



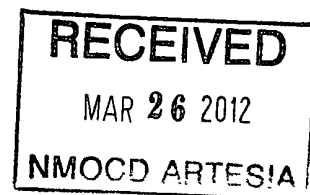
PHOENIX
TECHNOLOGY SERVICES

March 20, 2012

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

Dear District 2 - Artesia

Re: Devon Energy
Emerald PWU 20-3H
Eddy Co., NM
(API #30-015-39365)
Job No. 1210166

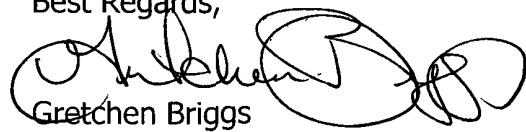


Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 606018). Other information required by your office is as follows:

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Marc Flusche	3H	7,863	12,219	03/08/12	03/16/12	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,


Gretchen Briggs
Operations Administrator

Certified mail receipt number: **7011 1570 0001 4364 9339**

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER 1210166

OPERATOR Devon Energy

WELL NAME Emerald PWU 20-3H

COUNTY & STATE Eddy, New Mexico

API WELL NUMBER 30-015-39365

PROPOSED DIRECTION 88.02

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
7,828 ft	7,746.27 ft	43.77	88.77	44.97 ft	197.30 ft	GYRO

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
8-Mar-12	7,863 ft	45.4	87.9

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
16-Mar-12	12,219 ft	90.6	89.7

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
16-Mar-12	12,303 ft	90.6	89.7

Marc Flusche

PRINT YOUR NAME ABOVE

M Flusche

SIGN YOUR NAME ABOVE

3/16/2012

TODAY'S DATE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.66
DECLINATION OR GRID	DECLINATION

MWD SUPERVISOR 1

Marc Flusche

DIRECTIONAL DRILLER 1

Greg Scott

MWD SUPERVISOR 2

Paul Perhonis

DIRECTIONAL DRILLER 2

Bobby Sanches

District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Avenue, Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

RECEIVED

MAR 26 2012

Form C-102

Issued October 15, 2009

Submit one copy to appropriate

District Office

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number		Pool Code		Pool Name	
				PARKWAY; BONE SPRING	
Property Code		Property Name			Well Number
		EMERALD PWU "20"			3H
GRID No.		Operator Name			Elevation
6137		DEVON ENERGY PRODUCTION COMPANY, L.P.			3324.2

10 Surface Location

U/L or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	20	19 S	29 E		2145	SOUTH	330	WEST	EDDY

11 Bottom Hole Location If Different From Surface

U/L or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	20	19 S	29 E		2145	SOUTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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.

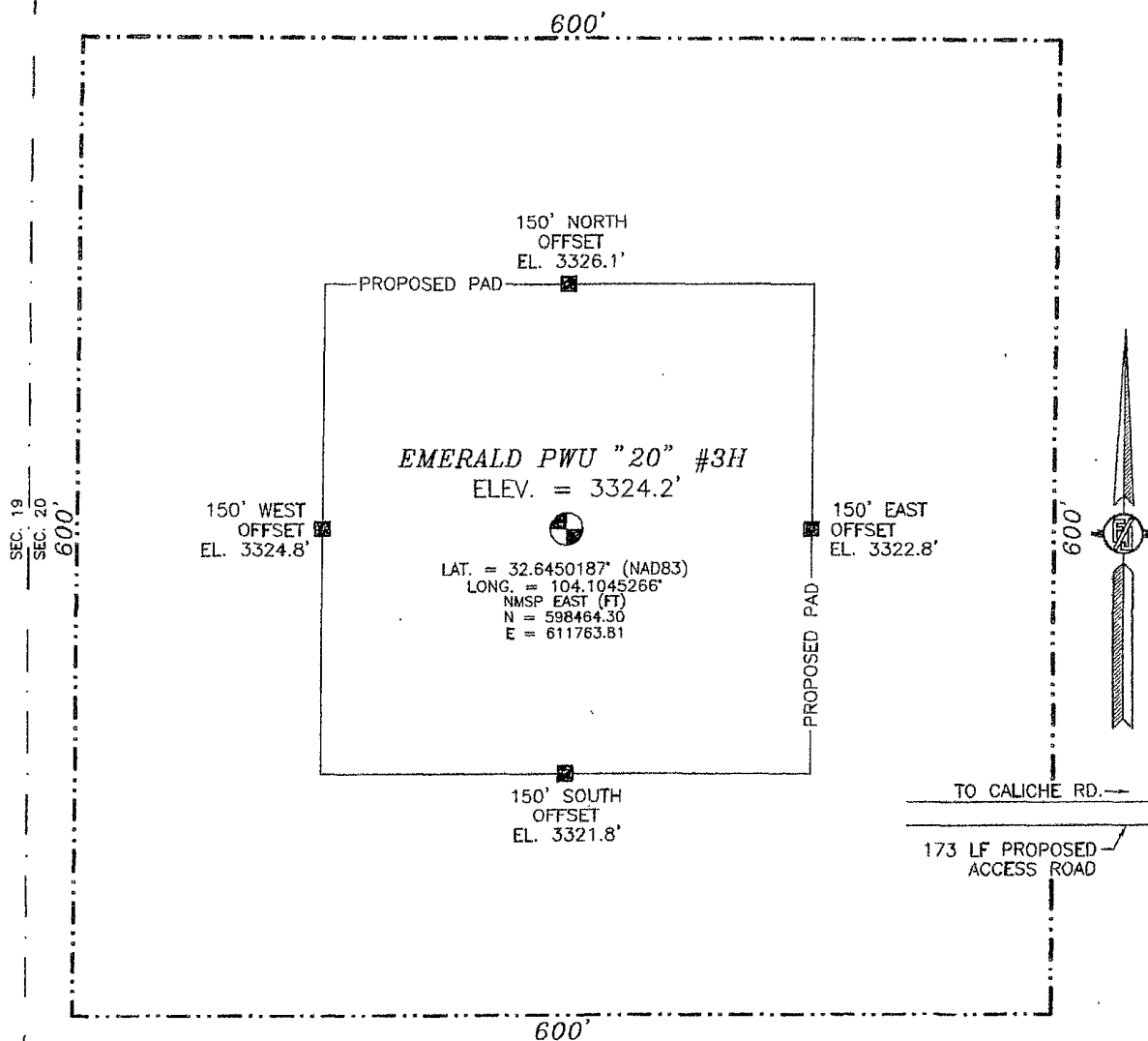
NW CORNER SEC. 20 LAT. = 32.653638° LONG. = 104.105599° NMSP EAST (FT) N = 601600.27 E = 611424.89		NE CORNER SEC. 20 LAT. = 32.853592° LONG. = 104.088385° NMSP EAST (FT) N = 601595.30 E = 616730.14	
PENETRATION POINT: 2145' FSL & 330' FWL			
PRODUCING AREA		PROJECT AREA	
EMERALD PWU "20" #3H ELEV. = 3324.2' LAT. = 32.6490187° (NAD83) LONG. = 104.1045266° NMSP EAST (RT) N = 598404.30 E = 611763.21		BOTTOM OF HOLE LAT. = 32.644967° LONG. = 104.089467° NMSP EAST (FT) N = 598455.83 E = 616398.12	
SURFACE LOCATION		BOTTOM OF HOLE	
SW CORNER SEC. 20 LAT. = 32.639128° LONG. = 104.105599° NMSP EAST (FT) N = 596320.20 E = 611436.01		SE CORNER SEC. 20 LAT. = 32.839070° LONG. = 104.088392° NMSP EAST (FT) N = 596310.66 E = 616734.00	

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 leased mineral interests in the land including the proposed bottom hole location or has a right to drill this well or this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.
 Signature:
 Date: 08/29/11
 Printed Name: **STEPHANIE A. YSAGA**

18 SURVEYOR CERTIFICATION
 I hereby certify that the well location shown on this plat was plotted from field notes of aerial surveys made by me or under my supervision, and that the same is true and correct.

 Signature:
 Printed Name: **JOSE LUIS MILLON, PLS 12797**
 Certificate Number: **112797**
 Survey No.: **510-R**

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



SECTION LAND PLAT

County Eddy State New Mexico

Section 20 Township 19 S Range 29 E

Emerald PWU 20 3 H

SHL: 2145' FSL, 330' FWL / BHL: 2145' FSL, 330' FEL

SHL ●			BHL →
ST NM K0 3702	ST NM L0 1513	ST NM K0 4251	ST NM L0 1513



Devon

Eddy County, NM (Nad83)

Emerald PWU 20

Emerald PWU 20-3H

Wellbore #1

Design: Wellbore #1

Devon Energy Inc.

19 March, 2012





Phoenix Technology Services
Devon Energy Inc.



Company: Devon
Project: Eddy County, NM (Nad83)
Site: Emerald PWU 20
Well: Emerald PWU 20-3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Emerald PWU 20-3H
TVD Reference: WELL @ 3343.20usft (Original Well Elev + 19' KB)
MD Reference: WELL @ 3343 20usft (Original Well Elev + 19' KB)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB v5000

Project	Eddy County, NM (Nad83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Emerald PWU 20		
Site Position:		Northing:	598,464.30 usft
From:	Map	Easting:	611,763.81 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 38' 42.0646 N
		Longitude:	104° 6' 16.2969 W
		Grid Convergence:	0.12 °

Well	Emerald PWU 20-3H		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 38' 42.0646 N
		Longitude:	104° 6' 16.2969 W
		Ground Level:	3,324.20 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	01/31/12	7.79
			Dip Angle
			60.47
			Field Strength
			48,748

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			88.02



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Survey Calculation Method: Minimum Curvature
Database: GCR DB v5000

Survey Program	Date	03/19/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
88.00	6,699.00	Gyro Surveys (Wellbore #1)	MWD	MWD - Standard
6,782.80	7,828.00	Gyro Surveys 2 (Wellbore #1)	MWD	MWD - Standard
7,863.00	12,303.00	Phoenix MWD Surveys (Wellbore #1)	MWD	MWD - Standard

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
	0.00	0.00	0.00	-3,343.20	0.00	0.00	0.00	0.00	0.00	598,464.30	611,763.81
	88.00	0.78	6.20	-3,255.20	88.00	0.60	0.06	0.09	0.89	598,464.90	611,763.87
	173.00	1.02	359.62	-3,170.21	172.99	1.93	0.12	0.19	0.31	598,466.23	611,763.93
	260.00	1.59	6.69	-3,083.24	259.96	3.90	0.26	0.39	0.68	598,468.20	611,764.07
	346.00	1.95	13.17	-2,997.28	345.92	6.51	0.73	0.95	0.48	598,470.81	611,764.54
	439.00	1.85	14.07	-2,904.33	438.87	9.51	1.46	1.78	0.11	598,473.81	611,765.27
	529.00	1.71	21.21	-2,814.37	528.83	12.17	2.29	2.71	0.29	598,476.47	611,766.10
	619.00	1.65	29.76	-2,724.41	618.79	14.54	3.42	3.92	0.29	598,478.84	611,767.23
	714.00	1.84	48.78	-2,629.45	713.75	16.74	5.25	5.82	0.64	598,481.04	611,769.06
	809.00	1.94	50.41	-2,534.51	808.69	18.77	7.64	8.28	0.12	598,483.07	611,771.45
	904.00	1.89	52.99	-2,439.56	903.64	20.73	10.13	10.84	0.10	598,485.03	611,773.94
	999.00	1.74	48.60	-2,344.61	998.59	22.63	12.46	13.23	0.22	598,486.93	611,776.27
	1,094.00	1.46	47.77	-2,249.64	1,093.56	24.40	14.44	15.27	0.30	598,488.70	611,778.25
	1,189.00	1.20	43.67	-2,154.67	1,188.53	25.93	16.02	16.91	0.29	598,490.23	611,779.83
	1,284.00	0.98	46.58	-2,059.69	1,283.51	27.21	17.30	18.23	0.24	598,491.51	611,781.11
	1,379.00	0.83	36.97	-1,964.70	1,378.50	28.32	18.30	19.27	0.22	598,492.62	611,782.11
	1,474.00	0.67	45.38	-1,869.71	1,473.49	29.26	19.11	20.11	0.20	598,493.56	611,782.92
	1,569.00	0.60	60.29	-1,774.71	1,568.49	29.89	19.94	20.96	0.19	598,494.19	611,783.75
	1,664.00	0.56	46.97	-1,679.72	1,663.48	30.46	20.71	21.75	0.15	598,494.76	611,784.52
	1,759.00	0.58	49.93	-1,584.72	1,758.48	31.08	21.42	22.48	0.04	598,495.38	611,785.23



Phoenix Technology Services
Devon Energy Inc.



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Design: Wellbore #1

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Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
1,854.00	0.57	39.75	-1,489.73	1,853.47	31.76	22.09	23.17	0.11	598,496.06	611,785.90	
1,949.00	0.52	51.18	-1,394.73	1,948.47	32.39	22.72	23.83	0.13	598,496.69	611,786.53	
2,044.00	0.54	50.72	-1,299.73	2,043.47	32.94	23.41	24.53	0.02	598,497.24	611,787.22	
2,139.00	0.52	33.06	-1,204.74	2,138.46	33.59	23.99	25.13	0.17	598,497.89	611,787.80	
2,234.00	0.46	38.74	-1,109.74	2,233.46	34.25	24.46	25.63	0.08	598,498.55	611,788.27	
2,329.00	0.52	38.56	-1,014.75	2,328.45	34.88	24.97	26.16	0.06	598,499.18	611,788.78	
2,424.00	0.59	31.19	-919.75	2,423.45	35.64	25.49	26.71	0.11	598,499.94	611,789.30	
2,519.00	0.50	51.26	-824.75	2,518.45	36.32	26.07	27.31	0.22	598,500.62	611,789.88	
2,709.00	0.45	49.90	-634.76	2,708.44	37.31	27.29	28.56	0.03	598,501.61	611,791.10	
2,804.00	0.43	51.02	-539.76	2,803.44	37.78	27.85	29.14	0.02	598,502.08	611,791.66	
2,994.00	0.53	49.41	-349.77	2,993.43	38.80	29.07	30.39	0.05	598,503.10	611,792.88	
3,089.00	0.47	44.22	-254.77	3,088.43	39.36	29.67	31.02	0.08	598,503.66	611,793.48	
3,184.00	0.45	56.28	-159.78	3,183.42	39.85	30.26	31.62	0.10	598,504.15	611,794.07	
3,279.00	0.49	59.92	-64.78	3,278.42	40.26	30.92	32.29	0.05	598,504.56	611,794.73	
3,374.00	0.34	57.57	30.22	3,373.42	40.62	31.51	32.89	0.16	598,504.92	611,795.32	
3,469.00	0.11	69.74	125.22	3,468.42	40.80	31.83	33.22	0.25	598,505.10	611,795.64	
3,564.00	0.09	236.80	220.22	3,563.42	40.79	31.85	33.25	0.21	598,505.09	611,795.66	
3,754.00	0.30	264.49	410.22	3,753.42	40.66	31.23	32.62	0.12	598,504.96	611,795.04	
3,944.00	1.28	5.10	600.20	3,943.40	42.73	30.93	32.39	0.72	598,507.03	611,794.74	
4,039.00	1.48	4.01	695.17	4,038.37	45.01	31.11	32.64	0.21	598,509.31	611,794.92	
4,134.00	1.40	347.29	790.14	4,133.34	47.36	30.94	32.56	0.45	598,511.66	611,794.75	
4,229.00	1.49	334.57	885.11	4,228.31	49.61	30.15	31.85	0.35	598,513.91	611,793.96	
4,324.00	1.72	323.81	980.08	4,323.28	51.88	28.78	30.56	0.40	598,516.18	611,792.59	
4,419.00	1.90	315.55	1,075.03	4,418.23	54.15	26.84	28.69	0.33	598,518.45	611,790.65	
4,514.00	1.94	313.77	1,169.97	4,513.17	56.39	24.57	26.51	0.08	598,520.69	611,788.38	
4,609.00	1.91	316.00	1,264.92	4,608.12	58.64	22.31	24.32	0.08	598,522.94	611,786.12	
4,704.00	1.87	313.36	1,359.87	4,703.07	60.84	20.08	22.17	0.10	598,525.14	611,783.89	



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4,799.00	2.21	312.60	1,454.81	4,798.01	63.15	17.61	19.78	0.36	598,527.45	611,781.42	
4,894.00	2.08	320.10	1,549.74	4,892.94	65.71	15.16	17.42	0.33	598,530.01	611,778.97	
4,989.00	1.94	320.37	1,644.68	4,987.88	68.27	13.02	15.37	0.15	598,532.57	611,776.83	
5,179.00	1.67	313.55	1,834.59	5,177.79	72.65	8.97	11.47	0.18	598,536.95	611,772.78	
5,274.00	1.25	307.27	1,929.56	5,272.76	74.24	7.14	9.70	0.47	598,538.54	611,770.95	
5,369.00	1.25	309.37	2,024.54	5,367.74	75.52	5.51	8.12	0.05	598,539.82	611,769.32	
5,464.00	1.36	310.48	2,119.51	5,462.71	76.91	3.85	6.51	0.12	598,541.21	611,767.66	
5,559.00	1.39	300.14	2,214.48	5,557.68	78.22	2.00	4.70	0.26	598,542.52	611,765.81	
5,654.00	1.75	297.79	2,309.45	5,652.65	79.47	-0.28	2.47	0.38	598,543.77	611,763.53	
5,749.00	2.09	295.16	2,404.40	5,747.60	80.89	-3.13	-0.33	0.37	598,545.19	611,760.68	
5,844.00	2.12	295.94	2,499.33	5,842.53	82.39	-6.28	-3.43	0.04	598,546.69	611,757.53	
5,939.00	1.90	293.17	2,594.27	5,937.47	83.78	-9.31	-6.41	0.25	598,548.08	611,754.50	
6,034.00	1.58	286.32	2,689.23	6,032.43	84.77	-12.01	-9.08	0.40	598,549.07	611,751.80	
6,129.00	1.35	273.49	2,784.20	6,127.40	85.20	-14.39	-11.43	0.42	598,549.50	611,749.42	
6,224.00	1.17	254.24	2,879.18	6,222.38	85.01	-16.44	-13.49	0.48	598,549.31	611,747.37	
6,319.00	1.22	241.69	2,974.16	6,317.36	84.27	-18.26	-15.34	0.28	598,548.57	611,745.55	
6,414.00	1.29	225.69	3,069.13	6,412.33	83.04	-19.92	-17.04	0.37	598,547.34	611,743.89	
6,509.00	1.50	212.22	3,164.10	6,507.30	81.24	-21.34	-18.52	0.41	598,545.54	611,742.47	
6,604.00	1.65	211.93	3,259.07	6,602.27	79.03	-22.73	-19.99	0.16	598,543.33	611,741.08	
6,699.00	2.30	209.00	3,354.01	6,697.21	76.20	-24.38	-21.73	0.69	598,540.50	611,739.43	
6,782.80	2.71	215.31	3,437.73	6,780.93	73.11	-26.34	-23.80	0.59	598,537.41	611,737.47	
6,877.60	2.50	216.58	3,532.43	6,875.63	69.62	-28.87	-26.44	0.23	598,533.92	611,734.94	
6,972.40	3.08	211.60	3,627.12	6,970.32	65.79	-31.43	-29.14	0.66	598,530.09	611,732.38	
7,067.60	3.09	224.07	3,722.18	7,065.38	61.77	-34.56	-32.40	0.70	598,526.07	611,729.25	
7,162.50	3.37	222.60	3,816.93	7,160.13	57.88	-38.22	-36.20	0.31	598,522.18	611,725.59	
7,194.10	3.79	219.29	3,848.47	7,191.67	56.39	-39.51	-37.54	1.48	598,520.69	611,724.30	
7,225.70	4.03	217.18	3,880.00	7,223.20	54.70	-40.85	-38.93	0.89	598,519.00	611,722.96	



Phoenix Technology Services
Devon Energy Inc.



Company: Devon
Project: Eddy County, NM (Nad83)
Site: Emerald PWU 20
Well: Emerald PWU 20-3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Emerald PWU 20-3H
TVD Reference: WELL @ 3343.20usft (Original Well Elev + 19' KB)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: GCR DB v5000

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
7,257.30	2.99	208.51	3,911.54	7,254.74	53.09	-41.91	-40.05	3.69	598,517.39	611,721.90
7,289.10	1.69	149.55	3,943.32	7,286.52	51.95	-42.07	-40.25	8.07	598,516.25	611,721.74
7,320.80	3.71	95.34	3,974.98	7,318.18	51.46	-40.81	-39.01	9.61	598,515.76	611,723.00
7,352.50	6.54	87.83	4,006.55	7,349.75	51.43	-37.99	-36.19	9.16	598,515.73	611,725.82
7,384.20	9.13	83.44	4,037.95	7,381.15	51.78	-33.68	-31.87	8.38	598,516.08	611,730.13
7,415.90	11.63	83.75	4,069.13	7,412.33	52.42	-28.01	-26.18	7.89	598,516.72	611,735.80
7,447.60	14.43	85.72	4,100.01	7,443.21	53.06	-20.89	-19.04	8.94	598,517.36	611,742.92
7,479.40	18.05	89.67	4,130.54	7,473.74	53.39	-12.01	-10.16	11.90	598,517.69	611,751.80
7,511.00	22.55	92.87	4,160.17	7,503.37	53.11	-1.06	0.78	14.66	598,517.41	611,762.75
7,542.70	27.25	93.77	4,188.92	7,532.12	52.33	12.26	14.06	14.87	598,516.63	611,776.07
7,574.50	30.59	93.34	4,216.75	7,559.95	51.38	27.61	29.37	10.52	598,515.68	611,791.42
7,606.20	33.25	92.93	4,243.65	7,586.85	50.46	44.34	46.06	8.42	598,514.76	611,808.15
7,637.80	37.06	93.46	4,269.48	7,612.68	49.45	62.51	64.18	12.10	598,513.75	611,826.32
7,669.50	41.64	92.93	4,293.99	7,637.19	48.33	82.57	84.19	14.49	598,512.63	611,846.38
7,701.10	45.16	93.52	4,316.95	7,660.15	47.11	104.24	105.81	11.21	598,511.41	611,868.05
7,732.90	48.44	93.81	4,338.71	7,681.91	45.62	127.37	128.87	10.34	598,509.92	611,891.18
7,764.50	48.83	92.29	4,359.60	7,702.80	44.36	151.06	152.50	3.82	598,508.66	611,914.87
7,796.30	47.27	87.91	4,380.86	7,724.06	44.31	174.69	176.12	11.36	598,508.61	611,938.50
7,828.00	43.77	88.77	4,403.07	7,746.27	44.97	197.30	198.74	11.21	598,509.27	611,961.11
Last Gyro Survey - Last Gyro Survey										
7,863.00	45.44	87.90	4,427.98	7,771.18	45.69	221.86	223.31	5.08	598,509.99	611,985.67
First Phoenix MWD Survey										
7,894.00	49.90	88.70	4,448.85	7,792.05	46.36	244.77	246.22	14.51	598,510.66	612,008.58
7,926.00	55.40	89.00	4,468.26	7,811.46	46.87	270.19	271.65	17.20	598,511.17	612,034.00
7,958.00	61.50	88.50	4,485.00	7,828.20	47.47	297.44	298.90	19.11	598,511.77	612,061.25
7,988.00	68.60	88.00	4,497.64	7,840.84	48.30	324.61	326.09	23.71	598,512.60	612,088.42
8,003.00	72.00	87.90	4,502.70	7,845.90	48.81	338.72	340.21	22.68	598,513.11	612,102.53



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Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVDSS (usft)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
8,021.00	76.00	87.60	4,507.66	7,850.86	49.49	356.01	357.50	22.28	598,513.79	612,119.82	
8,053.00	83.10	87.20	4,513.46	7,856.66	50.91	387.42	388.95	22.22	598,515.21	612,151.23	
8,084.00	86.90	86.50	4,516.16	7,859.36	52.61	418.25	419.82	12.46	598,516.91	612,182.06	
8,116.00	87.20	86.40	4,517.81	7,861.01	54.59	450.15	451.77	0.99	598,518.89	612,213.96	
8,180.00	86.60	86.20	4,521.27	7,864.47	58.71	513.92	515.64	0.99	598,523.01	612,277.73	
8,275.00	87.20	86.30	4,526.41	7,869.61	64.92	608.58	610.46	0.64	598,529.22	612,372.39	
8,369.00	87.60	87.60	4,530.67	7,873.87	69.91	702.35	704.34	1.45	598,534.21	612,466.16	
8,384.00	87.50	87.60	4,531.31	7,874.51	70.54	717.32	719.33	0.67	598,534.84	612,481.13	
8,464.00	87.40	87.50	4,534.87	7,878.07	73.96	797.17	799.25	0.18	598,538.26	612,560.98	
8,496.00	88.70	88.20	4,535.96	7,879.16	75.16	829.13	831.23	4.61	598,539.46	612,592.94	
8,528.00	89.60	88.40	4,536.44	7,879.64	76.11	861.11	863.22	2.88	598,540.41	612,624.92	
8,559.00	91.00	88.40	4,536.27	7,879.47	76.97	892.10	894.22	4.52	598,541.27	612,655.91	
8,654.00	93.50	88.90	4,532.54	7,875.74	79.21	986.99	989.14	2.68	598,543.51	612,750.80	
8,686.00	94.30	89.00	4,530.37	7,873.57	79.79	1,018.91	1,021.06	2.52	598,544.09	612,782.72	
8,749.00	95.50	89.30	4,524.99	7,868.19	80.73	1,081.67	1,083.81	1.96	598,545.03	612,845.48	
8,781.00	93.70	89.60	4,522.42	7,865.62	81.03	1,113.56	1,115.70	5.70	598,545.33	612,877.37	
8,844.00	92.10	89.70	4,519.23	7,862.43	81.42	1,176.48	1,178.59	2.54	598,545.72	612,940.29	
8,876.00	90.90	89.50	4,518.39	7,861.59	81.64	1,208.47	1,210.57	3.80	598,545.94	612,972.28	
8,971.00	90.20	89.70	4,517.48	7,860.68	82.30	1,303.46	1,305.53	0.77	598,546.60	613,067.27	
9,034.00	90.50	89.60	4,517.10	7,860.30	82.69	1,366.46	1,368.50	0.50	598,546.99	613,130.27	
9,066.00	89.30	89.20	4,517.15	7,860.35	83.02	1,398.46	1,400.49	3.95	598,547.32	613,162.27	
9,129.00	89.70	89.40	4,517.70	7,860.90	83.79	1,461.45	1,463.47	0.71	598,548.09	613,225.26	
9,224.00	89.20	89.00	4,518.62	7,861.82	85.12	1,556.43	1,558.45	0.67	598,549.42	613,320.24	
9,319.00	90.20	89.10	4,519.11	7,862.31	86.69	1,651.42	1,653.43	1.06	598,550.99	613,415.23	
9,414.00	89.70	88.60	4,519.20	7,862.40	88.60	1,746.40	1,748.42	0.74	598,552.90	613,510.21	
9,509.00	90.90	89.00	4,518.70	7,861.90	90.59	1,841.37	1,843.41	1.33	598,554.89	613,605.18	
9,604.00	91.70	89.30	4,516.54	7,859.74	92.00	1,936.34	1,938.36	0.90	598,556.30	613,700.15	



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9,699.00	92.50	89.70	4,513.06	7,856.26	92.83	2,031.27	2,033.26	0.94	598,557.13	613,795.08	
9,794.00	91.20	89.50	4,510.00	7,853.20	93.49	2,126.22	2,128.18	1.38	598,557.79	613,890.03	
9,889.00	89.60	88.60	4,509.33	7,852.53	95.06	2,221.20	2,223.16	1.93	598,559.36	613,985.01	
9,984.00	90.00	88.60	4,509.66	7,852.86	97.39	2,316.17	2,318.15	0.42	598,561.69	614,079.98	
10,079.00	90.60	88.70	4,509.17	7,852.37	99.62	2,411.14	2,413.14	0.64	598,563.92	614,174.95	
10,174.00	90.80	88.70	4,508.01	7,851.21	101.78	2,506.11	2,508.13	0.21	598,566.08	614,269.92	
10,269.00	91.70	89.70	4,505.93	7,849.13	103.11	2,601.07	2,603.08	1.42	598,567.41	614,364.88	
10,362.00	89.80	89.20	4,504.72	7,847.92	104.00	2,694.06	2,696.04	2.11	598,568.30	614,457.87	
10,455.00	89.40	89.40	4,505.37	7,848.57	105.13	2,787.05	2,789.02	0.48	598,569.43	614,550.86	
10,547.00	89.70	89.10	4,506.09	7,849.29	106.34	2,879.04	2,880.99	0.46	598,570.64	614,642.85	
10,640.00	90.10	89.30	4,506.25	7,849.45	107.64	2,972.03	2,973.97	0.48	598,571.94	614,735.84	
10,735.00	90.30	89.70	4,505.92	7,849.12	108.47	3,067.02	3,068.94	0.47	598,572.77	614,830.83	
10,826.00	90.10	89.90	4,505.60	7,848.80	108.78	3,158.02	3,159.89	0.31	598,573.08	614,921.83	
10,918.00	89.40	88.30	4,506.00	7,849.20	110.23	3,250.01	3,251.87	1.90	598,574.53	615,013.82	
11,010.00	89.50	88.60	4,506.89	7,850.09	112.72	3,341.97	3,343.87	0.34	598,577.02	615,105.78	
11,104.00	89.50	88.40	4,507.71	7,850.91	115.18	3,435.93	3,437.86	0.21	598,579.48	615,199.74	
11,198.00	89.80	89.10	4,508.28	7,851.48	117.23	3,529.91	3,531.85	0.81	598,581.53	615,293.72	
11,293.00	89.50	89.10	4,508.86	7,852.06	118.72	3,624.89	3,626.83	0.32	598,583.02	615,388.70	
11,385.00	89.50	89.40	4,509.66	7,852.86	119.92	3,716.88	3,718.81	0.33	598,584.22	615,480.69	
11,479.00	90.00	88.30	4,510.07	7,853.27	121.81	3,810.86	3,812.79	1.29	598,586.11	615,574.67	
11,571.00	90.60	88.10	4,509.59	7,852.79	124.70	3,902.81	3,904.79	0.69	598,589.00	615,666.62	
11,665.00	90.70	87.60	4,508.52	7,851.72	128.23	3,996.74	3,998.79	0.54	598,592.53	615,760.55	
11,758.00	90.90	87.90	4,507.23	7,850.43	131.88	4,089.66	4,091.77	0.39	598,596.18	615,853.47	
11,850.00	91.30	88.60	4,505.46	7,848.66	134.69	4,181.60	4,183.76	0.88	598,598.99	615,945.41	
11,942.00	91.40	88.70	4,503.29	7,846.49	136.85	4,273.55	4,275.73	0.15	598,601.15	616,037.36	
12,034.00	90.80	89.00	4,501.53	7,844.73	138.70	4,365.51	4,367.70	0.73	598,603.00	616,129.32	
12,126.00	90.50	89.30	4,500.48	7,843.68	140.06	4,457.50	4,459.67	0.46	598,604.36	616,221.31	



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12,219.00	90.60	89.70	4,499.59	7,842.79	140.88	4,550.49	4,552.64	0.44	598,605.18	616,314.30	
Last Phoenix MWD Survey											
12,303.00	90.60	89.70	4,498.71	7,841.91	141.32	4,634.48	4,636.60	0.00	598,605.62	616,398.29	
Projection to TD											

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,828.00	7,746.27	44.97	197.30	Last Gyro Survey	
7,828.00	7,746.27	44.97	197.30	Last Gyro Survey	
7,863.00	7,771.18	45.69	221.86	First Phoenix MWD Survey	
12,219.00	7,842.79	140.88	4,550.49	Last Phoenix MWD Survey	
12,303.00	7,841.91	141.32	4,634.48	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____