

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

Form C-102
Revised October 15, 2009
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-40037	² Pool Code 55510	³ Pool Name SCANLON DRAW PARKWAY WEST ; BONE SPRING
⁴ Property Code 38436	⁵ Property Name EMERALD PWU 20	⁶ Well Number 4H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3879.7

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
M	20	19 S	29 E		890	SOUTH	340	WEST	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	20	19 S	29 E		890	SOUTH	330	EAST	EDDY

¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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. = 32.6536384°N LONG. = 104.1055990°W NMSP EAST (FT) N = 601599.76 E = 611427.11	RECEIVED APR 2 2012 NMOCD/ARTESIA	NE CORNER SEC. 20 LAT. = 32.6535924°N LONG. = 104.0883657°W NMSP EAST (FT) N = 601594.86 E = 616731.03
1st PERFORATION POINT: 890' FSL & 905' FWL		
PROJECT AREA PRODUCING AREA		
EMERALD PWU 20-4H ELEV. = 3314.3' LAT. = 32.6415698°N (NAD83) LONG. = 104.1044948°W NMSP EAST (FT) N = 597209.86 E = 611776.39	BOTTOM OF HOLE LAT. = 32.6415182°N LONG. = 104.0894656°W NMSP EAST (FT) N = 597201.40 E = 616402.59	
SURFACE LOCATION 340' SW CORNER SEC. 20 LAT. = 32.6391287°N LONG. = 104.1055996°W NMSP EAST (FT) N = 596321.06 E = 611438.23	BOTTOM OF HOLE 330' SE CORNER SEC. 20 LAT. = 32.6390698°N LONG. = 104.0883925°W NMSP EAST (FT) N = 596311.40 E = 616734.96	

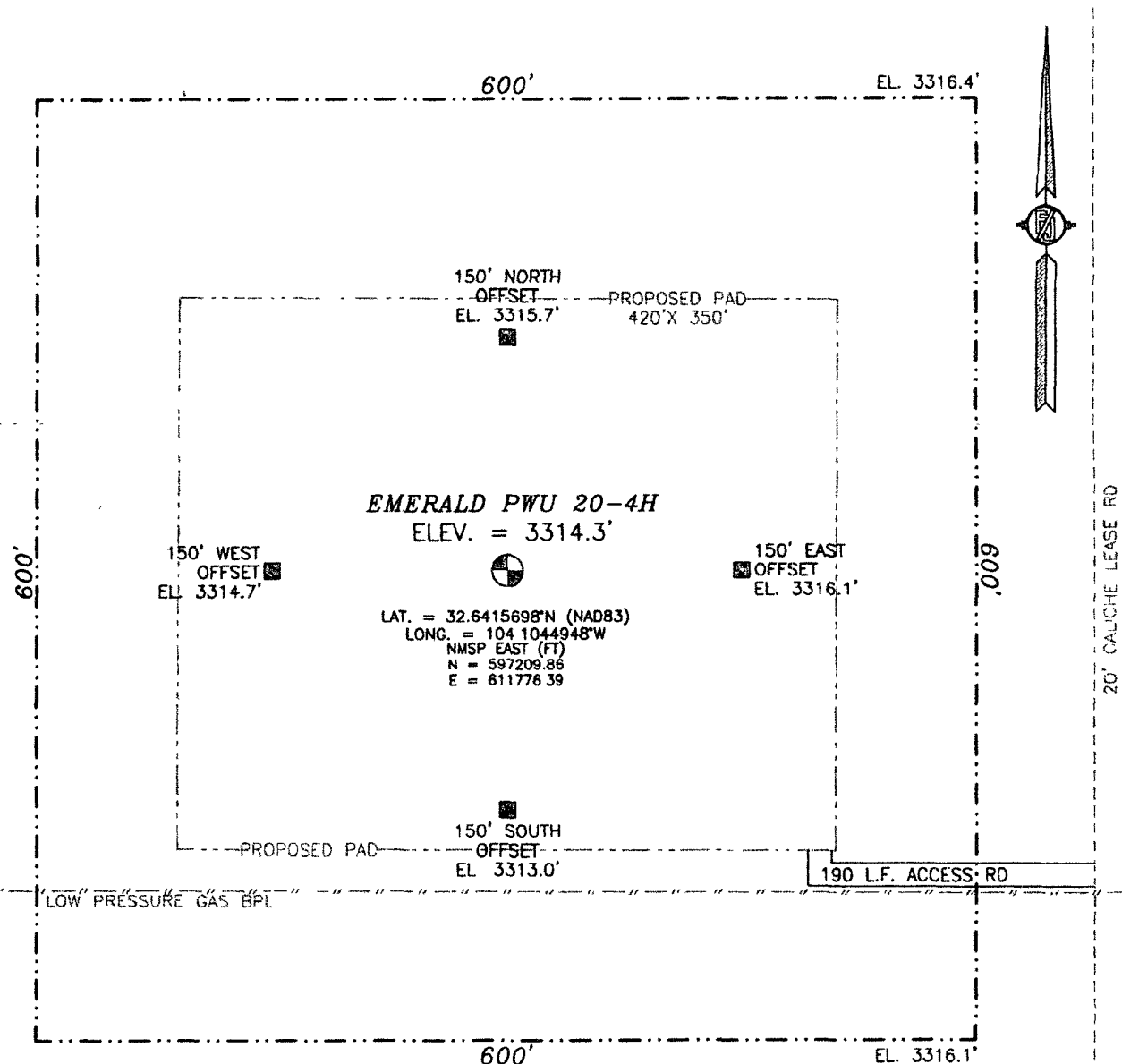
17 OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to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

Signature: *[Signature]* Date: **02/27/2012**
Printed Name: **Stephanie A. Ysasaga**

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.

Date of Survey: **FEBRUARY 20, 2012**
Signature and Seal of Professional Surveyor: *[Signature]*
Certificate Number: **FILIMON F JARAMILLO, PLS 12797**
Survey No: **791**

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



010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CR 206 (ILLINOIS CAMP) AND CR 235
(CURRY COMB) GO SE. ON CR 235 FOR 3.1 MILES TO CR 246
(MILLMAN RD) GO EAST ON CR 235 4.45 MILES TO CALICHE LEASE RD
ON RIGHT (SOUTH) GO SOUTH OVER YELLOW CATTLE GUARD 1.1 MILES
SITE IS ABOUT 200 FT ON RIGHT (WEST)

DEVON ENERGY PRODUCTION COMPANY, L.P.
EMERALD PWU 20-4H

LOCATED 890 FT. FROM THE SOUTH LINE
AND 340 FT. FROM THE WEST LINE OF
SECTION 20, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 20, 2012

SURVEY NO. 791

MADRON SURVEYING, INC.

301 SOUTH CANAL
(575) 231-3341

CARLSBAD, NEW MEXICO

NOT TO SCALE

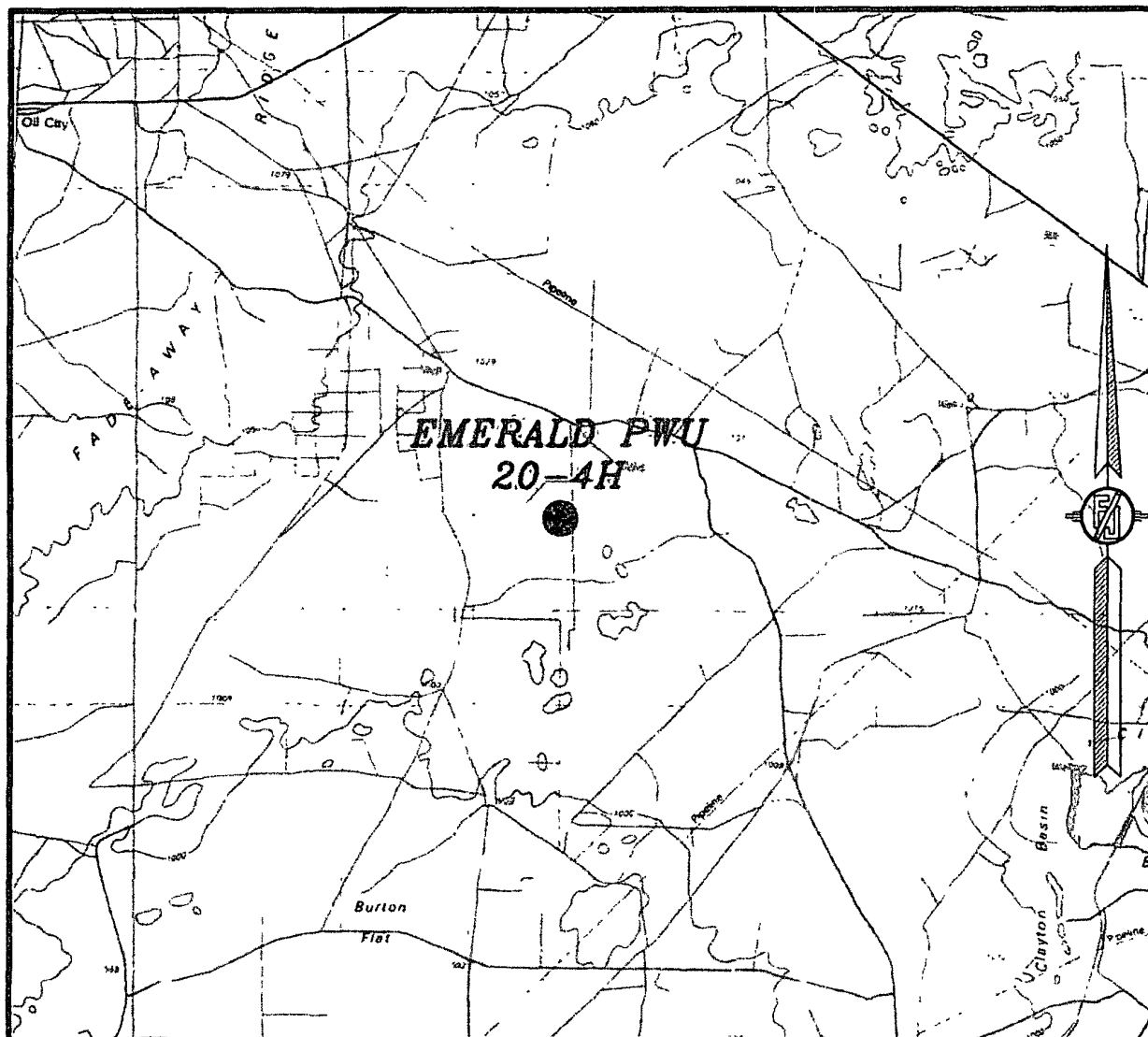
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AND 340 FT. FROM THE WEST LINE OF
SECTION 20, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

SURVEY NO. 791

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

301 SOUTH CANA
(575) 234-3341

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



NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
EMERALD PWU 20-4H

LOCATED 890 FT. FROM THE SOUTH LINE
AND 340 FT. FROM THE WEST LINE OF
SECTION 20, TOWNSHIP 19 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

FEBRUARY 20, 2012

SURVEY NO. 791

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

Devon Energy Corporation

Eddy County, NM (NAD 83)

Emerald PWU 20

Emerald PWU 20 4H

HOBBS OCD

Wellbore #1

MAR 12 2012

RECEIVED

Plan: Plan #1

Sperry Drilling Services Proposal Report

01 March, 2012

Well Coordinates 597,209 86 N, 611,776 39 E (32° 38' 29 65" N, 104° 06' 16 18" W)

Ground Level 3,314 00 ft

Local Coordinate Origin

Centered on Well Emerald PWU 20 4H

Viewing Datum

GL 3314' + KB 25' @ 3339 00ft (Cactus 126)

TVDs to System

N

North Reference

Grid

Unit System

API - US Survey Feet

Version 2003 16 Build 431

HALLIBURTON

Plan Report for Emerald PWU 20 4H - Plan #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
100 00	0 00	0 00	100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
200 00	0 00	0 00	200 00	0 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	0 00
330 00	0 00	0 00	330 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Salado										
400 00	0 00	0 00	400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
500 00	0 00	0 00	500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
600 00	0 00	0 00	600 00	0 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	0 00
800 00	0 00	0 00	800 00	0 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	0 00
985 00	0 00	0 00	985 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Tansil Dolomite										
1,000 00	0 00	0 00	1,000 00	0 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	0 00
1,120 00	0 00	0 00	1,120 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Yates										
1,200 00	0 00	0 00	1,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,300 00	0 00	0 00	1,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,400 00	0 00	0 00	1,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,500 00	0 00	0 00	1,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,580 00	0 00	0 00	1,580 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Seven Rivers										
1,600 00	0 00	0 00	1,600 00	0 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	0 00
1,800 00	0 00	0 00	1,800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
1,870 00	0 00	0 00	1,870 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Queen										
1,900 00	0 00	0 00	1,900 00	0 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	0 00
2,100 00	0 00	0 00	2,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,200 00	0 00	0 00	2,200 00	0 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	0 00
2,400 00	0 00	0 00	2,400 00	0 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	0 00
2,600 00	0 00	0 00	2,600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,620 00	0 00	0 00	2,620 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
San Andres										
2,700 00	0 00	0 00	2,700 00	0 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	0 00
2,900 00	0 00	0 00	2,900 00	0 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	0 00
3,100 00	0 00	0 00	3,100 00	0 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	0 00
3,245 00	0 00	0 00	3,245 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
Delaware										
3,300 00	0 00	0 00	3,300 00	0 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	0 00
3,500 00	0 00	0 00	3,500 00	0 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	0 00
3,700 00	0 00	0 00	3,700 00	0 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	0 00
3,900 00	0 00	0 00	3,900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,000 00	0 00	0 00	4,000 00	0 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	0 00
4,200 00	0 00	0 00	4,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00

HALLIBURTON**Plan Report for Emerald PWU 20 4H - Plan #1**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,375.00	0.00	0.00	4,375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cutoff Dolomite										
4,400.00	0.00	0.00	4,400.00	0.00	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	0.00
Bone Spring Lm										
4,600.00	0.00	0.00	4,600.00	0.00	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	0.00
4,800.00	0.00	0.00	4,800.00	0.00	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	0.00
5,000.00	0.00	0.00	5,000.00	0.00	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	0.00
5,200.00	0.00	0.00	5,200.00	0.00	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	0.00
5,400.00	0.00	0.00	5,400.00	0.00	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	0.00
5,600.00	0.00	0.00	5,600.00	0.00	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	0.00
5,800.00	0.00	0.00	5,800.00	0.00	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	0.00
6,000.00	0.00	0.00	6,000.00	0.00	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	0.00
6,200.00	0.00	0.00	6,200.00	0.00	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	0.00
6,400.00	0.00	0.00	6,400.00	0.00	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	0.00
6,600.00	0.00	0.00	6,600.00	0.00	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	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,815.00	0.00	0.00	6,815.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1st Bone Spring Ss										
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,965.00	0.00	0.00	6,965.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd Bone Spring Lime										
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	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	0.00
7,269.35	0.00	0.00	7,269.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP/Start Build @ 7269.35' MD - Build Rate = 10.00°/100'										
7,300.00	3.06	90.10	7,299.99	0.00	0.82	0.82	10.00	10.00	0.00	90.10
7,350.00	8.06	90.10	7,349.73	-0.01	5.67	5.67	10.00	10.00	0.00	0.00
7,400.00	13.06	90.10	7,398.87	-0.03	14.83	14.83	10.00	10.00	0.00	0.00
7,450.00	18.06	90.10	7,447.02	-0.05	28.24	28.24	10.00	10.00	0.00	0.00
7,500.00	23.06	90.10	7,493.82	-0.08	45.80	45.80	10.00	10.00	0.00	0.00
7,550.00	28.06	90.10	7,538.91	-0.12	67.37	67.37	10.00	10.00	0.00	0.00
7,600.00	33.06	90.10	7,581.95	-0.17	92.79	92.79	10.00	10.00	0.00	0.00
7,650.00	38.06	90.10	7,622.61	-0.22	121.86	121.86	10.00	10.00	0.00	0.00
7,700.00	43.06	90.10	7,660.58	-0.28	154.37	154.37	10.00	10.00	0.00	0.00
7,750.00	48.06	90.10	7,695.58	-0.35	190.06	190.06	10.00	10.00	0.00	0.00
7,800.00	53.06	90.10	7,727.33	-0.42	228.66	228.66	10.00	10.00	0.00	0.00
7,806.19	53.68	90.10	7,731.02	-0.43	233.63	233.63	10.00	10.00	0.00	0.00
2nd Bone Spring Ss										
7,850.00	58.06	90.10	7,755.59	-0.49	269.89	269.89	10.00	10.00	0.00	0.00
7,900.00	63.06	90.10	7,780.15	-0.57	313.42	313.42	10.00	10.00	0.00	0.00
7,950.00	68.06	90.10	7,800.83	-0.66	358.93	358.93	10.00	10.00	0.00	0.00
8,000.00	73.06	90.10	7,817.46	-0.74	406.06	406.06	10.00	10.00	0.00	0.00
8,050.00	78.06	90.10	7,829.92	-0.83	454.47	454.47	10.00	10.00	0.00	0.00
8,100.00	83.06	90.10	7,838.12	-0.92	503.78	503.78	10.00	10.00	0.00	0.00
8,150.00	88.06	90.10	7,841.98	-1.01	553.61	553.61	10.00	10.00	0.00	0.00

Plan Report for Emerald PWU 20 4H - Plan #1

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
8,166.85	89.75	90.10	7,842.30	-1.04	570.46	570.46	10.00	10.00	0.00	0.00
End Build @ 8166.85' MD - Hold Angle = 89.75°										
8,200.00	89.75	90.10	7,842.45	-1.10	603.61	603.61	0.00	0.00	0.00	0.00
8,300.00	89.75	90.10	7,842.88	-1.29	703.60	703.61	0.00	0.00	0.00	0.00
8,400.00	89.75	90.10	7,843.32	-1.47	803.60	803.60	0.00	0.00	0.00	0.00
8,500.00	89.75	90.10	7,843.76	-1.65	903.60	903.60	0.00	0.00	0.00	0.00
8,600.00	89.75	90.10	7,844.19	-1.84	1,003.60	1,003.60	0.00	0.00	0.00	0.00
8,700.00	89.75	90.10	7,844.63	-2.02	1,103.60	1,103.60	0.00	0.00	0.00	0.00
8,800.00	89.75	90.10	7,845.07	-2.20	1,203.60	1,203.60	0.00	0.00	0.00	0.00
8,900.00	89.75	90.10	7,845.50	-2.38	1,303.60	1,303.60	0.00	0.00	0.00	0.00
9,000.00	89.75	90.10	7,845.94	-2.57	1,403.60	1,403.60	0.00	0.00	0.00	0.00
9,100.00	89.75	90.10	7,846.37	-2.75	1,503.60	1,503.60	0.00	0.00	0.00	0.00
9,200.00	89.75	90.10	7,846.81	-2.93	1,603.59	1,603.60	0.00	0.00	0.00	0.00
9,300.00	89.75	90.10	7,847.25	-3.12	1,703.59	1,703.60	0.00	0.00	0.00	0.00
9,400.00	89.75	90.10	7,847.68	-3.30	1,803.59	1,803.60	0.00	0.00	0.00	0.00
9,500.00	89.75	90.10	7,848.12	-3.48	1,903.59	1,903.59	0.00	0.00	0.00	0.00
9,600.00	89.75	90.10	7,848.56	-3.66	2,003.59	2,003.59	0.00	0.00	0.00	0.00
9,700.00	89.75	90.10	7,848.99	-3.85	2,103.59	2,103.59	0.00	0.00	0.00	0.00
9,800.00	89.75	90.10	7,849.43	-4.03	2,203.59	2,203.59	0.00	0.00	0.00	0.00
9,900.00	89.75	90.10	7,849.87	-4.21	2,303.59	2,303.59	0.00	0.00	0.00	0.00
10,000.00	89.75	90.10	7,850.30	-4.40	2,403.59	2,403.59	0.00	0.00	0.00	0.00
10,100.00	89.75	90.10	7,850.74	-4.58	2,503.58	2,503.59	0.00	0.00	0.00	0.00
10,200.00	89.75	90.10	7,851.17	-4.76	2,603.58	2,603.59	0.00	0.00	0.00	0.00
10,300.00	89.75	90.10	7,851.61	-4.94	2,703.58	2,703.59	0.00	0.00	0.00	0.00
10,400.00	89.75	90.10	7,852.05	-5.13	2,803.58	2,803.59	0.00	0.00	0.00	0.00
10,500.00	89.75	90.10	7,852.48	-5.31	2,903.58	2,903.58	0.00	0.00	0.00	0.00
10,600.00	89.75	90.10	7,852.92	-5.49	3,003.58	3,003.58	0.00	0.00	0.00	0.00
10,700.00	89.75	90.10	7,853.36	-5.68	3,103.58	3,103.58	0.00	0.00	0.00	0.00
10,800.00	89.75	90.10	7,853.79	-5.86	3,203.58	3,203.58	0.00	0.00	0.00	0.00
10,900.00	89.75	90.10	7,854.23	-6.04	3,303.58	3,303.58	0.00	0.00	0.00	0.00
11,000.00	89.75	90.10	7,854.67	-6.22	3,403.57	3,403.58	0.00	0.00	0.00	0.00
11,100.00	89.75	90.10	7,855.10	-6.41	3,503.57	3,503.58	0.00	0.00	0.00	0.00
11,200.00	89.75	90.10	7,855.54	-6.59	3,603.57	3,603.58	0.00	0.00	0.00	0.00
11,300.00	89.75	90.10	7,855.97	-6.77	3,703.57	3,703.58	0.00	0.00	0.00	0.00
11,400.00	89.75	90.10	7,856.41	-6.96	3,803.57	3,803.58	0.00	0.00	0.00	0.00
11,500.00	89.75	90.10	7,856.85	-7.14	3,903.57	3,903.58	0.00	0.00	0.00	0.00
11,600.00	89.75	90.10	7,857.28	-7.32	4,003.57	4,003.57	0.00	0.00	0.00	0.00
11,700.00	89.75	90.10	7,857.72	-7.50	4,103.57	4,103.57	0.00	0.00	0.00	0.00
11,800.00	89.75	90.10	7,858.16	-7.69	4,203.57	4,203.57	0.00	0.00	0.00	0.00
11,900.00	89.75	90.10	7,858.59	-7.87	4,303.56	4,303.57	0.00	0.00	0.00	0.00
12,000.00	89.75	90.10	7,859.03	-8.05	4,403.56	4,403.57	0.00	0.00	0.00	0.00
12,100.00	89.75	90.10	7,859.46	-8.24	4,503.56	4,503.57	0.00	0.00	0.00	0.00
12,200.00	89.75	90.10	7,859.90	-8.42	4,603.56	4,603.57	0.00	0.00	0.00	0.00
12,222.64	89.75	90.10	7,860.00	-8.46	4,626.20	4,626.21	0.00	0.00	0.00	0.00
TD @ 12222.64' MD - Emerald PWU 20 4H / BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,269.35	7,269.35	0.00	0.00	KOP/Start Build @ 7269.35' MD
7,269.35	7,269.35	0.00	0.00	Build Rate = 10.00°/100'
8,166.85	7,842.30	-1.04	570.46	End Build @ 8166.85' MD
8,166.85	7,842.30	-1.04	570.46	Hold Angle = 89.75°
12,222.64	7,860.00	-8.46	4,626.20	TD @ 12222.64' MD

HALLIBURTON**Plan Report for Emerald PWU 20 4H - Plan #1****Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	90 10	Slot	0 00	0 00	0 00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0 00	12,222 64	Plan #1	MWD

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	7,880 19	Target line		0 25	90 10
330 00	330 00	Salado		0 25	90 10
985 00	985 00	Tansil Dolomite		0 25	90 10
1,120 00	1,120 00	Yates		0 25	90 10
1,580 00	1,580 00	Seven Rivers		0 25	90 10
1,870 00	1,870 00	Queen		0 25	90 10
2,620 00	2,620 00	San Andres		0 25	90 10
3,245 00	3,245 00	Delaware		0 25	90 10
4,375 00	4,375 00	Cutoff Dolomite		0 25	90 10
4,500 00	4,500 00	Bone Spring Lm		0 25	90 10
6,815 00	6,815 00	1st Bone Spring Ss		0 25	90 10
6,965 00	6,965 00	2nd Bone Spring Lime		0 25	90 10
7,806 19	7,730 00	2nd Bone Spring Ss		0 25	90 10

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Emerald PWU 20 4H / BHL	7,860 00	-8 46	4,626 20	Point

HALLIBURTON

North Reference Sheet for Emerald PWU 20 - Emerald PWU 20 4H - Wellbore #1

All data is in US Feet unless otherwise stated Directions and Coordinates are relative to Grid North Reference

Vertical Depths are relative to GL 3314' + KB 25' @ 3339 00ft (Cactus 126) Northing and Easting are relative to Emerald PWU 20 4H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104 33°, Longitude Origin 0° 0' 0 000 E°, Latitude Origin 0° 0' 0 000 N°

False Easting 541,337 50ft, False Northing 0 00ft, Scale Reduction 0 99991477

Grid Coordinates of Well 597,209 86 ft N, 611,776 39 ft E

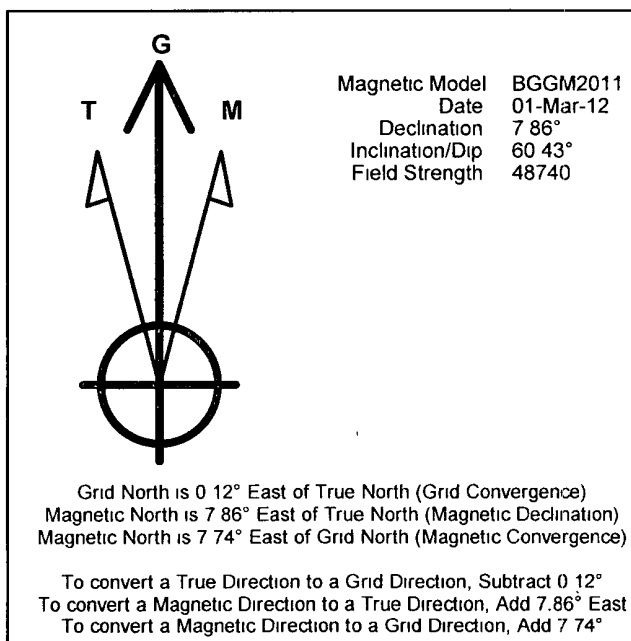
Geographical Coordinates of Well 32° 38' 29 65" N, 104° 06' 16 18" W

Grid Convergence at Surface is 0 12°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,222 64ft

the Bottom Hole Displacement is 4,626 21ft in the Direction of 90 10° (Grid)

Magnetic Convergence at surface is -7 74° (1 March 2012, , BGGM2011)



Project: Eddy County, NM (NAD 83)
Site: Emerald PWU 20
Well: Emerald PWU 20 4H
Wellbore: Wellbore #1
Plan: Plan #1
Rig: Cactus 126

SURFACE LOCATION

US State Plane 1983
 New Mexico Eastern Zone
 Elevation GL 3314' + KB 25' @ 3339 00ft (Cactus 126)
 Northing 597209 86 Easting 611776 39 Latitude 32° 38' 29 651 N Longitude 104° 6' 16 181 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
7269 35	0 00	0 00	7269 35	0 00	0 00	0 00	0 00	0 00	KOP/Start Build
8166 85	89 75	90 10	7842 30	-1 04	570 46	10 00	90 10	570 46	End Build
12222 64	89 75	90 10	7860 00	-8 46	4626 20	0 00	0 00	4626 21	TD

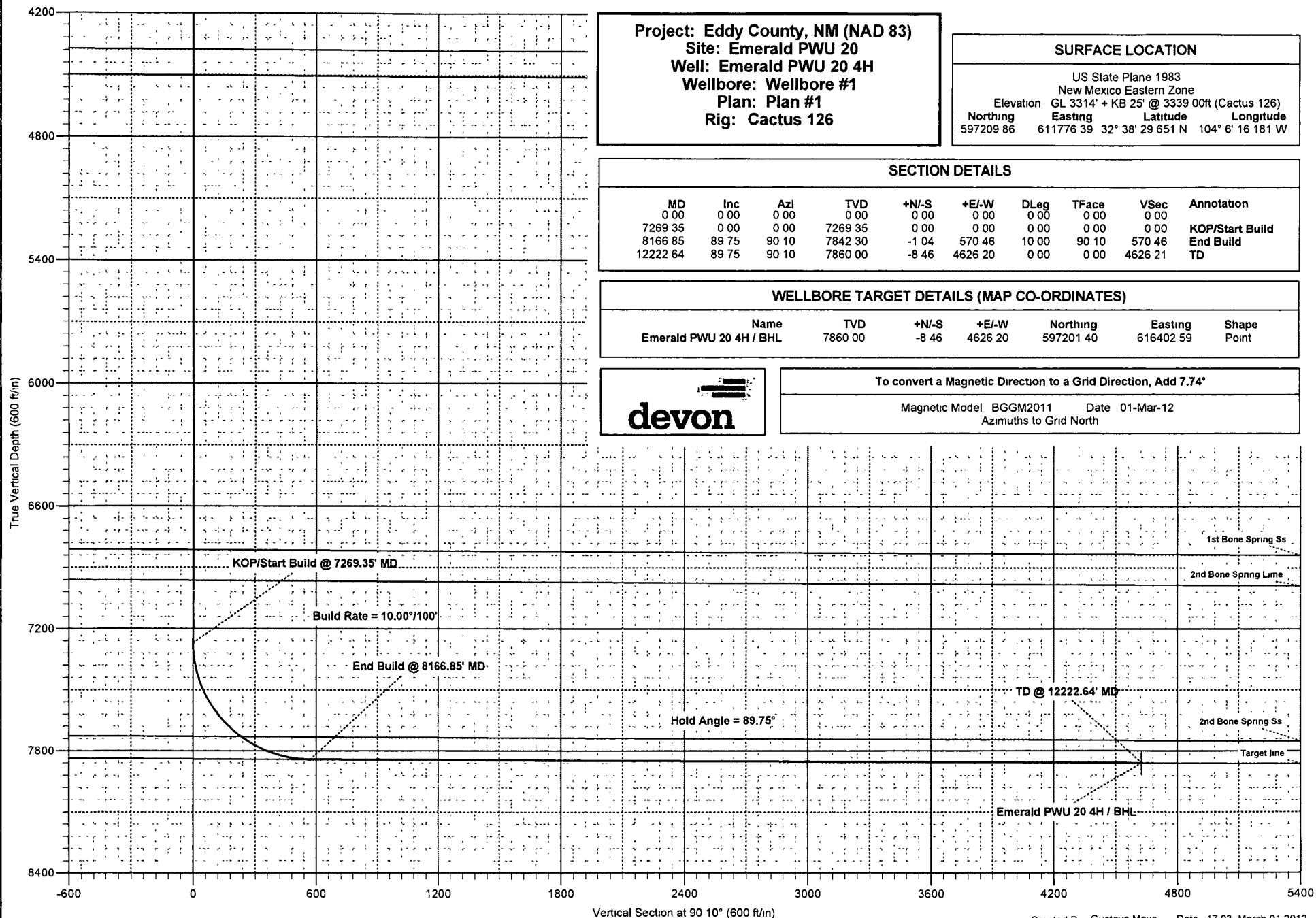
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Emerald PWU 20 4H / BHL	7860 00	-8 46	4626 20	597201 40	616402 59	Point

devon

To convert a Magnetic Direction to a Grid Direction, Add 7.74°

Magnetic Model BGGM2011 Date 01-Mar-12
 Azimuths to Grid North



Standard Survey

Company: Devon Energy Corporation
Project: Eddy County
Site: Emerald PWU 20
Well: Emerald PWU 20 4H
Wellbore: Wellbore #1
Design/Survey: Plan #1
North Reference Grid

MD ft	Inc °	Azi (Grid) °	TVDSS ft	TVD ft	N/S ft	E/W ft	Northings ft	Eastings ft	DLS °/100ft	V.Sec ft
0.00	0.00	0.00	-3339.00	0.00	0.00	0.00	597209.86	611776.39	0.00	0.00
100.00	0.00	0.00	-3239.00	100.00	0.00	0.00	597209.86	611776.39	0.00	0.00
200.00	0.00	0.00	-3139.00	200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
300.00	0.00	0.00	-3039.00	300.00	0.00	0.00	597209.86	611776.39	0.00	0.00
400.00	0.00	0.00	-2939.00	400.00	0.00	0.00	597209.86	611776.39	0.00	0.00
500.00	0.00	0.00	-2839.00	500.00	0.00	0.00	597209.86	611776.39	0.00	0.00
600.00	0.00	0.00	-2739.00	600.00	0.00	0.00	597209.86	611776.39	0.00	0.00
700.00	0.00	0.00	-2639.00	700.00	0.00	0.00	597209.86	611776.39	0.00	0.00
800.00	0.00	0.00	-2539.00	800.00	0.00	0.00	597209.86	611776.39	0.00	0.00
900.00	0.00	0.00	-2439.00	900.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1000.00	0.00	0.00	-2339.00	1000.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1100.00	0.00	0.00	-2239.00	1100.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1200.00	0.00	0.00	-2139.00	1200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1300.00	0.00	0.00	-2039.00	1300.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1400.00	0.00	0.00	-1939.00	1400.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1500.00	0.00	0.00	-1839.00	1500.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1600.00	0.00	0.00	-1739.00	1600.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1700.00	0.00	0.00	-1639.00	1700.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1800.00	0.00	0.00	-1539.00	1800.00	0.00	0.00	597209.86	611776.39	0.00	0.00
1900.00	0.00	0.00	-1439.00	1900.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2000.00	0.00	0.00	-1339.00	2000.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2100.00	0.00	0.00	-1239.00	2100.00	0.00	0.00	597209.86	611776.39	0.00	0.00

2200.00	0.00	0.00	-1139.00	2200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2300.00	0.00	0.00	-1039.00	2300.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2400.00	0.00	0.00	-939.00	2400.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2500.00	0.00	0.00	-839.00	2500.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2600.00	0.00	0.00	-739.00	2600.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2700.00	0.00	0.00	-639.00	2700.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2800.00	0.00	0.00	-539.00	2800.00	0.00	0.00	597209.86	611776.39	0.00	0.00
2900.00	0.00	0.00	-439.00	2900.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3000.00	0.00	0.00	-339.00	3000.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3100.00	0.00	0.00	-239.00	3100.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3200.00	0.00	0.00	-139.00	3200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3300.00	0.00	0.00	-39.00	3300.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3400.00	0.00	0.00	61.00	3400.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3500.00	0.00	0.00	161.00	3500.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3600.00	0.00	0.00	261.00	3600.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3700.00	0.00	0.00	361.00	3700.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3800.00	0.00	0.00	461.00	3800.00	0.00	0.00	597209.86	611776.39	0.00	0.00
3900.00	0.00	0.00	561.00	3900.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4000.00	0.00	0.00	661.00	4000.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4100.00	0.00	0.00	761.00	4100.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4200.00	0.00	0.00	861.00	4200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4300.00	0.00	0.00	961.00	4300.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4400.00	0.00	0.00	1061.00	4400.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4500.00	0.00	0.00	1161.00	4500.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4600.00	0.00	0.00	1261.00	4600.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4700.00	0.00	0.00	1361.00	4700.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4800.00	0.00	0.00	1461.00	4800.00	0.00	0.00	597209.86	611776.39	0.00	0.00
4900.00	0.00	0.00	1561.00	4900.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5000.00	0.00	0.00	1661.00	5000.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5100.00	0.00	0.00	1761.00	5100.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5200.00	0.00	0.00	1861.00	5200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5300.00	0.00	0.00	1961.00	5300.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5400.00	0.00	0.00	2061.00	5400.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5500.00	0.00	0.00	2161.00	5500.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5600.00	0.00	0.00	2261.00	5600.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5700.00	0.00	0.00	2361.00	5700.00	0.00	0.00	597209.86	611776.39	0.00	0.00
5800.00	0.00	0.00	2461.00	5800.00	0.00	0.00	597209.86	611776.39	0.00	0.00

5900.00	0.00	0.00	2561.00	5900.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6000.00	0.00	0.00	2661.00	6000.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6100.00	0.00	0.00	2761.00	6100.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6200.00	0.00	0.00	2861.00	6200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6300.00	0.00	0.00	2961.00	6300.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6400.00	0.00	0.00	3061.00	6400.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6500.00	0.00	0.00	3161.00	6500.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6600.00	0.00	0.00	3261.00	6600.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6700.00	0.00	0.00	3361.00	6700.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6800.00	0.00	0.00	3461.00	6800.00	0.00	0.00	597209.86	611776.39	0.00	0.00
6900.00	0.00	0.00	3561.00	6900.00	0.00	0.00	597209.86	611776.39	0.00	0.00
7000.00	0.00	0.00	3661.00	7000.00	0.00	0.00	597209.86	611776.39	0.00	0.00
7100.00	0.00	0.00	3761.00	7100.00	0.00	0.00	597209.86	611776.39	0.00	0.00
7200.00	0.00	0.00	3861.00	7200.00	0.00	0.00	597209.86	611776.39	0.00	0.00
7269.35	0.00	0.00	3930.35	7269.35	0.00	0.00	597209.86	611776.39	0.00	0.00
7300.00	3.06	90.10	3960.99	7299.99	0.00	0.82	597209.86	611777.21	10.00	0.82
7350.00	8.06	90.10	4010.73	7349.73	-0.01	5.67	597209.85	611782.06	10.00	5.67
7400.00	13.06	90.10	4059.87	7398.87	-0.03	14.83	597209.83	611791.22	10.00	14.83
7450.00	18.06	90.10	4108.02	7447.02	-0.05	28.24	597209.81	611804.63	10.00	28.24
7500.00	23.06	90.10	4154.82	7493.82	-0.08	45.80	597209.78	611822.19	10.00	45.80
7550.00	28.06	90.10	4199.91	7538.91	-0.12	67.37	597209.74	611843.76	10.00	67.37
7600.00	33.06	90.10	4242.95	7581.95	-0.17	92.79	597209.69	611869.18	10.00	92.79
7650.00	38.06	90.10	4283.61	7622.61	-0.22	121.86	597209.64	611898.25	10.00	121.86
7700.00	43.06	90.10	4321.58	7660.58	-0.28	154.37	597209.58	611930.76	10.00	154.37
7750.00	48.06	90.10	4356.58	7695.58	-0.35	190.06	597209.51	611966.45	10.00	190.06
7800.00	53.06	90.10	4388.33	7727.33	-0.42	228.66	597209.44	612005.05	10.00	228.66
7850.00	58.06	90.10	4416.59	7755.59	-0.49	269.89	597209.37	612046.28	10.00	269.89
7900.00	63.06	90.10	4441.15	7780.15	-0.57	313.42	597209.29	612089.81	10.00	313.42
7950.00	68.06	90.10	4461.83	7800.83	-0.66	358.93	597209.20	612135.32	10.00	358.93
8000.00	73.06	90.10	4478.46	7817.46	-0.74	406.06	597209.12	612182.45	10.00	406.06
8050.00	78.06	90.10	4490.92	7829.92	-0.83	454.47	597209.03	612230.86	10.00	454.47
8100.00	83.06	90.10	4499.12	7838.12	-0.92	503.78	597208.94	612280.17	10.00	503.78
8150.00	88.06	90.10	4502.98	7841.98	-1.01	553.61	597208.85	612330.00	10.00	553.61
8166.85	89.75	90.10	4503.30	7842.30	-1.04	570.46	597208.82	612346.85	10.00	570.46
8200.00	89.75	90.10	4503.45	7842.45	-1.10	603.61	597208.76	612380.00	0.00	603.61
8300.00	89.75	90.10	4503.88	7842.88	-1.29	703.60	597208.57	612479.99	0.00	703.61
8400.00	89.75	90.10	4504.32	7843.32	-1.47	803.60	597208.39	612579.99	0.00	803.60

8500.00	89.75	90.10	4504.76	7843.76	-1.65	903.60	597208.21	612679.99	0.00	903.60
8600.00	89.75	90.10	4505.19	7844.19	-1.84	1003.60	597208.03	612779.99	0.00	1003.60
8700.00	89.75	90.10	4505.63	7844.63	-2.02	1103.60	597207.84	612879.99	0.00	1103.60
8800.00	89.75	90.10	4506.07	7845.07	-2.20	1203.60	597207.66	612979.99	0.00	1203.60
8900.00	89.75	90.10	4506.50	7845.50	-2.38	1303.60	597207.48	613079.99	0.00	1303.60
9000.00	89.75	90.10	4506.94	7845.94	-2.57	1403.60	597207.29	613179.99	0.00	1403.60
9100.00	89.75	90.10	4507.37	7846.37	-2.75	1503.60	597207.11	613279.99	0.00	1503.60
9200.00	89.75	90.10	4507.81	7846.81	-2.93	1603.59	597206.93	613379.98	0.00	1603.60
9300.00	89.75	90.10	4508.25	7847.25	-3.12	1703.59	597206.75	613479.98	0.00	1703.60
9400.00	89.75	90.10	4508.68	7847.68	-3.30	1803.59	597206.56	613579.98	0.00	1803.60
9500.00	89.75	90.10	4509.12	7848.12	-3.48	1903.59	597206.38	613679.98	0.00	1903.59
9600.00	89.75	90.10	4509.56	7848.56	-3.66	2003.59	597206.20	613779.98	0.00	2003.59
9700.00	89.75	90.10	4509.99	7848.99	-3.85	2103.59	597206.01	613879.98	0.00	2103.59
9800.00	89.75	90.10	4510.43	7849.43	-4.03	2203.59	597205.83	613979.98	0.00	2203.59
9900.00	89.75	90.10	4510.87	7849.87	-4.21	2303.59	597205.65	614079.98	0.00	2303.59
10000.00	89.75	90.10	4511.30	7850.30	-4.40	2403.59	597205.47	614179.98	0.00	2403.59
10100.00	89.75	90.10	4511.74	7850.74	-4.58	2503.58	597205.28	614279.97	0.00	2503.59
10200.00	89.75	90.10	4512.17	7851.17	-4.76	2603.58	597205.10	614379.97	0.00	2603.59
10300.00	89.75	90.10	4512.61	7851.61	-4.94	2703.58	597204.92	614479.97	0.00	2703.59
10400.00	89.75	90.10	4513.05	7852.05	-5.13	2803.58	597204.73	614579.97	0.00	2803.59
10500.00	89.75	90.10	4513.48	7852.48	-5.31	2903.58	597204.55	614679.97	0.00	2903.58
10600.00	89.75	90.10	4513.92	7852.92	-5.49	3003.58	597204.37	614779.97	0.00	3003.58
10700.00	89.75	90.10	4514.36	7853.36	-5.68	3103.58	597204.18	614879.97	0.00	3103.58
10800.00	89.75	90.10	4514.79	7853.79	-5.86	3203.58	597204.00	614979.97	0.00	3203.58
10900.00	89.75	90.10	4515.23	7854.23	-6.04	3303.58	597203.82	615079.97	0.00	3303.58
11000.00	89.75	90.10	4515.67	7854.67	-6.22	3403.57	597203.64	615179.96	0.00	3403.58
11100.00	89.75	90.10	4516.10	7855.10	-6.41	3503.57	597203.45	615279.96	0.00	3503.58
11200.00	89.75	90.10	4516.54	7855.54	-6.59	3603.57	597203.27	615379.96	0.00	3603.58
11300.00	89.75	90.10	4516.97	7855.97	-6.77	3703.57	597203.09	615479.96	0.00	3703.58
11400.00	89.75	90.10	4517.41	7856.41	-6.96	3803.57	597202.90	615579.96	0.00	3803.58
11500.00	89.75	90.10	4517.85	7856.85	-7.14	3903.57	597202.72	615679.96	0.00	3903.58
11600.00	89.75	90.10	4518.28	7857.28	-7.32	4003.57	597202.54	615779.96	0.00	4003.57
11700.00	89.75	90.10	4518.72	7857.72	-7.50	4103.57	597202.36	615879.96	0.00	4103.57
11800.00	89.75	90.10	4519.16	7858.16	-7.69	4203.57	597202.17	615979.96	0.00	4203.57
11900.00	89.75	90.10	4519.59	7858.59	-7.87	4303.56	597201.99	616079.95	0.00	4303.57
12000.00	89.75	90.10	4520.03	7859.03	-8.05	4403.56	597201.81	616179.95	0.00	4403.57
12100.00	89.75	90.10	4520.46	7859.46	-8.24	4503.56	597201.62	616279.95	0.00	4503.57

12200.00	89.75	90.10	4520.90	7859.90	-8.42	4603.56	597201.44	616379.95	0.00	4603.57
12222.64	89.75	90.10	4521.00	7860.00	-8.46	4626.20	597201.40	616402.59	0.00	4626.21

