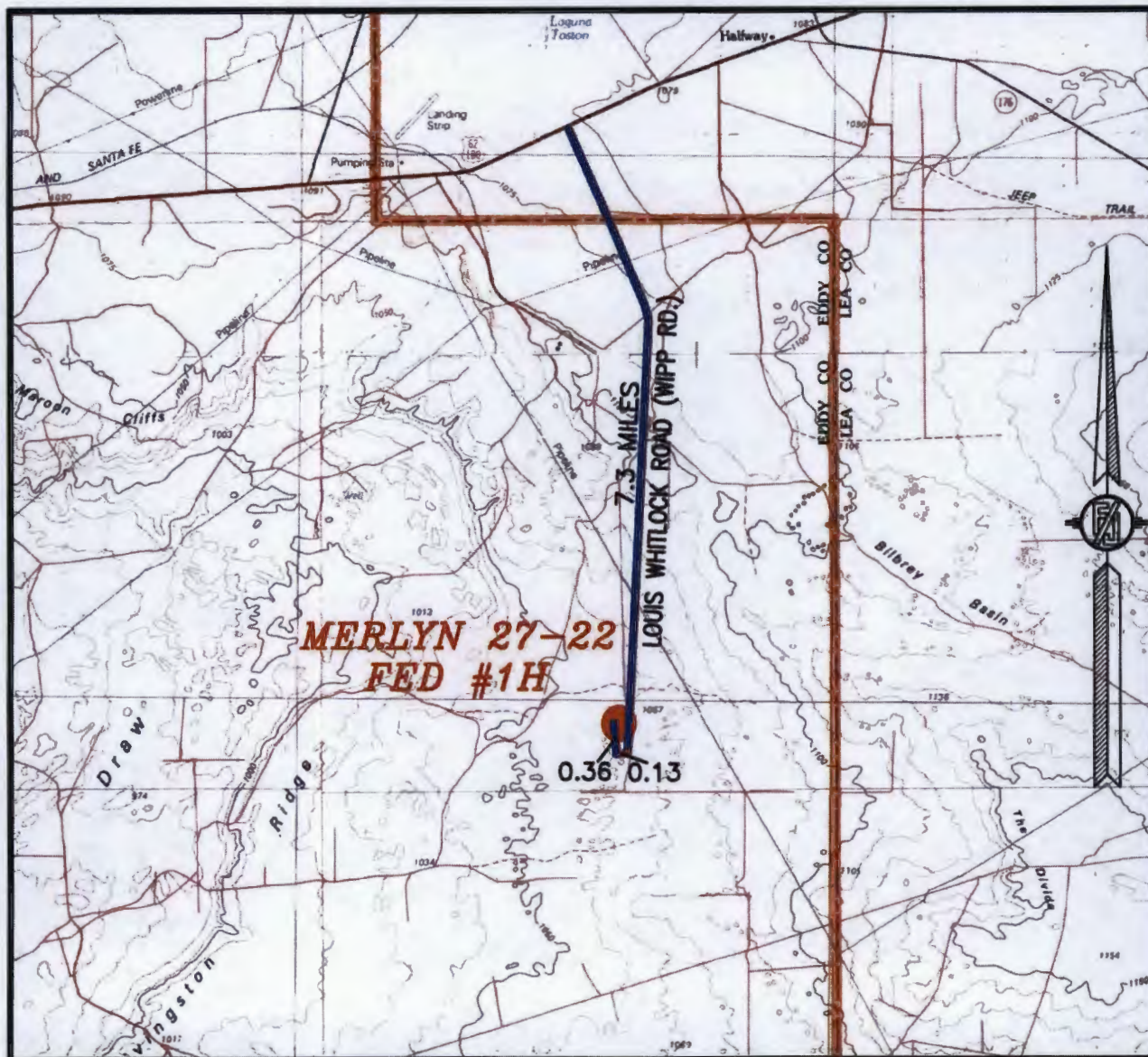
LOCATED 1165 FT. FROM THE NORTH LINE
AND 2385 FT. FROM THE WEST LINE OF
SECTION 34, TOWNSHIP 21 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 7, 2013

SURVEY NO. 1825B

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

SECTION 34, TOWNSHIP 21 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM U.S. HWY. 62/180 AND LOUIS WHITLOCK ROAD (WIPP RD.) GO SOUTH ON LOUIS WHITLOCK ROAD 7.3 MILES, TURN RIGHT AND GO WEST 688', TURN RIGHT AND GO NORTH 0.36 MILES WHERE ROAD BENDS LEFT AND LOCATION IS NORTHEAST 210'.

DEVON ENERGY PRODUCTION COMPANY, L.P.

MERLYN 27-22 FED #1H

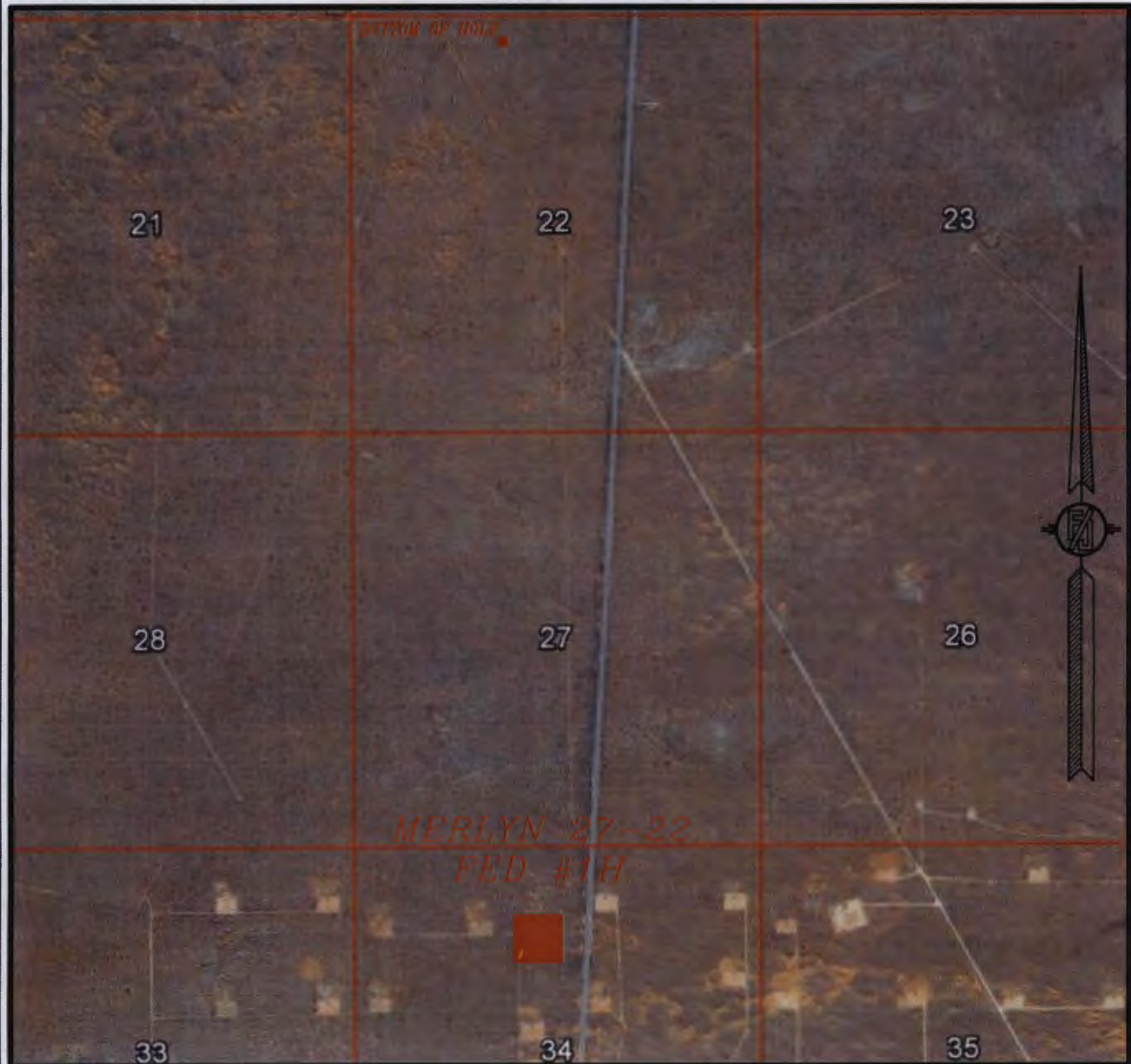
LOCATED 1165 FT. FROM THE NORTH LINE
AND 2385 FT. FROM THE WEST LINE OF
SECTION 34, TOWNSHIP 21 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 7, 2013

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

SURVEY NO. 1825B
CARLSBAD, NEW MEXICO

SECTION 34, TOWNSHIP 21 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MARCH 2012

DEVON ENERGY PRODUCTION COMPANY, L.P.
MERLYN 27-22 FED #1H
LOCATED 1165 FT. FROM THE NORTH LINE
AND 2385 FT. FROM THE WEST LINE OF
SECTION 34, TOWNSHIP 21 SOUTH,
RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

NOVEMBER 7, 2013

SURVEY NO. 1825B

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

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
 Site: Merlyn 27-22 Fed
 Well: 1H
 Wellbore: OH
 Design: Plan #8

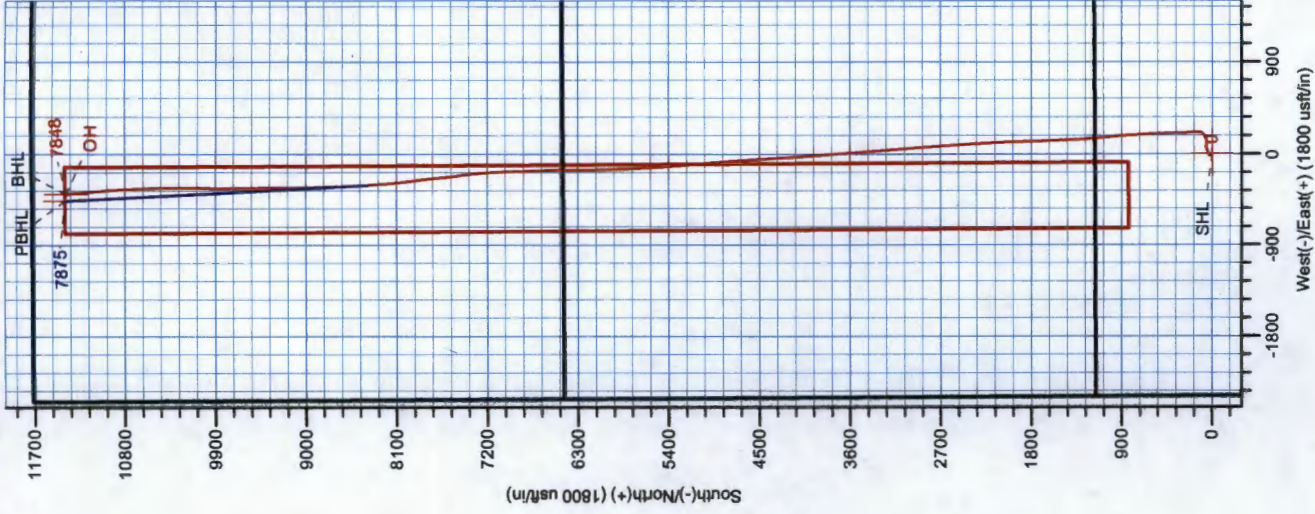
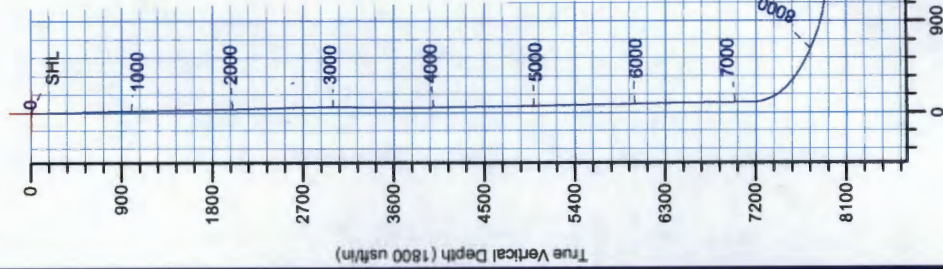


Azimuths to Grid North
 True North: -0.30°
 Magnetic North: 7.15°
 Strength: 48348.1nT
 Dip Angle: 60.26°
 Date: 10/14/2014
 Model: BGGM2014

PROJECT DETAILS: Eddy County, NM (NAD-83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (M27-22F 1H)	0.00	0.00	0.00	523946.84	716194.51	32° 28' 20.832 N	103° 45' 59.554 W
BHL (M27-22F 1H)	7847.64	11387.28	-395.85	535334.10	715798.66	32° 28' 13.532 N	103° 46' 3.469 W
PBHL (M27-22F 1H)	7875.00	11398.10	-463.02	535344.94	715731.49	32° 28' 13.643 N	103° 46' 4.252 W



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

Plan: Plan #8 (1H/OH)
 Created By: Brady Deever
 Date: 13/57, December 20 2014
 Approved: _____
 Date: _____



DEVON ENERGY

Eddy County, NM (NAD-83)

Merlyn 27-22 Fed

1H

OH

Design: OH

Standard Survey Report

29 December, 2014





LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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	Merlyn 27-22 Fed				
Site Position:		Northing:	523,946.84 usft	Latitude:	32° 26' 20.832 N
From:	Map	Easting:	716,194.51 usft	Longitude:	103° 45' 59.554 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.30 °

Well	1H, Brushy Canyon					
Well Position	+N/-S	0.00 usft	Northing:	523,946.84 usft	Latitude:	32° 26' 20.832 N
	+E/-W	0.00 usft	Easting:	716,194.51 usft	Longitude:	103° 45' 59.554 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,480.80 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/14/2014	7.45	60.26	48,348

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	357.67	

Survey Program	Date	12/29/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
159.00	7,049.00	Survey #1 (OH)	MWD-ISCWSA	MWD - Standard	
7,134.00	18,351.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM	
18,797.00	18,797.00	Survey #3 (OH)	Project	Projection	

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 (M27-22F 1H)										
159.00	0.48	346.55	159.00	0.65	-0.15	0.65	0.30	0.30	0.00	
323.00	0.62	1.67	322.99	2.20	-0.29	2.21	0.12	0.09	9.22	
422.00	1.19	329.46	421.98	3.62	-0.80	3.65	0.75	0.58	-32.54	
544.00	1.49	323.88	543.95	6.00	-2.37	6.09	0.27	0.25	-4.57	
839.00	2.02	318.87	838.81	13.01	-8.06	13.33	0.19	0.18	-1.70	



LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
927.00	1.07	324.27	926.77	14.85	-9.56	15.22	1.09	-1.08	6.14
1,023.00	1.58	323.09	1,022.75	16.63	-10.87	17.06	0.53	0.53	-1.23
1,114.00	1.58	330.56	1,113.71	18.73	-12.24	19.21	0.23	0.00	8.21
1,205.00	1.49	331.96	1,204.68	20.86	-13.42	21.39	0.11	-0.10	1.54
1,296.00	1.32	334.38	1,295.65	22.85	-14.43	23.42	0.20	-0.19	2.66
1,388.00	1.19	347.26	1,387.63	24.74	-15.09	25.33	0.34	-0.14	14.00
1,483.00	1.10	3.69	1,482.61	26.61	-15.25	27.21	0.36	-0.09	17.29
1,577.00	1.01	24.17	1,576.60	28.27	-14.86	28.85	0.41	-0.10	21.79
1,672.00	1.41	52.69	1,671.58	29.74	-13.58	30.27	0.75	0.42	30.02
1,767.00	2.11	61.48	1,766.53	31.28	-11.12	31.71	0.79	0.74	9.25
1,861.00	2.68	68.55	1,860.45	32.91	-7.55	33.19	0.68	0.61	7.52
1,956.00	3.12	69.65	1,955.33	34.63	-3.06	34.72	0.47	0.46	1.16
2,051.00	3.52	70.88	2,050.17	36.48	2.12	36.36	0.43	0.42	1.29
2,145.00	3.52	67.37	2,143.99	38.54	7.51	38.20	0.23	0.00	-3.73
2,240.00	3.60	68.47	2,238.81	40.75	12.98	40.19	0.11	0.08	1.16
2,334.00	4.31	65.87	2,332.58	43.28	18.94	42.47	0.78	0.76	-2.77
2,430.00	4.79	65.13	2,428.28	46.44	25.87	45.35	0.50	0.50	-0.77
2,525.00	5.01	67.46	2,522.93	49.70	33.30	48.30	0.31	0.23	2.45
2,620.00	4.79	68.38	2,617.58	52.75	40.82	51.05	0.25	-0.23	0.97
2,715.00	4.31	70.75	2,712.28	55.39	47.88	53.40	0.54	-0.51	2.49
2,809.00	4.09	70.36	2,806.03	57.68	54.37	55.42	0.24	-0.23	-0.41
2,903.00	3.69	78.18	2,899.82	59.43	60.49	56.92	0.71	-0.43	8.32
2,998.00	3.38	89.69	2,994.64	60.07	66.28	57.32	0.81	-0.33	12.12
3,093.00	3.69	98.26	3,089.46	59.64	72.11	56.66	0.64	0.33	9.02
3,188.00	4.09	101.16	3,184.24	58.55	78.46	55.31	0.47	0.42	3.05
3,284.00	4.09	95.36	3,279.99	57.57	85.22	54.05	0.43	0.00	-6.04
3,378.00	3.30	95.36	3,373.80	57.00	91.26	53.24	0.84	-0.84	0.00
3,474.00	2.42	102.79	3,469.68	56.29	95.98	52.34	0.99	-0.92	7.74
3,568.00	2.42	116.76	3,563.59	54.96	99.69	50.86	0.63	0.00	14.86
3,663.00	2.99	109.77	3,658.49	53.22	103.81	48.95	0.69	0.60	-7.36
3,757.00	4.00	85.96	3,752.32	52.62	109.39	48.13	1.86	1.07	-25.33
3,852.00	4.48	73.65	3,847.06	53.90	116.26	49.13	1.08	0.51	-12.96
3,947.00	3.91	74.18	3,941.80	55.83	122.93	50.78	0.60	-0.60	0.56
4,024.00	3.52	75.28	4,018.64	57.14	127.74	51.90	0.51	-0.51	1.43
4,132.00	2.90	75.28	4,126.47	58.68	133.59	53.20	0.57	-0.57	0.00
4,226.00	2.90	76.16	4,220.35	59.85	138.20	54.18	0.05	0.00	0.94
4,321.00	2.90	74.27	4,315.23	61.08	142.85	55.22	0.10	0.00	-1.99
4,417.00	2.80	74.18	4,411.11	62.38	147.44	56.33	0.10	-0.10	-0.09
4,511.00	2.60	71.45	4,505.01	63.68	151.67	57.46	0.25	-0.21	-2.90
4,606.00	2.50	66.75	4,599.91	65.18	155.62	58.80	0.24	-0.11	-4.95
4,700.00	2.50	64.47	4,693.82	66.88	159.35	60.34	0.11	0.00	-2.43
4,794.00	2.40	61.17	4,787.74	68.71	162.93	62.03	0.18	-0.11	-3.51



LEAM Drilling Systems LLC

Survey Report



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
4,889.00	2.20	57.57	4,882.66	70.65	166.21	63.83	0.26	-0.21	-3.79
4,984.00	2.20	56.78	4,977.59	72.62	169.27	65.68	0.03	0.00	-0.83
5,079.00	1.80	56.38	5,072.53	74.45	172.04	67.39	0.42	-0.42	-0.42
5,173.00	2.20	55.46	5,166.48	76.29	174.76	69.12	0.43	0.43	-0.98
5,265.00	2.20	57.48	5,258.41	78.24	177.70	70.95	0.08	0.00	2.20
5,369.00	2.20	55.57	5,362.33	80.44	181.03	73.01	0.07	0.00	-1.84
5,488.00	2.11	55.82	5,481.25	82.96	184.73	75.38	0.08	-0.08	0.21
5,583.00	2.02	54.36	5,576.18	84.92	187.53	77.23	0.11	-0.09	-1.54
5,643.00	1.89	49.79	5,636.15	86.18	189.15	78.41	0.34	-0.22	-7.62
5,737.00	1.80	44.87	5,730.10	88.22	191.37	80.37	0.19	-0.10	-5.23
5,834.00	1.71	43.07	5,827.06	90.36	193.44	82.42	0.11	-0.09	-1.86
5,938.00	1.58	34.89	5,931.01	92.67	195.32	84.65	0.26	-0.13	-7.87
6,024.00	1.49	33.35	6,016.98	94.58	196.61	86.50	0.12	-0.10	-1.79
6,118.00	1.32	33.35	6,110.95	96.50	197.88	88.38	0.18	-0.18	0.00
6,214.00	1.32	33.04	6,206.93	98.35	199.09	90.18	0.01	0.00	-0.32
6,308.00	1.19	32.47	6,300.91	100.08	200.20	91.86	0.14	-0.14	-0.61
6,403.00	1.10	33.18	6,395.89	101.68	201.23	93.41	0.10	-0.09	0.75
6,498.00	0.88	29.75	6,490.87	103.07	202.09	94.77	0.24	-0.23	-3.61
6,593.00	0.62	36.39	6,585.86	104.12	202.76	95.79	0.29	-0.27	6.99
6,688.00	0.62	48.38	6,680.86	104.88	203.45	96.52	0.14	0.00	12.62
6,782.00	0.48	48.38	6,774.85	105.48	204.12	97.09	0.15	-0.15	0.00
6,972.00	0.31	22.06	6,964.85	106.48	204.91	98.06	0.13	-0.09	-13.85
7,049.00	0.31	22.06	7,041.85	106.87	205.07	98.44	0.00	0.00	0.00
7,134.00	0.60	52.00	7,126.85	107.35	205.50	98.91	0.43	0.34	35.22
7,165.00	1.60	7.20	7,157.84	107.88	205.69	99.43	4.03	3.23	-144.52
7,197.00	4.80	2.60	7,189.79	109.67	205.80	101.21	10.02	10.00	-14.38
7,229.00	8.60	6.30	7,221.56	113.38	206.13	104.91	11.95	11.88	11.56
7,260.00	12.30	6.10	7,252.04	118.97	206.73	110.47	11.94	11.94	-0.65
7,292.00	16.40	4.50	7,283.04	126.87	207.45	118.33	12.87	12.81	-5.00
7,323.00	20.00	1.50	7,312.48	136.53	207.93	127.97	12.00	11.61	-9.68
7,355.00	23.50	1.20	7,342.20	148.39	208.21	139.80	10.94	10.94	-0.94
7,387.00	26.90	0.60	7,371.15	162.01	208.42	153.40	10.65	10.63	-1.88
7,418.00	30.90	359.60	7,398.28	176.98	208.44	168.36	13.00	12.90	-3.23
7,450.00	35.10	358.70	7,425.12	194.41	208.17	185.78	13.21	13.13	-2.81
7,482.00	39.40	357.50	7,450.58	213.76	207.52	205.15	13.63	13.44	-3.75
7,513.00	43.00	357.70	7,473.90	234.16	206.66	225.56	11.62	11.61	0.65
7,545.00	46.00	357.10	7,496.73	256.56	205.64	247.99	9.47	9.38	-1.88
7,576.00	47.70	358.20	7,517.93	279.16	204.72	270.60	6.06	5.48	3.55
7,608.00	49.30	358.50	7,539.13	303.11	204.03	294.57	5.05	5.00	0.94
7,636.00	51.10	358.90	7,557.05	324.62	203.54	316.08	6.52	6.43	1.43
7,667.00	52.60	359.10	7,576.20	348.99	203.12	340.45	4.87	4.84	0.65
7,699.00	54.60	358.90	7,595.19	374.74	202.67	366.19	6.27	6.25	-0.63



LEAM Drilling Systems LLC

Survey Report



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Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
7,729.00	56.30	358.40	7,612.20	399.45	202.08	390.90	5.83	5.67	-1.67
7,761.00	57.90	357.70	7,629.58	426.30	201.17	417.77	5.33	5.00	-2.19
7,793.00	59.20	357.50	7,646.28	453.57	200.02	445.06	4.10	4.06	-0.63
7,825.00	60.10	357.00	7,662.45	481.15	198.70	472.68	3.12	2.81	-1.56
7,856.00	61.00	357.10	7,677.69	508.11	197.31	499.67	2.92	2.90	0.32
7,888.00	62.30	357.00	7,692.88	536.24	195.86	527.83	4.07	4.06	-0.31
7,920.00	63.30	357.00	7,707.51	564.66	194.37	556.29	3.13	3.13	0.00
7,951.00	64.30	357.30	7,721.20	592.44	192.99	584.10	3.34	3.23	0.97
7,983.00	65.20	357.30	7,734.85	621.35	191.63	613.04	2.81	2.81	0.00
8,015.00	66.10	357.10	7,748.04	650.47	190.20	642.20	2.87	2.81	-0.63
8,046.00	66.90	357.10	7,760.40	678.86	188.76	670.62	2.58	2.58	0.00
8,077.00	67.60	357.10	7,772.39	707.41	187.32	699.21	2.26	2.26	0.00
8,109.00	68.30	357.10	7,784.40	737.03	185.82	728.87	2.19	2.19	0.00
8,141.00	69.10	356.80	7,796.03	766.80	184.23	758.68	2.65	2.50	-0.94
8,173.00	69.80	356.60	7,807.26	796.72	182.50	788.64	2.26	2.19	-0.63
8,204.00	70.60	356.40	7,817.76	825.83	180.72	817.80	2.65	2.58	-0.65
8,236.00	72.10	356.10	7,827.99	856.08	178.74	848.11	4.77	4.69	-0.94
8,267.00	73.70	355.70	7,837.11	885.64	176.62	877.72	5.31	5.16	-1.29
8,299.00	75.20	355.20	7,845.69	916.37	174.18	908.53	4.92	4.69	-1.56
8,330.00	76.20	354.70	7,853.34	946.29	171.53	938.53	3.58	3.23	-1.61
8,362.00	77.60	354.00	7,860.60	977.30	168.46	969.65	4.87	4.38	-2.19
8,394.00	79.20	353.60	7,867.03	1,008.46	165.08	1,000.92	5.15	5.00	-1.25
8,425.00	80.50	353.80	7,872.49	1,038.79	161.73	1,031.36	4.24	4.19	0.65
8,457.00	82.20	353.80	7,877.31	1,070.24	158.31	1,062.92	5.31	5.31	0.00
8,488.00	83.80	354.70	7,881.09	1,100.86	155.23	1,093.64	5.91	5.16	2.90
8,520.00	85.20	355.00	7,884.15	1,132.58	152.37	1,125.45	4.47	4.38	0.94
8,551.00	86.50	355.90	7,886.40	1,163.40	149.92	1,156.34	5.10	4.19	2.90
8,645.00	89.00	356.80	7,890.09	1,257.13	143.94	1,250.24	2.83	2.66	0.96
8,741.00	89.40	356.80	7,891.43	1,352.97	138.58	1,346.22	0.42	0.42	0.00
8,836.00	91.00	357.70	7,891.09	1,447.86	134.02	1,441.21	1.93	1.68	0.95
8,931.00	89.70	357.70	7,890.51	1,542.78	130.21	1,536.21	1.37	-1.37	0.00
9,026.00	91.00	357.70	7,889.93	1,637.70	126.40	1,631.20	1.37	1.37	0.00
9,121.00	90.90	358.40	7,888.36	1,732.63	123.17	1,726.19	0.74	-0.11	0.74
9,216.00	90.00	359.10	7,887.61	1,827.60	121.09	1,821.17	1.20	-0.95	0.74
9,311.00	89.50	358.90	7,888.03	1,922.58	119.44	1,916.14	0.57	-0.53	-0.21
9,406.00	90.00	357.30	7,888.44	2,017.53	116.29	2,011.13	1.76	0.53	-1.68
9,501.00	90.90	357.00	7,887.70	2,112.41	111.56	2,106.12	1.00	0.95	-0.32
9,596.00	90.20	355.90	7,886.78	2,207.22	105.68	2,201.10	1.37	-0.74	-1.16
9,691.00	90.60	357.00	7,886.12	2,302.03	99.80	2,296.07	1.23	0.42	1.16
9,786.00	90.20	357.00	7,885.46	2,396.90	94.83	2,391.06	0.42	-0.42	0.00
9,881.00	89.70	356.30	7,885.54	2,491.74	89.28	2,486.05	0.91	-0.53	-0.74
9,976.00	89.70	355.70	7,886.04	2,586.50	82.65	2,581.00	0.63	0.00	-0.63



LEAM Drilling Systems LLC

Survey Report



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Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
10,071.00	90.00	355.70	7,886.29	2,681.23	75.53	2,675.95	0.32	0.32	0.00
10,164.00	89.20	356.30	7,886.94	2,774.00	69.04	2,768.90	1.08	-0.86	0.65
10,259.00	89.60	355.90	7,887.93	2,868.78	62.58	2,863.86	0.60	0.42	-0.42
10,380.00	90.00	354.70	7,888.35	2,989.37	52.66	2,984.76	1.05	0.33	-0.99
10,475.00	90.50	355.50	7,887.94	3,084.02	44.55	3,079.66	0.99	0.53	0.84
10,569.00	90.80	355.70	7,886.87	3,177.74	37.34	3,173.59	0.38	0.32	0.21
10,663.00	90.80	355.50	7,885.56	3,271.45	30.13	3,267.52	0.21	0.00	-0.21
10,758.00	91.00	356.60	7,884.07	3,366.21	23.58	3,362.47	1.18	0.21	1.16
10,854.00	90.60	355.70	7,882.73	3,461.98	17.14	3,458.43	1.03	-0.42	-0.94
10,948.00	89.50	354.80	7,882.64	3,555.66	9.36	3,552.34	1.51	-1.17	-0.96
11,042.00	89.90	355.50	7,883.14	3,649.32	1.41	3,646.25	0.86	0.43	0.74
11,136.00	90.00	355.50	7,883.22	3,743.03	-5.97	3,740.18	0.11	0.11	0.00
11,231.00	90.70	356.10	7,882.64	3,837.77	-12.92	3,835.13	0.97	0.74	0.63
11,326.00	91.50	355.90	7,880.81	3,932.52	-19.55	3,930.07	0.87	0.84	-0.21
11,420.00	90.50	356.10	7,879.17	4,026.28	-26.11	4,024.01	1.08	-1.06	0.21
11,514.00	91.20	356.60	7,877.78	4,120.08	-32.09	4,117.97	0.92	0.74	0.53
11,609.00	92.00	356.80	7,875.13	4,214.88	-37.56	4,212.92	0.87	0.84	0.21
11,704.00	91.70	356.40	7,872.06	4,309.66	-43.19	4,307.86	0.53	-0.32	-0.42
11,799.00	91.20	356.80	7,869.66	4,404.47	-48.82	4,402.81	0.67	-0.53	0.42
11,894.00	90.10	356.30	7,868.58	4,499.29	-54.54	4,497.78	1.27	-1.16	-0.53
11,988.00	90.00	355.70	7,868.50	4,593.06	-61.09	4,591.74	0.65	-0.11	-0.64
12,083.00	90.10	356.10	7,868.41	4,687.81	-67.89	4,686.70	0.43	0.11	0.42
12,178.00	90.20	356.10	7,868.17	4,782.59	-74.35	4,781.66	0.11	0.11	0.00
12,272.00	90.30	356.10	7,867.76	4,876.37	-80.74	4,875.63	0.11	0.11	0.00
12,366.00	90.00	355.40	7,867.51	4,970.11	-87.71	4,969.57	0.81	-0.32	-0.74
12,462.00	90.00	354.50	7,867.51	5,065.74	-96.16	5,065.46	0.94	0.00	-0.94
12,557.00	90.00	355.20	7,867.51	5,160.36	-104.68	5,160.35	0.74	0.00	0.74
12,652.00	89.30	354.80	7,868.09	5,254.99	-112.96	5,255.24	0.85	-0.74	-0.42
12,747.00	89.90	355.70	7,868.75	5,349.66	-120.83	5,350.15	1.14	0.63	0.95
12,843.00	91.50	357.10	7,867.58	5,445.46	-126.86	5,446.12	2.21	1.67	1.46
12,937.00	90.90	356.60	7,865.61	5,539.30	-132.02	5,540.09	0.83	-0.64	-0.53
13,032.00	92.00	357.50	7,863.21	5,634.14	-136.91	5,635.05	1.50	1.16	0.95
13,128.00	92.00	357.30	7,859.86	5,729.98	-141.26	5,730.99	0.21	0.00	-0.21
13,222.00	91.60	357.50	7,856.90	5,823.84	-145.52	5,824.94	0.48	-0.43	0.21
13,317.00	91.30	358.20	7,854.50	5,918.74	-149.09	5,919.91	0.80	-0.32	0.74
13,412.00	91.20	358.20	7,852.43	6,013.67	-152.07	6,014.88	0.11	-0.11	0.00
13,507.00	90.50	358.00	7,851.02	6,108.61	-155.22	6,109.87	0.77	-0.74	-0.21
13,602.00	89.10	358.40	7,851.35	6,203.56	-158.20	6,204.86	1.53	-1.47	0.42
13,697.00	90.10	359.40	7,852.01	6,298.54	-160.03	6,299.83	1.49	1.05	1.05
13,791.00	91.50	0.80	7,850.70	6,392.52	-159.86	6,393.74	2.11	1.49	1.49
13,886.00	90.90	1.20	7,848.71	6,487.49	-158.21	6,488.55	0.76	-0.63	0.42
13,981.00	89.70	358.20	7,848.21	6,582.47	-158.70	6,583.48	3.40	-1.26	-3.16



LEAM Drilling Systems LLC

Survey Report



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Local Co-ordinate Reference: Well 1H
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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)
14,076.00	89.20	358.50	7,849.13	6,677.43	-161.44	6,678.47	0.61	-0.53	0.32
14,171.00	88.40	357.50	7,851.12	6,772.35	-164.75	6,773.44	1.35	-0.84	-1.05
14,265.00	89.00	358.00	7,853.25	6,866.25	-168.44	6,867.42	0.83	0.64	0.53
14,360.00	89.40	359.10	7,854.57	6,961.21	-170.85	6,962.40	1.23	0.42	1.16
14,455.00	87.80	357.00	7,856.90	7,056.11	-174.08	7,057.36	2.78	-1.68	-2.21
14,550.00	91.00	356.60	7,857.89	7,150.95	-179.38	7,152.33	3.39	3.37	-0.42
14,644.00	92.30	356.40	7,855.18	7,244.73	-185.11	7,246.27	1.40	1.38	-0.21
14,739.00	91.60	354.70	7,851.95	7,339.39	-192.48	7,341.14	1.93	-0.74	-1.79
14,834.00	90.50	351.20	7,850.21	7,433.64	-204.14	7,435.79	3.86	-1.16	-3.68
14,937.00	91.80	353.30	7,848.14	7,535.67	-218.02	7,538.30	2.40	1.26	2.04
15,033.00	92.90	354.00	7,844.21	7,631.00	-228.63	7,633.98	1.36	1.15	0.73
15,127.00	91.10	353.60	7,840.93	7,724.39	-238.78	7,727.71	1.96	-1.91	-0.43
15,222.00	91.20	354.50	7,839.02	7,818.85	-248.62	7,822.50	0.95	0.11	0.95
15,316.00	89.70	352.40	7,838.28	7,912.23	-259.35	7,916.23	2.75	-1.60	-2.23
15,411.00	89.80	352.70	7,838.69	8,006.43	-271.66	8,010.85	0.33	0.11	0.32
15,506.00	90.80	352.90	7,838.20	8,100.68	-283.57	8,105.51	1.07	1.05	0.21
15,600.00	91.80	355.00	7,836.06	8,194.12	-293.47	8,199.28	2.47	1.06	2.23
15,695.00	92.10	356.30	7,832.83	8,288.79	-300.67	8,294.16	1.40	0.32	1.37
15,790.00	90.40	356.40	7,830.76	8,383.57	-306.72	8,389.11	1.79	-1.79	0.11
15,885.00	89.30	357.30	7,831.01	8,478.43	-311.94	8,484.10	1.50	-1.16	0.95
15,981.00	90.00	358.50	7,831.59	8,574.36	-315.46	8,580.09	1.45	0.73	1.25
16,075.00	88.00	357.70	7,833.24	8,668.29	-318.57	8,674.07	2.29	-2.13	-0.85
16,171.00	88.00	358.00	7,836.59	8,764.16	-322.17	8,770.01	0.31	0.00	0.31
16,266.00	88.40	358.40	7,839.57	8,859.06	-325.16	8,864.96	0.60	0.42	0.42
16,361.00	88.40	358.20	7,842.22	8,953.99	-327.97	8,959.92	0.21	0.00	-0.21
16,456.00	89.00	358.70	7,844.38	9,048.93	-330.54	9,054.88	0.82	0.63	0.53
16,550.00	90.00	0.10	7,845.20	9,142.91	-331.53	9,148.83	1.83	1.06	1.49
16,645.00	88.00	0.10	7,846.86	9,237.89	-331.36	9,243.73	2.11	-2.11	0.00
16,740.00	91.70	0.30	7,847.10	9,332.88	-331.03	9,338.62	3.90	3.89	0.21
16,835.00	90.70	359.40	7,845.11	9,427.85	-331.28	9,433.53	1.42	-1.05	-0.95
16,930.00	88.80	358.50	7,845.53	9,522.83	-333.02	9,528.50	2.21	-2.00	-0.95
17,025.00	89.10	358.70	7,847.27	9,617.79	-335.34	9,623.47	0.38	0.32	0.21
17,120.00	89.70	359.20	7,848.26	9,712.77	-337.08	9,718.44	0.82	0.63	0.53
17,214.00	89.60	0.30	7,848.84	9,806.76	-337.49	9,812.37	1.18	-0.11	1.17
17,309.00	89.40	0.60	7,849.67	9,901.75	-336.74	9,907.26	0.38	-0.21	0.32
17,405.00	89.20	1.50	7,850.84	9,997.73	-334.99	10,003.08	0.96	-0.21	0.94
17,499.00	88.90	1.20	7,852.40	10,091.69	-332.77	10,096.88	0.45	-0.32	-0.32
17,594.00	88.50	0.50	7,854.55	10,186.66	-331.36	10,191.70	0.85	-0.42	-0.74
17,688.00	90.00	0.10	7,855.79	10,280.64	-330.87	10,285.59	1.65	1.60	-0.43
17,783.00	88.50	358.50	7,857.03	10,375.62	-332.03	10,380.54	2.31	-1.58	-1.68
17,878.00	89.20	358.40	7,858.94	10,470.57	-334.60	10,475.51	0.74	0.74	-0.11
17,972.00	90.00	357.70	7,859.59	10,564.51	-337.80	10,569.51	1.13	0.85	-0.74



LEAM Drilling Systems LLC
Survey Report



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @
3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @
3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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)
18,067.00	90.90	357.10	7,858.85	10,659.41	-342.11	10,664.50	1.14	0.95	-0.63
18,162.00	90.10	357.10	7,858.02	10,754.28	-346.91	10,759.49	0.84	-0.84	0.00
18,256.00	90.50	356.80	7,857.52	10,848.15	-351.91	10,853.48	0.53	0.43	-0.32
18,351.00	91.10	355.20	7,856.20	10,942.90	-358.54	10,948.43	1.80	0.63	-1.68
18,797.00	91.10	355.20	7,847.64	11,387.26	-395.85	11,393.94	0.00	0.00	0.00
PBHL (M27-22F 1H)									

Checked By: _____ Approved By: _____ Date: _____



DEVON ENERGY

Eddy County, NM (NAD-83)

Merlyn 27-22 Fed

1H

OH

Design: OH

Survey Report - Geographic

29 December, 2014





LEAM Drilling Systems LLC

Survey Report - Geographic



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Mertlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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	Mertlyn 27-22 Fed		
Site Position:	From: Map	Northing: 523,946.84 usft	Latitude: 32° 26' 20.832 N
		Easting: 716,194.51 usft	Longitude: 103° 45' 59.554 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.30 °

Well	1H, Brushy Canyon		
Well Position	+N-S 0.00 usft	Northing: 523,946.84 usft	Latitude: 32° 26' 20.832 N
	+E-W 0.00 usft	Easting: 716,194.51 usft	Longitude: 103° 45' 59.554 W
Position Uncertainty	0.00 usft	Wellhead Elevation: 0.00 usft	Ground Level: 3,480.80 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/14/2014	7.45	60.26	48,348

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.00	0.00	0.00	357.67	

Survey Program		Date 12/29/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
159.00	7,049.00	Survey #1 (OH)	MWD-ISCWSA	MWD - Standard
7,134.00	18,351.00	Survey #2 (OH)	LEAM MWD+HDGM	MWD+HDGM
18,797.00	18,797.00	Survey #3 (OH)	Project	Projection

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	523,946.84	716,194.51	32° 26' 20.832 N	103° 45' 59.554 W
SHL (M27-22F 1H)									
159.00	0.48	346.55	159.00	0.65	-0.15	523,947.49	716,194.35	32° 26' 20.838 N	103° 45' 59.556 W
323.00	0.62	1.67	322.99	2.20	-0.29	523,949.04	716,194.22	32° 26' 20.854 N	103° 45' 59.557 W
422.00	1.19	329.46	421.98	3.62	-0.80	523,950.47	716,193.71	32° 26' 20.868 N	103° 45' 59.563 W
544.00	1.49	323.88	543.95	6.00	-2.37	523,952.84	716,192.13	32° 26' 20.891 N	103° 45' 59.581 W
839.00	2.02	318.87	838.81	13.01	-8.06	523,959.85	716,186.45	32° 26' 20.961 N	103° 45' 59.647 W
927.00	1.07	324.27	926.77	14.85	-9.56	523,961.69	716,184.95	32° 26' 20.979 N	103° 45' 59.664 W



LEAM Drilling Systems LLC
Survey Report - Geographic



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Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
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Wellbore: OH
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Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,023.00	1.58	323.09	1,022.75	16.63	-10.87	523,963.47	716,183.63	32° 26' 20.997 N	103° 45' 59.680 W
1,114.00	1.58	330.56	1,113.71	18.73	-12.24	523,965.57	716,182.26	32° 26' 21.018 N	103° 45' 59.696 W
1,205.00	1.49	331.96	1,204.68	20.86	-13.42	523,967.71	716,181.09	32° 26' 21.039 N	103° 45' 59.709 W
1,296.00	1.32	334.38	1,295.65	22.85	-14.43	523,969.69	716,180.08	32° 26' 21.059 N	103° 45' 59.721 W
1,388.00	1.19	347.26	1,387.63	24.74	-15.09	523,971.58	716,179.41	32° 26' 21.078 N	103° 45' 59.729 W
1,483.00	1.10	369	1,482.61	26.61	-15.25	523,973.45	716,179.25	32° 26' 21.096 N	103° 45' 59.730 W
1,577.00	1.01	24.17	1,576.60	28.27	-14.86	523,975.11	716,179.65	32° 26' 21.112 N	103° 45' 59.726 W
1,672.00	1.41	52.69	1,671.58	29.74	-13.58	523,976.58	716,180.92	32° 26' 21.127 N	103° 45' 59.711 W
1,767.00	2.11	61.48	1,766.53	31.28	-11.12	523,978.13	716,183.39	32° 26' 21.142 N	103° 45' 59.682 W
1,861.00	2.68	68.55	1,860.45	32.91	-7.55	523,979.76	716,186.95	32° 26' 21.158 N	103° 45' 59.640 W
1,956.00	3.12	69.65	1,955.33	34.63	-3.06	523,981.47	716,191.45	32° 26' 21.175 N	103° 45' 59.587 W
2,051.00	3.52	70.88	2,050.17	36.48	2.12	523,983.32	716,196.63	32° 26' 21.193 N	103° 45' 59.527 W
2,145.00	3.52	67.37	2,143.99	38.54	7.51	523,985.38	716,202.02	32° 26' 21.213 N	103° 45' 59.464 W
2,240.00	3.60	68.47	2,238.81	40.75	12.98	523,987.59	716,207.48	32° 26' 21.235 N	103° 45' 59.400 W
2,334.00	4.31	65.87	2,332.58	43.28	18.94	523,990.12	716,213.45	32° 26' 21.259 N	103° 45' 59.330 W
2,430.00	4.79	65.13	2,428.28	46.44	25.87	523,993.28	716,220.38	32° 26' 21.290 N	103° 45' 59.249 W
2,525.00	5.01	67.46	2,522.93	49.70	33.30	523,996.54	716,227.81	32° 26' 21.322 N	103° 45' 59.162 W
2,620.00	4.79	68.38	2,617.58	52.75	40.82	523,999.59	716,235.33	32° 26' 21.352 N	103° 45' 59.074 W
2,715.00	4.31	70.75	2,712.28	55.39	47.88	524,002.23	716,242.39	32° 26' 21.378 N	103° 45' 58.992 W
2,809.00	4.09	70.36	2,806.03	57.68	54.37	524,004.52	716,248.88	32° 26' 21.400 N	103° 45' 58.916 W
2,903.00	3.69	78.18	2,899.82	59.43	60.49	524,006.27	716,254.99	32° 26' 21.417 N	103° 45' 58.844 W
2,998.00	3.38	89.69	2,994.64	60.07	66.28	524,006.91	716,260.79	32° 26' 21.423 N	103° 45' 58.777 W
3,093.00	3.69	98.26	3,089.46	59.64	72.11	524,006.48	716,266.61	32° 26' 21.418 N	103° 45' 58.709 W
3,188.00	4.09	101.16	3,184.24	58.55	78.46	524,005.39	716,272.96	32° 26' 21.407 N	103° 45' 58.635 W
3,284.00	4.09	95.36	3,279.99	57.57	85.22	524,004.41	716,279.73	32° 26' 21.397 N	103° 45' 58.556 W
3,378.00	3.30	95.36	3,373.80	57.00	91.26	524,003.84	716,285.76	32° 26' 21.391 N	103° 45' 58.486 W
3,474.00	2.42	102.79	3,469.68	56.29	95.98	524,003.13	716,290.49	32° 26' 21.384 N	103° 45' 58.430 W
3,568.00	2.42	116.76	3,563.59	54.96	99.69	524,001.80	716,294.20	32° 26' 21.371 N	103° 45' 58.387 W
3,663.00	2.99	109.77	3,658.49	53.22	103.81	524,000.06	716,298.32	32° 26' 21.353 N	103° 45' 58.339 W
3,757.00	4.00	85.96	3,752.32	52.62	109.39	523,999.46	716,303.90	32° 26' 21.347 N	103° 45' 58.274 W
3,852.00	4.48	73.65	3,847.06	53.90	116.26	524,000.74	716,310.76	32° 26' 21.359 N	103° 45' 58.194 W
3,947.00	3.91	74.18	3,941.80	55.83	122.93	524,002.67	716,317.44	32° 26' 21.378 N	103° 45' 58.116 W
4,024.00	3.52	75.28	4,018.64	57.14	127.74	524,003.98	716,322.25	32° 26' 21.391 N	103° 45' 58.060 W
4,132.00	2.90	75.28	4,126.47	58.68	133.59	524,005.52	716,328.10	32° 26' 21.406 N	103° 45' 57.991 W
4,226.00	2.90	76.16	4,220.35	59.85	138.20	524,006.69	716,332.71	32° 26' 21.417 N	103° 45' 57.938 W
4,321.00	2.90	74.27	4,315.23	61.08	142.85	524,007.92	716,337.36	32° 26' 21.429 N	103° 45' 57.883 W
4,417.00	2.80	74.18	4,411.11	62.38	147.44	524,009.22	716,341.95	32° 26' 21.441 N	103° 45' 57.830 W
4,511.00	2.60	71.45	4,505.01	63.68	151.67	524,010.52	716,346.18	32° 26' 21.454 N	103° 45' 57.780 W
4,606.00	2.50	66.75	4,599.91	65.18	155.62	524,012.03	716,350.13	32° 26' 21.469 N	103° 45' 57.734 W
4,700.00	2.50	64.47	4,693.82	66.88	159.35	524,013.72	716,353.86	32° 26' 21.485 N	103° 45' 57.690 W
4,794.00	2.40	61.17	4,787.74	68.71	162.93	524,015.55	716,357.43	32° 26' 21.503 N	103° 45' 57.648 W
4,889.00	2.20	57.57	4,882.66	70.65	166.21	524,017.49	716,360.71	32° 26' 21.522 N	103° 45' 57.610 W
4,984.00	2.20	56.78	4,977.59	72.62	169.27	524,019.46	716,363.78	32° 26' 21.542 N	103° 45' 57.574 W
5,079.00	1.80	56.38	5,072.53	74.45	172.04	524,021.29	716,366.55	32° 26' 21.560 N	103° 45' 57.542 W
5,173.00	2.20	55.46	5,166.48	76.29	174.76	524,023.13	716,369.26	32° 26' 21.578 N	103° 45' 57.510 W
5,265.00	2.20	57.48	5,258.41	78.24	177.70	524,025.08	716,372.21	32° 26' 21.597 N	103° 45' 57.476 W
5,369.00	2.20	55.57	5,362.33	80.44	181.03	524,027.28	716,375.54	32° 26' 21.618 N	103° 45' 57.437 W
5,488.00	2.11	55.82	5,481.25	82.96	184.73	524,029.80	716,379.23	32° 26' 21.643 N	103° 45' 57.393 W
5,583.00	2.02	54.36	5,576.18	84.92	187.53	524,031.76	716,382.04	32° 26' 21.662 N	103° 45' 57.360 W
5,643.00	1.89	49.79	5,636.15	86.18	189.15	524,033.02	716,383.65	32° 26' 21.675 N	103° 45' 57.341 W
5,737.00	1.80	44.87	5,730.10	88.22	191.37	524,035.06	716,385.88	32° 26' 21.695 N	103° 45' 57.315 W
5,834.00	1.71	43.07	5,827.06	90.36	193.44	524,037.20	716,387.94	32° 26' 21.716 N	103° 45' 57.291 W
5,938.00	1.58	34.89	5,931.01	92.67	195.32	524,039.51	716,389.82	32° 26' 21.739 N	103° 45' 57.269 W



LEAM Drilling Systems LLC
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North Reference: Grid
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,024.00	1.49	33.35	6,016.98	94.58	196.61	524,041.42	716,391.12	32° 26' 21.757 N	103° 45' 57.254 W
6,118.00	1.32	33.35	6,110.95	96.50	197.88	524,043.34	716,392.38	32° 26' 21.776 N	103° 45' 57.239 W
6,214.00	1.32	33.04	6,206.93	98.35	199.09	524,045.19	716,393.59	32° 26' 21.795 N	103° 45' 57.225 W
6,308.00	1.19	32.47	6,300.91	100.08	200.20	524,046.92	716,394.71	32° 26' 21.812 N	103° 45' 57.212 W
6,403.00	1.10	33.18	6,395.89	101.68	201.23	524,048.52	716,395.74	32° 26' 21.828 N	103° 45' 57.199 W
6,498.00	0.88	29.75	6,490.87	103.07	202.09	524,049.92	716,396.60	32° 26' 21.841 N	103° 45' 57.189 W
6,593.00	0.62	36.39	6,585.86	104.12	202.76	524,050.96	716,397.26	32° 26' 21.852 N	103° 45' 57.182 W
6,688.00	0.62	48.38	6,680.86	104.88	203.45	524,051.72	716,397.95	32° 26' 21.859 N	103° 45' 57.173 W
6,782.00	0.48	48.38	6,774.85	105.48	204.12	524,052.32	716,398.63	32° 26' 21.865 N	103° 45' 57.166 W
6,972.00	0.31	22.06	6,964.85	106.48	204.91	524,053.32	716,399.42	32° 26' 21.875 N	103° 45' 57.156 W
7,049.00	0.31	22.06	7,041.85	106.87	205.07	524,053.71	716,399.57	32° 26' 21.879 N	103° 45' 57.154 W
7,134.00	0.60	52.00	7,126.85	107.35	205.50	524,054.20	716,400.01	32° 26' 21.883 N	103° 45' 57.149 W
7,165.00	1.60	7.20	7,157.84	107.88	205.69	524,054.73	716,400.19	32° 26' 21.889 N	103° 45' 57.147 W
7,197.00	4.80	2.60	7,189.79	109.67	205.80	524,056.51	716,400.31	32° 26' 21.906 N	103° 45' 57.146 W
7,229.00	8.60	6.30	7,221.56	113.38	206.13	524,060.22	716,400.63	32° 26' 21.943 N	103° 45' 57.142 W
7,260.00	12.30	6.10	7,252.04	118.97	206.73	524,065.81	716,401.24	32° 26' 21.998 N	103° 45' 57.134 W
7,292.00	16.40	4.50	7,283.04	126.87	207.45	524,073.71	716,401.95	32° 26' 22.076 N	103° 45' 57.125 W
7,323.00	20.00	1.50	7,312.48	136.53	207.93	524,083.37	716,402.44	32° 26' 22.172 N	103° 45' 57.119 W
7,355.00	23.50	1.20	7,342.20	148.39	208.21	524,095.23	716,402.71	32° 26' 22.289 N	103° 45' 57.115 W
7,387.00	26.90	0.60	7,371.15	162.01	208.42	524,108.85	716,402.92	32° 26' 22.424 N	103° 45' 57.112 W
7,418.00	30.90	359.60	7,398.28	176.98	208.44	524,123.83	716,402.94	32° 26' 22.572 N	103° 45' 57.111 W
7,450.00	35.10	358.70	7,425.12	194.41	208.17	524,141.25	716,402.67	32° 26' 22.745 N	103° 45' 57.113 W
7,482.00	39.40	357.50	7,450.58	213.76	207.52	524,160.60	716,402.02	32° 26' 22.936 N	103° 45' 57.119 W
7,513.00	43.00	357.70	7,473.90	234.16	206.66	524,181.00	716,401.17	32° 26' 23.138 N	103° 45' 57.128 W
7,545.00	46.00	357.10	7,496.73	256.56	205.64	524,203.40	716,400.15	32° 26' 23.360 N	103° 45' 57.138 W
7,576.00	47.70	358.20	7,517.93	279.16	204.72	524,226.00	716,399.22	32° 26' 23.584 N	103° 45' 57.148 W
7,608.00	49.30	358.50	7,539.13	303.11	204.03	524,249.96	716,398.54	32° 26' 23.821 N	103° 45' 57.154 W
7,636.00	51.10	358.90	7,557.05	324.62	203.54	524,271.46	716,398.05	32° 26' 24.033 N	103° 45' 57.159 W
7,667.00	52.60	359.10	7,576.20	348.99	203.12	524,295.83	716,397.62	32° 26' 24.275 N	103° 45' 57.162 W
7,699.00	54.60	358.90	7,595.19	374.74	202.67	524,321.59	716,397.17	32° 26' 24.529 N	103° 45' 57.166 W
7,729.00	56.30	358.40	7,612.20	399.45	202.08	524,346.29	716,396.59	32° 26' 24.774 N	103° 45' 57.171 W
7,761.00	57.90	357.70	7,629.58	426.30	201.17	524,373.14	716,395.67	32° 26' 25.040 N	103° 45' 57.180 W
7,793.00	59.20	357.50	7,646.28	453.57	200.02	524,400.41	716,394.53	32° 26' 25.310 N	103° 45' 57.192 W
7,825.00	60.10	357.00	7,662.45	481.15	198.70	524,427.99	716,393.21	32° 26' 25.583 N	103° 45' 57.206 W
7,856.00	61.00	357.10	7,677.69	508.11	197.31	524,454.95	716,391.82	32° 26' 25.849 N	103° 45' 57.220 W
7,888.00	62.30	357.00	7,692.88	536.24	195.86	524,483.08	716,390.37	32° 26' 26.128 N	103° 45' 57.235 W
7,920.00	63.30	357.00	7,707.51	564.66	194.37	524,511.50	716,388.88	32° 26' 26.409 N	103° 45' 57.251 W
7,951.00	64.30	357.30	7,721.20	592.44	192.99	524,539.28	716,387.49	32° 26' 26.684 N	103° 45' 57.265 W
7,983.00	65.20	357.30	7,734.85	621.35	191.63	524,568.19	716,386.13	32° 26' 26.970 N	103° 45' 57.279 W
8,015.00	66.10	357.10	7,748.04	650.47	190.20	524,597.31	716,384.71	32° 26' 27.258 N	103° 45' 57.294 W
8,046.00	66.90	357.10	7,760.40	678.86	188.76	524,625.70	716,383.27	32° 26' 27.539 N	103° 45' 57.309 W
8,077.00	67.60	357.10	7,772.39	707.41	187.32	524,654.25	716,381.82	32° 26' 27.822 N	103° 45' 57.324 W
8,109.00	68.30	357.10	7,784.40	737.03	185.82	524,683.87	716,380.32	32° 26' 28.115 N	103° 45' 57.340 W
8,141.00	69.10	356.80	7,796.03	766.80	184.23	524,713.64	716,378.74	32° 26' 28.410 N	103° 45' 57.357 W
8,173.00	69.80	356.60	7,807.26	796.72	182.50	524,743.56	716,377.01	32° 26' 28.706 N	103° 45' 57.375 W
8,204.00	70.60	356.40	7,817.76	825.83	180.72	524,772.67	716,375.23	32° 26' 28.994 N	103° 45' 57.394 W
8,236.00	72.10	356.10	7,827.99	856.08	178.74	524,802.92	716,373.25	32° 26' 29.294 N	103° 45' 57.415 W
8,267.00	73.70	355.70	7,837.11	885.64	176.62	524,832.48	716,371.13	32° 26' 29.586 N	103° 45' 57.438 W
8,299.00	75.20	355.20	7,845.69	916.37	174.18	524,863.21	716,368.68	32° 26' 29.890 N	103° 45' 57.465 W
8,330.00	76.20	354.70	7,853.34	946.29	171.53	524,893.13	716,366.04	32° 26' 30.187 N	103° 45' 57.494 W
8,362.00	77.60	354.00	7,860.60	977.30	168.46	524,924.14	716,362.97	32° 26' 30.494 N	103° 45' 57.528 W
8,394.00	79.20	353.60	7,867.03	1,008.46	165.08	524,955.31	716,359.58	32° 26' 30.802 N	103° 45' 57.565 W
8,425.00	80.50	353.80	7,872.49	1,038.79	161.73	524,985.64	716,356.23	32° 26' 31.103 N	103° 45' 57.602 W



LEAM Drilling Systems LLC

Survey Report - Geographic



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,457.00	82.20	353.80	7,877.31	1,070.24	158.31	525,017.09	716,352.82	32° 26' 31.414 N	103° 45' 57.640 W
8,488.00	83.80	354.70	7,881.09	1,100.86	155.23	525,047.70	716,349.74	32° 26' 31.717 N	103° 45' 57.674 W
8,520.00	85.20	355.00	7,884.15	1,132.58	152.37	525,079.42	716,346.88	32° 26' 32.031 N	103° 45' 57.706 W
8,551.00	86.50	355.90	7,886.40	1,163.40	149.92	525,110.24	716,344.42	32° 26' 32.336 N	103° 45' 57.732 W
8,645.00	89.00	356.80	7,890.09	1,257.13	143.94	525,203.97	716,338.45	32° 26' 33.264 N	103° 45' 57.796 W
8,741.00	89.40	356.80	7,891.43	1,352.97	138.58	525,299.81	716,333.09	32° 26' 34.213 N	103° 45' 57.853 W
8,836.00	91.00	357.70	7,891.09	1,447.85	134.02	525,394.70	716,328.53	32° 26' 35.152 N	103° 45' 57.900 W
8,931.00	89.70	357.70	7,890.51	1,542.78	130.21	525,489.62	716,324.72	32° 26' 36.091 N	103° 45' 57.939 W
9,026.00	91.00	357.70	7,889.93	1,637.70	126.40	525,584.54	716,320.90	32° 26' 37.031 N	103° 45' 57.978 W
9,121.00	90.90	358.40	7,888.36	1,732.63	123.17	525,679.47	716,317.67	32° 26' 37.970 N	103° 45' 58.009 W
9,216.00	90.00	359.10	7,887.61	1,827.60	121.09	525,774.44	716,315.60	32° 26' 38.910 N	103° 45' 58.028 W
9,311.00	89.50	358.90	7,888.03	1,922.58	119.44	525,869.43	716,313.94	32° 26' 39.850 N	103° 45' 58.041 W
9,406.00	90.00	357.30	7,888.44	2,017.53	116.29	525,964.37	716,310.79	32° 26' 40.790 N	103° 45' 58.072 W
9,501.00	90.90	357.00	7,887.70	2,112.41	111.56	526,059.25	716,306.07	32° 26' 41.729 N	103° 45' 58.121 W
9,596.00	90.20	355.90	7,886.78	2,207.22	105.68	526,154.06	716,300.19	32° 26' 42.667 N	103° 45' 58.184 W
9,691.00	90.60	357.00	7,886.12	2,302.03	99.80	526,248.87	716,294.31	32° 26' 43.606 N	103° 45' 58.247 W
9,786.00	90.20	357.00	7,885.46	2,396.90	94.83	526,343.74	716,289.33	32° 26' 44.545 N	103° 45' 58.299 W
9,881.00	89.70	356.30	7,885.54	2,491.74	89.28	526,438.58	716,283.78	32° 26' 45.484 N	103° 45' 58.358 W
9,976.00	89.70	355.70	7,886.04	2,586.50	82.65	526,533.34	716,277.16	32° 26' 46.422 N	103° 45' 58.429 W
10,071.00	90.00	355.70	7,886.29	2,681.23	75.53	526,628.08	716,270.03	32° 26' 47.359 N	103° 45' 58.506 W
10,164.00	89.20	356.30	7,886.94	2,774.00	69.04	526,720.85	716,263.55	32° 26' 48.278 N	103° 45' 58.576 W
10,259.00	89.60	355.90	7,887.93	2,868.78	62.58	526,815.62	716,257.08	32° 26' 49.216 N	103° 45' 58.646 W
10,380.00	90.00	354.70	7,888.35	2,969.37	52.66	526,936.21	716,247.17	32° 26' 50.410 N	103° 45' 58.754 W
10,475.00	90.50	355.50	7,887.94	3,084.02	44.55	527,030.86	716,239.06	32° 26' 51.347 N	103° 45' 58.843 W
10,569.00	90.80	355.70	7,886.87	3,177.74	37.34	527,124.58	716,231.84	32° 26' 52.274 N	103° 45' 58.921 W
10,663.00	90.80	355.50	7,885.56	3,271.45	30.13	527,218.29	716,224.63	32° 26' 53.202 N	103° 45' 59.000 W
10,758.00	91.00	356.60	7,884.07	3,366.21	23.58	527,313.05	716,218.09	32° 26' 54.140 N	103° 45' 59.070 W
10,854.00	90.60	355.70	7,882.73	3,461.98	17.14	527,408.83	716,211.64	32° 26' 55.088 N	103° 45' 59.139 W
10,948.00	89.50	354.80	7,882.64	3,555.66	9.36	527,502.50	716,203.86	32° 26' 56.016 N	103° 45' 59.225 W
11,042.00	89.90	355.50	7,883.14	3,649.32	1.41	527,596.16	716,195.91	32° 26' 56.943 N	103° 45' 59.311 W
11,136.00	90.00	355.50	7,883.22	3,743.03	-5.97	527,689.87	716,188.54	32° 26' 57.870 N	103° 45' 59.392 W
11,231.00	90.70	356.10	7,882.64	3,837.77	-12.92	527,784.61	716,181.58	32° 26' 58.808 N	103° 45' 59.467 W
11,326.00	91.50	355.90	7,880.81	3,932.52	-19.55	527,879.36	716,174.96	32° 26' 59.746 N	103° 45' 59.538 W
11,420.00	90.50	356.10	7,879.17	4,026.28	-26.11	527,973.12	716,168.40	32° 27' 0.674 N	103° 45' 59.609 W
11,514.00	91.20	356.60	7,877.78	4,120.08	-32.09	528,066.92	716,162.42	32° 27' 1.603 N	103° 45' 59.673 W
11,609.00	92.00	356.80	7,875.13	4,214.88	-37.56	528,161.72	716,156.95	32° 27' 2.541 N	103° 45' 59.731 W
11,704.00	91.70	356.40	7,872.06	4,309.66	-43.19	528,256.51	716,151.32	32° 27' 3.479 N	103° 45' 59.791 W
11,799.00	91.20	356.80	7,869.66	4,404.47	-48.82	528,351.31	716,145.69	32° 27' 4.418 N	103° 45' 59.851 W
11,894.00	90.10	356.30	7,868.58	4,499.29	-54.54	528,446.13	716,139.97	32° 27' 5.356 N	103° 45' 59.912 W
11,988.00	90.00	355.70	7,868.50	4,593.06	-61.09	528,539.90	716,133.41	32° 27' 6.285 N	103° 45' 59.982 W
12,083.00	90.10	356.10	7,868.41	4,687.81	-67.89	528,634.66	716,126.62	32° 27' 7.223 N	103° 46' 0.056 W
12,178.00	90.20	356.10	7,868.17	4,782.59	-74.35	528,729.43	716,120.16	32° 27' 8.161 N	103° 46' 0.125 W
12,272.00	90.30	356.10	7,867.76	4,876.37	-80.74	528,823.22	716,113.77	32° 27' 9.089 N	103° 46' 0.194 W
12,366.00	90.00	355.40	7,867.51	4,970.11	-87.71	528,916.96	716,106.80	32° 27' 10.017 N	103° 46' 0.270 W
12,462.00	90.00	354.50	7,867.51	5,065.74	-96.16	529,012.58	716,098.35	32° 27' 10.964 N	103° 46' 0.362 W
12,557.00	90.00	355.20	7,867.51	5,160.36	-104.68	529,107.20	716,089.82	32° 27' 11.900 N	103° 46' 0.456 W
12,652.00	89.30	354.80	7,868.09	5,254.99	-112.96	529,201.83	716,081.54	32° 27' 12.837 N	103° 46' 0.547 W
12,747.00	89.90	355.70	7,868.75	5,349.66	-120.83	529,296.50	716,073.68	32° 27' 13.774 N	103° 46' 0.633 W
12,843.00	91.50	357.10	7,867.58	5,445.46	-126.86	529,392.30	716,067.65	32° 27' 14.723 N	103° 46' 0.697 W
12,937.00	90.90	356.60	7,865.61	5,539.30	-132.02	529,486.14	716,062.48	32° 27' 15.652 N	103° 46' 0.752 W
13,032.00	92.00	357.50	7,863.21	5,634.14	-136.91	529,580.98	716,057.60	32° 27' 16.590 N	103° 46' 0.803 W
13,128.00	92.00	357.30	7,859.86	5,729.98	-141.26	529,676.82	716,053.24	32° 27' 17.539 N	103° 46' 0.848 W
13,222.00	91.60	357.50	7,856.90	5,823.84	-145.52	529,770.68	716,048.98	32° 27' 18.468 N	103° 46' 0.892 W



LEAM Drilling Systems LLC
Survey Report - Geographic



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @ 3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,317.00	91.30	358.20	7,854.50	5,918.74	-149.09	529,865.58	716,045.42	32° 27' 19.407 N	103° 46' 0.927 W
13,412.00	91.20	358.20	7,852.43	6,013.67	-152.07	529,960.51	716,042.44	32° 27' 20.347 N	103° 46' 0.956 W
13,507.00	90.50	358.00	7,851.02	6,108.61	-155.22	530,055.45	716,039.29	32° 27' 21.286 N	103° 46' 0.987 W
13,602.00	89.10	358.40	7,851.35	6,203.56	-158.20	530,150.40	716,036.30	32° 27' 22.226 N	103° 46' 1.016 W
13,697.00	90.10	359.40	7,852.01	6,298.54	-160.03	530,245.38	716,034.48	32° 27' 23.166 N	103° 46' 1.031 W
13,791.00	91.50	0.80	7,850.70	6,392.52	-159.86	530,339.36	716,034.64	32° 27' 24.096 N	103° 46' 1.024 W
13,886.00	90.90	1.20	7,848.71	6,487.49	-158.21	530,434.33	716,036.30	32° 27' 25.035 N	103° 46' 0.998 W
13,981.00	89.70	358.20	7,848.21	6,582.47	-158.70	530,529.31	716,035.80	32° 27' 25.975 N	103° 46' 0.998 W
14,076.00	89.20	358.50	7,849.13	6,677.43	-161.44	530,624.27	716,033.07	32° 27' 26.915 N	103° 46' 1.024 W
14,171.00	88.40	357.50	7,851.12	6,772.35	-164.75	530,719.19	716,029.75	32° 27' 27.854 N	103° 46' 1.057 W
14,265.00	89.00	358.00	7,853.25	6,866.25	-168.44	530,813.09	716,026.06	32° 27' 28.784 N	103° 46' 1.094 W
14,360.00	89.40	359.10	7,854.57	6,961.21	-170.85	530,908.05	716,023.66	32° 27' 29.724 N	103° 46' 1.117 W
14,455.00	87.80	357.00	7,856.90	7,056.11	-174.08	531,002.96	716,020.43	32° 27' 30.663 N	103° 46' 1.148 W
14,550.00	91.00	356.60	7,857.89	7,150.95	-179.38	531,097.79	716,015.13	32° 27' 31.602 N	103° 46' 1.204 W
14,644.00	92.30	356.40	7,855.18	7,244.73	-185.11	531,191.57	716,009.39	32° 27' 32.530 N	103° 46' 1.266 W
14,739.00	91.60	354.70	7,851.95	7,339.39	-192.48	531,286.23	716,002.03	32° 27' 33.467 N	103° 46' 1.346 W
14,834.00	90.50	351.20	7,850.21	7,433.64	-204.14	531,380.48	715,990.37	32° 27' 34.400 N	103° 46' 1.476 W
14,937.00	91.80	353.30	7,848.14	7,535.67	-218.02	531,482.51	715,976.48	32° 27' 35.411 N	103° 46' 1.632 W
15,033.00	92.90	354.00	7,844.21	7,631.00	-228.63	531,577.84	715,965.87	32° 27' 36.354 N	103° 46' 1.750 W
15,127.00	91.10	353.60	7,840.93	7,724.39	-238.78	531,671.23	715,955.73	32° 27' 37.279 N	103° 46' 1.862 W
15,222.00	91.20	354.50	7,839.02	7,818.85	-248.62	531,765.70	715,945.88	32° 27' 38.214 N	103° 46' 1.971 W
15,316.00	89.70	352.40	7,838.28	7,912.23	-259.35	531,859.07	715,935.16	32° 27' 39.139 N	103° 46' 2.091 W
15,411.00	89.80	352.70	7,838.69	8,006.43	-271.66	531,953.27	715,922.84	32° 27' 40.072 N	103° 46' 2.229 W
15,506.00	90.80	352.90	7,838.20	8,100.68	-283.57	532,047.52	715,910.94	32° 27' 41.005 N	103° 46' 2.362 W
15,600.00	91.80	355.00	7,836.06	8,194.12	-293.47	532,140.96	715,901.03	32° 27' 41.930 N	103° 46' 2.472 W
15,695.00	92.10	356.30	7,832.83	8,288.79	-300.67	532,235.63	715,893.83	32° 27' 42.867 N	103° 46' 2.550 W
15,790.00	90.40	356.40	7,830.76	8,383.57	-306.72	532,330.41	715,887.79	32° 27' 43.805 N	103° 46' 2.614 W
15,885.00	89.30	357.30	7,831.01	8,478.43	-311.94	532,425.27	715,882.56	32° 27' 44.744 N	103° 46' 2.670 W
15,981.00	90.00	358.50	7,831.59	8,574.36	-315.46	532,521.20	715,879.05	32° 27' 45.694 N	103° 46' 2.705 W
16,075.00	88.00	357.70	7,833.24	8,668.29	-318.57	532,615.13	715,875.93	32° 27' 46.623 N	103° 46' 2.735 W
16,171.00	88.00	358.00	7,836.59	8,764.16	-322.17	532,711.00	715,872.33	32° 27' 47.572 N	103° 46' 2.771 W
16,266.00	88.40	358.40	7,839.57	8,859.06	-325.16	532,805.91	715,869.35	32° 27' 48.511 N	103° 46' 2.800 W
16,361.00	88.40	358.20	7,842.22	8,953.99	-327.97	532,900.83	715,866.53	32° 27' 49.451 N	103° 46' 2.827 W
16,456.00	89.00	358.70	7,844.38	9,048.93	-330.54	532,995.77	715,863.96	32° 27' 50.390 N	103° 46' 2.851 W
16,550.00	90.00	0.10	7,845.20	9,142.91	-331.53	533,089.76	715,862.98	32° 27' 51.321 N	103° 46' 2.857 W
16,645.00	88.00	0.10	7,846.86	9,237.89	-331.36	533,184.74	715,863.15	32° 27' 52.260 N	103° 46' 2.849 W
16,740.00	91.70	0.30	7,847.10	9,332.88	-331.03	533,279.72	715,863.48	32° 27' 53.200 N	103° 46' 2.839 W
16,835.00	90.70	359.40	7,845.11	9,427.85	-331.28	533,374.70	715,863.23	32° 27' 54.140 N	103° 46' 2.836 W
16,930.00	88.80	358.50	7,845.53	9,522.83	-333.02	533,469.67	715,861.49	32° 27' 55.080 N	103° 46' 2.851 W
17,025.00	89.10	358.70	7,847.27	9,617.79	-335.34	533,564.63	715,859.17	32° 27' 56.020 N	103° 46' 2.872 W
17,120.00	89.70	359.20	7,848.26	9,712.77	-337.08	533,659.61	715,857.43	32° 27' 56.960 N	103° 46' 2.887 W
17,214.00	89.60	0.30	7,848.84	9,806.76	-337.49	533,753.60	715,857.02	32° 27' 57.890 N	103° 46' 2.886 W
17,309.00	89.40	0.60	7,849.67	9,901.75	-336.74	533,848.60	715,857.76	32° 27' 58.830 N	103° 46' 2.871 W
17,405.00	89.20	1.50	7,850.84	9,997.73	-334.99	533,944.57	715,859.52	32° 27' 59.779 N	103° 46' 2.844 W
17,499.00	88.90	1.20	7,852.40	10,091.69	-332.77	534,038.53	715,861.74	32° 28' 0.709 N	103° 46' 2.813 W
17,594.00	88.50	0.50	7,854.55	10,186.66	-331.36	534,133.50	715,863.14	32° 28' 1.649 N	103° 46' 2.790 W
17,688.00	90.00	0.10	7,855.79	10,280.64	-330.87	534,227.48	715,863.64	32° 28' 2.579 N	103° 46' 2.779 W
17,783.00	88.50	358.50	7,857.03	10,375.62	-332.03	534,322.46	715,862.48	32° 28' 3.518 N	103° 46' 2.787 W
17,878.00	89.20	358.40	7,858.94	10,470.57	-334.60	534,417.41	715,859.91	32° 28' 4.458 N	103° 46' 2.811 W
17,972.00	90.00	357.70	7,859.59	10,564.51	-337.80	534,511.35	715,856.71	32° 28' 5.388 N	103° 46' 2.842 W
18,067.00	90.90	357.10	7,858.85	10,659.41	-342.11	534,606.25	715,852.40	32° 28' 6.327 N	103° 46' 2.887 W
18,162.00	90.10	357.10	7,858.02	10,754.28	-346.91	534,701.12	715,847.59	32° 28' 7.266 N	103° 46' 2.937 W
18,256.00	90.50	356.80	7,857.52	10,848.15	-351.91	534,794.99	715,842.59	32° 28' 8.195 N	103° 46' 2.989 W



LEAM Drilling Systems LLC
Survey Report - Geographic



Company: DEVON ENERGY
Project: Eddy County, NM (NAD-83)
Site: Merlyn 27-22 Fed
Well: 1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 1H
TVD Reference: Cactus 105: 3480.8' GL + 28' RKB @
3508.80usft
MD Reference: Cactus 105: 3480.8' GL + 28' RKB @
3508.80usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
18,351.00	91.10	355.20	7,856.20	10,942.90	-358.54	534,889.74	715,835.97	32° 28' 9.133 N	103° 46' 3.061 W
18,797.00	91.10	355.20	7,847.64	11,387.26	-395.85	535,334.10	715,798.65	32° 28' 13.532 N	103° 46' 3.469 W
PBHL (M27-22F 1H)									

Checked By: _____ Approved By: _____ Date: _____



Devon Energy Production Company, L.P.
333 West Sheridan Avenue
Oklahoma City, OK 73102

405 235 3611 Phone
www.devonenergy.com

Writer's direct dial 405 552 3365
zach.graham@devon.com

March 31, 2015

VIA FEDERAL EXPRESS OVERNIGHT MAIL

Yates Petroleum Corporation
105 S. 4th Street
Artesia, NM 88210

Re: Application for a Non-Standard Location
Merlyn 27-22 Fed 1H
Sections 27/22, T21S-R31E
Eddy County, New Mexico

Dear Sir/Madam:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of a non-standard location covering the referenced well. Our records indicate that Yates Petroleum Corporation as the leasehold owner of the NW/4 NE/4 of Section 34-T21S-R31E is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). Objections to this application should be submitted to the New Mexico Oil Conservation Division within twenty (20) days of receipt of this letter. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned.

If you have any questions concerning this application, please contact the undersigned at (405) 552-3365.

Sincerely,

DEVON ENERGY PRODUCTION COMPANY, L.P.

A handwritten signature in black ink, appearing to read "Zach Graham".

Zach Graham
Landman

Yates Petroleum Corporation has no objection to this administrative application for a non-standard location.

By: _____

Title: _____

Date: _____

From: (405) 552-6150
Janet Small
DEVON
333 West Sheridan Avenue
OKC, OK 73102

Origin ID: OKCA



J151215022303uv

SHIP TO: (575) 748-1471

BILL SENDER

Yates Petroleum Corporation
105 S. 4th Street

ARTESIA, NM 88210

Ship Date: 31MAR15
ActWgt: 1.0 LB
CAD: 103493122/INET3610

Delivery Address Bar Code



Ref # 9001002216
Invoice #
PO #
Dept #

WED - 01 APR AM
STANDARD OVERNIGHT

TRK# 7732 6179 6659

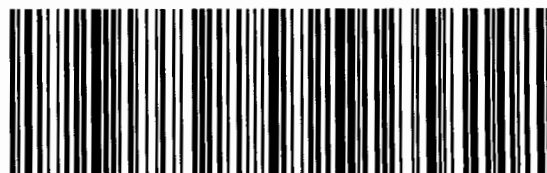
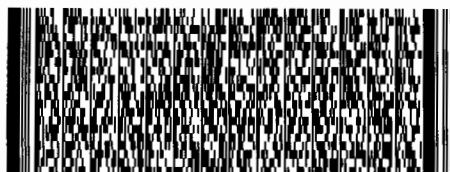
0201

AL ROWA

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NM-US

LBB



537J28FC5EE4B

After printing this label:

1. Use the "Print" button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned

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