



CONCHO

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

EIDER FED #303H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

25 June, 2018



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Project LEA COUNTY, NM
Map System: US State Plane 1927 (Exact solution) **System Datum:** Mean Sea Level
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

Site BULLDOG
Site Position: **Northing:** 398,637.10 usft **Latitude:** 32° 5' 36.820 N
From: Map **Easting:** 741,887.40 usft **Longitude:** 103° 33' 8.116 W
Position Uncertainty: 0.0 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.42 °

Well EIDER FED #303H
Well Position **+N-S** 0.0 usft **Northing:** 425,253.40 usft **Latitude:** 32° 10' 2.198 N
+E-W 0.0 usft **Easting:** 712,360.50 usft **Longitude:** 103° 38' 49.366 W
Position Uncertainty 3.0 usft **Wellhead Elevation:** usft **Ground Level:** 3,525.2 usft

Wellbore OWB
Magnetics **Model Name** **Sample Date** **Declination** **Dip Angle** **Field Strength**
 WMM2015 10/23/2017 (°) (°) (nT)
 6.97 59.98 47,847.21213860

Design ACTUAL WELLPATH
Audit Notes:
Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.0
Vertical Section: **Depth From (TVD)** **+N-S** **+E-W** **Direction**
 (usft) (usft) (usft) (°)
 0.0 0.0 0.0 356.97

Survey Program **Date** 5/14/2018
From **To** **Survey (Wellbore)** **Tool Name** **Description**
 (usft) (usft)
 100.0 9,077.0 GYRO (OWB) Standard Keeper 104 Standard Wireline Keeper ver 1.0.4
 9,155.0 17,143.0 MWD-CURVE/LATERAL (OWB) MWD+IFR1+MS OWSG MWD + IFR1 + Multi-Station Correction

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.12	183.86	100.0	-0.1	0.0	-0.1	0.12	0.12	0.00
125.0	0.06	320.51	125.0	-0.1	0.0	-0.1	0.67	-0.24	546.60
150.0	0.08	105.31	150.0	-0.1	0.0	-0.1	0.53	0.08	579.20
175.0	0.07	247.59	175.0	-0.1	0.0	-0.1	0.57	-0.04	569.12
200.0	0.07	141.20	200.0	-0.1	0.0	-0.1	0.45	0.00	-425.56
225.0	0.08	269.30	225.0	-0.2	0.0	-0.2	0.54	0.04	512.40
250.0	0.09	264.26	250.0	-0.2	-0.1	-0.2	0.05	0.04	-20.16



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
275.0	0.21	141.37	275.0	-0.2	0.0	-0.2	1.08	0.48	-491.56
300.0	0.08	175.24	300.0	-0.2	0.0	-0.2	0.60	-0.52	135.48
325.0	0.02	262.77	325.0	-0.3	0.0	-0.3	0.33	-0.24	350.12
350.0	0.07	6.53	350.0	-0.3	0.0	-0.3	0.31	0.20	415.04
375.0	0.06	43.20	375.0	-0.2	0.0	-0.2	0.17	-0.04	146.68
400.0	0.17	4.81	400.0	-0.2	0.0	-0.2	0.51	0.44	-153.56
425.0	0.10	259.87	425.0	-0.1	0.0	-0.1	0.87	-0.28	-419.76
450.0	0.05	256.88	450.0	-0.2	0.0	-0.2	0.20	-0.20	-11.96
475.0	0.15	203.70	475.0	-0.2	-0.1	-0.2	0.51	0.40	-212.72
500.0	0.17	207.15	500.0	-0.2	-0.1	-0.2	0.09	0.08	13.80
525.0	0.27	221.41	525.0	-0.3	-0.2	-0.3	0.45	0.40	57.04
550.0	0.21	221.63	550.0	-0.4	-0.2	-0.4	0.24	-0.24	0.88
575.0	0.27	234.55	575.0	-0.5	-0.3	-0.5	0.32	0.24	51.68
600.0	0.24	244.54	600.0	-0.5	-0.4	-0.5	0.21	-0.12	39.96
625.0	0.22	282.99	625.0	-0.5	-0.5	-0.5	0.61	-0.08	153.80
650.0	0.46	212.91	650.0	-0.6	-0.6	-0.6	1.75	0.96	-280.32
675.0	0.57	215.80	675.0	-0.8	-0.7	-0.8	0.45	0.44	11.56
700.0	0.71	213.49	700.0	-1.0	-0.9	-1.0	0.57	0.56	-9.24
725.0	0.79	216.41	725.0	-1.3	-1.1	-1.2	0.35	0.32	11.68
750.0	0.84	215.39	750.0	-1.6	-1.3	-1.5	0.21	0.20	-4.08
775.0	0.91	232.65	775.0	-1.9	-1.5	-1.8	1.09	0.28	69.04
800.0	1.04	220.87	800.0	-2.1	-1.8	-2.0	0.95	0.52	-47.12
825.0	1.00	225.40	825.0	-2.5	-2.2	-2.4	0.36	-0.16	18.12
850.0	1.13	218.40	850.0	-2.8	-2.5	-2.7	0.73	0.52	-28.00
875.0	0.87	228.42	875.0	-3.1	-2.8	-3.0	1.25	-1.04	40.08
900.0	1.00	228.66	900.0	-3.4	-3.1	-3.2	0.52	0.52	0.96
925.0	1.00	219.42	925.0	-3.7	-3.4	-3.5	0.64	0.00	-36.96
950.0	0.85	222.51	950.0	-4.0	-3.6	-3.8	0.63	-0.60	12.36
975.0	0.56	232.13	975.0	-4.2	-3.9	-4.0	1.25	-1.16	38.48
1,000.0	0.77	202.12	1,000.0	-4.5	-4.0	-4.3	1.60	0.84	-120.04
1,025.0	0.65	215.52	1,025.0	-4.7	-4.2	-4.5	0.82	-0.48	53.60
1,050.0	0.87	211.86	1,050.0	-5.0	-4.3	-4.8	0.90	0.88	-14.64
1,075.0	0.76	214.96	1,075.0	-5.3	-4.5	-5.1	0.47	-0.44	12.40
1,100.0	0.87	217.11	1,099.9	-5.6	-4.7	-5.3	0.46	0.44	8.60
1,125.0	0.69	214.34	1,124.9	-5.9	-4.9	-5.6	0.74	-0.72	-11.08
1,150.0	0.60	222.68	1,149.9	-6.1	-5.1	-5.8	0.52	-0.36	33.36
1,175.0	0.58	220.82	1,174.9	-6.3	-5.3	-6.0	0.11	-0.08	-7.44
1,200.0	0.88	211.73	1,199.9	-6.5	-5.5	-6.2	1.28	1.20	-36.36
1,225.0	0.72	214.63	1,224.9	-6.8	-5.7	-6.5	0.66	-0.64	11.60
1,250.0	0.58	217.12	1,249.9	-7.1	-5.8	-6.8	0.57	-0.56	9.96
1,275.0	0.77	217.02	1,274.9	-7.3	-6.0	-7.0	0.76	0.76	-0.40
1,300.0	0.74	212.18	1,299.9	-7.6	-6.2	-7.2	0.28	-0.12	-19.36



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
1,325.0	0.72	223.17	1,324.9	-7.8	-6.4	-7.5	0.56	-0.08	43.96
1,350.0	0.74	224.55	1,349.9	-8.1	-6.6	-7.7	0.11	0.08	5.52
1,375.0	0.70	214.96	1,374.9	-8.3	-6.8	-7.9	0.51	-0.16	-38.36
1,400.0	0.64	219.02	1,399.9	-8.5	-7.0	-8.1	0.31	-0.24	16.24
1,425.0	0.66	225.71	1,424.9	-8.7	-7.2	-8.3	0.31	0.08	26.76
1,450.0	0.68	226.93	1,449.9	-8.9	-7.4	-8.5	0.10	0.08	4.88
1,475.0	0.89	215.46	1,474.9	-9.2	-7.6	-8.8	1.05	0.84	-45.88
1,500.0	0.85	231.06	1,499.9	-9.5	-7.9	-9.0	0.96	-0.16	62.40
1,525.0	0.85	228.86	1,524.9	-9.7	-8.1	-9.3	0.13	0.00	-8.80
1,550.0	0.70	222.30	1,549.9	-9.9	-8.4	-9.5	0.70	-0.60	-26.24
1,575.0	0.74	227.33	1,574.9	-10.2	-8.6	-9.7	0.30	0.16	20.12
1,600.0	0.72	229.72	1,599.9	-10.4	-8.8	-9.9	0.15	-0.08	9.56
1,625.0	0.81	231.33	1,624.9	-10.6	-9.1	-10.1	0.37	0.36	6.44
1,650.0	1.00	221.76	1,649.9	-10.9	-9.4	-10.4	0.97	0.76	-38.28
1,675.0	0.96	220.82	1,674.9	-11.2	-9.7	-10.7	0.17	-0.16	-3.76
1,700.0	0.94	219.64	1,699.9	-11.5	-9.9	-11.0	0.11	-0.08	-4.72
1,725.0	1.04	221.95	1,724.9	-11.8	-10.2	-11.3	0.43	0.40	9.24
1,750.0	1.12	221.39	1,749.9	-12.2	-10.5	-11.6	0.32	0.32	-2.24
1,775.0	1.20	220.87	1,774.9	-12.6	-10.9	-12.0	0.32	0.32	-2.08
1,800.0	1.25	215.62	1,799.9	-13.0	-11.2	-12.4	0.49	0.20	-21.00
1,825.0	1.39	217.99	1,824.9	-13.4	-11.5	-12.8	0.60	0.56	9.48
1,850.0	1.45	216.71	1,849.9	-13.9	-11.9	-13.3	0.27	0.24	-5.12
1,875.0	1.43	220.46	1,874.9	-14.4	-12.3	-13.8	0.39	-0.08	15.00
1,900.0	1.50	223.85	1,899.8	-14.9	-12.7	-14.2	0.45	0.28	13.56
1,925.0	1.65	223.61	1,924.8	-15.4	-13.2	-14.7	0.60	0.60	-0.96
1,950.0	1.66	225.17	1,949.8	-15.9	-13.7	-15.2	0.18	0.04	6.24
1,975.0	1.55	226.43	1,974.8	-16.4	-14.2	-15.6	0.46	-0.44	5.04
2,000.0	1.61	219.11	1,999.8	-16.9	-14.7	-16.1	0.84	0.24	-29.28
2,025.0	1.66	221.64	2,024.8	-17.5	-15.2	-16.6	0.35	0.20	10.12
2,050.0	1.73	222.65	2,049.8	-18.0	-15.6	-17.1	0.30	0.28	4.04
2,075.0	1.77	222.53	2,074.8	-18.6	-16.2	-17.7	0.16	0.16	-0.48
2,100.0	1.65	223.81	2,099.8	-19.1	-16.7	-18.2	0.50	-0.48	5.12
2,125.0	1.72	220.14	2,124.8	-19.7	-17.2	-18.7	0.51	0.28	-14.68
2,150.0	1.83	214.79	2,149.7	-20.3	-17.6	-19.3	0.80	0.44	-21.40
2,175.0	1.95	220.17	2,174.7	-20.9	-18.1	-19.9	0.86	0.48	21.52
2,200.0	1.89	220.03	2,199.7	-21.6	-18.7	-20.5	0.24	-0.24	-0.56
2,225.0	1.86	222.54	2,224.7	-22.2	-19.2	-21.1	0.35	-0.12	10.04
2,250.0	1.93	217.71	2,249.7	-22.8	-19.7	-21.7	0.70	0.28	-19.32
2,275.0	2.18	215.00	2,274.7	-23.5	-20.3	-22.4	1.07	1.00	-10.84
2,300.0	2.21	218.11	2,299.7	-24.3	-20.8	-23.2	0.49	0.12	12.44
2,325.0	2.24	214.13	2,324.6	-25.1	-21.4	-23.9	0.63	0.12	-15.92
2,350.0	2.15	218.08	2,349.6	-25.9	-22.0	-24.7	0.70	-0.36	15.80



Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: EIDER FED #303H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
 TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
 MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM_Users

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)
2,375.0	2.22	215.89	2,374.6	-26.6	-22.6	-25.4	0.44	0.28	-8.76
2,400.0	2.19	217.92	2,399.6	-27.4	-23.1	-26.1	0.33	-0.12	8.12
2,425.0	2.20	211.89	2,424.6	-28.2	-23.7	-26.9	0.92	0.04	-24.12
2,450.0	2.17	212.65	2,449.5	-29.0	-24.2	-27.7	0.17	-0.12	3.04
2,475.0	2.09	209.42	2,474.5	-29.8	-24.7	-28.4	0.58	-0.32	-12.92
2,500.0	1.52	201.79	2,499.5	-30.5	-25.0	-29.1	2.47	-2.28	-30.52
2,525.0	1.64	192.13	2,524.5	-31.1	-25.2	-29.8	1.17	0.48	-38.64
2,550.0	1.42	185.80	2,549.5	-31.8	-25.3	-30.4	1.11	-0.88	-25.32
2,575.0	1.48	179.79	2,574.5	-32.4	-25.4	-31.0	0.65	0.24	-24.04
2,600.0	1.42	185.55	2,599.5	-33.1	-25.4	-31.7	0.63	-0.24	23.04
2,625.0	1.31	186.61	2,624.5	-33.6	-25.4	-32.3	0.45	-0.44	4.24
2,650.0	1.32	188.86	2,649.5	-34.2	-25.5	-32.8	0.21	0.04	9.00
2,675.0	1.53	180.12	2,674.5	-34.8	-25.6	-33.4	1.21	0.84	-34.96
2,700.0	1.60	177.01	2,699.4	-35.5	-25.5	-34.1	0.44	0.28	-12.44
2,725.0	1.67	173.34	2,724.4	-36.2	-25.5	-34.8	0.50	0.28	-14.68
2,750.0	1.67	174.86	2,749.4	-37.0	-25.4	-35.6	0.18	0.00	6.08
2,775.0	1.61	176.72	2,774.4	-37.7	-25.4	-36.3	0.32	-0.24	7.44
2,800.0	1.76	174.26	2,799.4	-38.4	-25.3	-37.0	0.67	0.60	-9.84
2,825.0	1.63	173.43	2,824.4	-39.1	-25.2	-37.7	0.53	-0.52	-3.32
2,850.0	1.85	171.91	2,849.4	-39.9	-25.1	-38.5	0.90	0.88	-6.08
2,875.0	1.85	171.43	2,874.4	-40.7	-25.0	-39.3	0.06	0.00	-1.92
2,900.0	1.88	169.67	2,899.4	-41.5	-24.9	-40.1	0.26	0.12	-7.04
2,925.0	1.86	171.40	2,924.3	-42.3	-24.7	-40.9	0.24	-0.08	6.92
2,950.0	1.72	168.24	2,949.3	-43.1	-24.6	-41.7	0.68	-0.56	-12.64
2,975.0	1.34	166.22	2,974.3	-43.7	-24.5	-42.4	1.53	-1.52	-8.08
3,000.0	1.07	163.13	2,999.3	-44.2	-24.3	-42.9	1.11	-1.08	-12.36
3,025.0	0.81	159.44	3,024.3	-44.6	-24.2	-43.3	1.07	-1.04	-14.76
3,050.0	0.82	160.81	3,049.3	-44.9	-24.1	-43.6	0.09	0.04	5.48
3,075.0	0.78	163.08	3,074.3	-45.3	-24.0	-43.9	0.20	-0.16	9.08
3,100.0	0.76	163.92	3,099.3	-45.6	-23.9	-44.3	0.09	-0.08	3.36
3,125.0	0.82	165.15	3,124.3	-45.9	-23.8	-44.6	0.25	0.24	4.92
3,150.0	0.89	163.76	3,149.3	-46.3	-23.7	-45.0	0.29	0.28	-5.56
3,175.0	0.96	162.47	3,174.3	-46.7	-23.6	-45.4	0.29	0.28	-5.16
3,200.0	0.95	160.13	3,199.3	-47.1	-23.4	-45.8	0.16	-0.04	-9.36
3,225.0	0.86	163.76	3,224.3	-47.4	-23.3	-46.1	0.43	-0.36	14.52
3,250.0	0.74	151.77	3,249.3	-47.8	-23.2	-46.5	0.82	-0.48	-47.96
3,275.0	0.86	158.14	3,274.3	-48.1	-23.0	-46.8	0.60	0.48	25.48
3,300.0	0.86	154.20	3,299.3	-48.4	-22.9	-47.1	0.24	0.00	-15.76
3,325.0	0.61	143.11	3,324.3	-48.7	-22.7	-47.4	1.15	-1.00	-44.36
3,350.0	0.59	135.38	3,349.3	-48.9	-22.5	-47.6	0.33	-0.08	-30.92
3,375.0	0.68	137.27	3,374.3	-49.1	-22.3	-47.8	0.37	0.36	7.56
3,400.0	0.54	126.50	3,399.3	-49.3	-22.2	-48.0	0.72	-0.56	-43.08



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
3,425.0	0.69	123.11	3,424.3	-49.4	-21.9	-48.2	0.62	0.60	-13.56
3,450.0	0.74	131.56	3,449.3	-49.6	-21.7	-48.4	0.47	0.20	33.80
3,475.0	0.73	133.07	3,474.3	-49.8	-21.4	-48.6	0.09	-0.04	6.04
3,500.0	0.63	130.51	3,499.3	-50.0	-21.2	-48.8	0.42	-0.40	-10.24
3,525.0	0.84	132.05	3,524.3	-50.2	-21.0	-49.1	0.84	0.84	6.16
3,550.0	0.96	123.85	3,549.3	-50.5	-20.7	-49.3	0.70	0.48	-32.80
3,575.0	1.03	124.40	3,574.3	-50.7	-20.3	-49.6	0.28	0.28	2.20
3,600.0	1.09	112.49	3,599.3	-50.9	-19.9	-49.8	0.91	0.24	-47.64
3,625.0	1.42	109.42	3,624.2	-51.1	-19.4	-50.0	1.35	1.32	-12.28
3,650.0	1.38	107.89	3,649.2	-51.3	-18.8	-50.3	0.22	-0.16	-6.12
3,675.0	1.15	104.49	3,674.2	-51.5	-18.3	-50.5	0.97	-0.92	-13.60
3,700.0	0.92	99.41	3,699.2	-51.6	-17.9	-50.6	0.99	-0.92	-20.32
3,725.0	0.70	91.51	3,724.2	-51.6	-17.5	-50.8	0.98	-0.88	-31.60
3,750.0	0.27	97.45	3,749.2	-51.6	-17.3	-50.6	1.73	-1.72	23.76
3,775.0	0.16	51.79	3,774.2	-51.6	-17.2	-50.6	0.78	-0.44	-182.64
3,800.0	0.27	268.79	3,799.2	-51.6	-17.2	-50.6	1.64	0.44	-572.00
3,825.0	0.24	284.79	3,824.2	-51.6	-17.3	-50.6	0.31	-0.12	64.00
3,850.0	0.17	259.99	3,849.2	-51.6	-17.4	-50.6	0.45	-0.28	-99.20
3,875.0	0.24	274.22	3,874.2	-51.6	-17.5	-50.6	0.34	0.28	56.92
3,900.0	0.23	301.10	3,899.2	-51.6	-17.6	-50.5	0.44	-0.04	107.52
3,925.0	0.22	313.61	3,924.2	-51.5	-17.7	-50.5	0.20	-0.04	50.04
3,950.0	0.20	291.99	3,949.2	-51.4	-17.8	-50.4	0.32	-0.08	-86.48
3,975.0	0.37	294.48	3,974.2	-51.4	-17.9	-50.4	0.68	0.68	9.96
4,000.0	0.24	255.52	3,999.2	-51.4	-18.0	-50.4	0.95	-0.52	-155.84
4,025.0	0.29	301.39	4,024.2	-51.4	-18.1	-50.3	0.85	0.20	183.48
4,050.0	0.37	342.55	4,049.2	-51.2	-18.2	-50.2	0.98	0.32	164.64
4,075.0	0.14	115.36	4,074.2	-51.2	-18.2	-50.1	1.91	-0.92	531.24
4,100.0	0.38	144.30	4,099.2	-51.3	-18.1	-50.2	1.06	0.96	115.76
4,125.0	0.41	115.45	4,124.2	-51.4	-18.0	-50.3	0.80	0.12	-115.40
4,150.0	0.73	100.02	4,149.2	-51.4	-17.7	-50.4	1.41	1.28	-61.72
4,175.0	1.22	102.42	4,174.2	-51.5	-17.3	-50.5	1.97	1.96	9.60
4,200.0	1.45	102.74	4,199.2	-51.6	-16.8	-50.7	0.92	0.92	1.28
4,225.0	1.68	104.01	4,224.2	-51.8	-16.1	-50.9	0.93	0.92	5.08
4,250.0	1.84	111.75	4,249.2	-52.0	-15.4	-51.2	1.14	0.64	30.96
4,275.0	1.82	102.69	4,274.2	-52.3	-14.6	-51.4	1.16	-0.08	-36.24
4,300.0	1.96	96.74	4,299.2	-52.4	-13.8	-51.6	0.96	0.56	-23.80
4,325.0	2.00	100.19	4,324.2	-52.5	-12.9	-51.8	0.50	0.16	13.80
4,350.0	1.91	101.52	4,349.1	-52.7	-12.1	-52.0	0.40	-0.36	5.32
4,375.0	1.57	108.89	4,374.1	-52.9	-11.4	-52.2	1.63	-1.36	29.48
4,400.0	1.21	118.76	4,399.1	-53.1	-10.8	-52.5	1.72	-1.44	39.48
4,425.0	1.03	125.19	4,424.1	-53.4	-10.4	-52.8	0.88	-0.72	25.72
4,450.0	0.95	151.04	4,449.1	-53.7	-10.1	-53.1	1.80	-0.32	103.40



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
4,475.0	1.03	182.78	4,474.1	-54.1	-10.0	-53.5	2.19	0.32	126.96
4,500.0	1.29	184.84	4,499.1	-54.6	-10.1	-54.0	1.05	1.04	8.24
4,525.0	1.55	189.52	4,524.1	-55.2	-10.1	-54.6	1.14	1.04	18.72
4,550.0	1.91	189.45	4,549.1	-56.0	-10.3	-55.3	1.44	1.44	-0.28
4,575.0	2.13	188.71	4,574.1	-56.8	-10.4	-56.2	0.89	0.88	-2.96
4,600.0	2.09	190.16	4,599.0	-57.7	-10.6	-57.1	0.27	-0.16	5.80
4,625.0	2.00	185.10	4,624.0	-58.6	-10.7	-58.0	0.81	-0.36	-20.24
4,650.0	1.68	179.84	4,649.0	-59.4	-10.7	-58.8	1.45	-1.28	-21.04
4,675.0	0.75	164.40	4,674.0	-60.0	-10.7	-59.3	3.91	-3.72	-61.76
4,700.0	0.15	144.29	4,699.0	-60.1	-10.6	-59.5	2.45	-2.40	-80.44
4,725.0	0.34	9.84	4,724.0	-60.1	-10.6	-59.5	1.83	0.76	-537.80
4,750.0	0.74	301.22	4,749.0	-59.9	-10.7	-59.3	2.77	1.60	-274.48
4,775.0	1.41	287.75	4,774.0	-59.8	-11.1	-59.1	2.85	2.68	-53.88
4,800.0	2.23	280.63	4,799.0	-59.6	-11.9	-58.9	3.40	3.28	-28.48
4,825.0	2.36	279.03	4,824.0	-59.4	-12.9	-58.6	0.58	0.52	-6.40
4,850.0	2.55	277.89	4,849.0	-59.2	-13.9	-58.4	0.78	0.76	-4.56
4,875.0	2.60	279.17	4,873.9	-59.1	-15.1	-58.2	0.30	0.20	5.12
4,900.0	2.51	278.67	4,898.9	-58.9	-16.2	-58.0	0.37	-0.36	-2.00
4,925.0	2.60	279.07	4,923.9	-58.7	-17.3	-57.7	0.37	0.36	1.60
4,950.0	2.58	279.29	4,948.9	-58.6	-18.4	-57.5	0.09	-0.08	0.88
4,975.0	2.60	277.66	4,973.8	-58.4	-19.5	-57.3	0.31	0.08	-6.52
5,000.0	2.60	278.66	4,998.8	-58.2	-20.6	-57.1	0.18	0.00	4.00
5,025.0	2.62	279.18	5,023.8	-58.1	-21.7	-56.8	0.12	0.08	2.08
5,050.0	2.63	279.49	5,048.7	-57.9	-22.9	-56.6	0.07	0.04	1.24
5,075.0	2.59	280.15	5,073.7	-57.7	-24.0	-56.3	0.20	-0.16	2.64
5,100.0	2.58	280.84	5,098.7	-57.5	-25.1	-56.1	0.13	-0.04	2.76
5,125.0	2.57	281.92	5,123.7	-57.2	-26.2	-55.8	0.20	-0.04	4.32
5,150.0	2.62	281.57	5,148.6	-57.0	-27.3	-55.5	0.21	0.20	-1.40
5,175.0	2.75	277.64	5,173.6	-56.8	-28.5	-55.2	0.90	0.52	-15.72
5,200.0	2.80	280.50	5,198.6	-56.6	-29.7	-55.0	0.59	0.20	11.44
5,225.0	2.95	278.48	5,223.6	-56.4	-30.9	-54.7	0.72	0.60	-8.08
5,250.0	3.02	275.59	5,248.5	-56.3	-32.2	-54.5	0.66	0.28	-11.56
5,275.0	3.09	276.69	5,273.5	-56.1	-33.5	-54.3	0.37	0.28	4.40
5,300.0	3.00	280.60	5,298.5	-55.9	-34.8	-54.0	0.91	-0.36	15.64
5,325.0	3.22	277.48	5,323.4	-55.7	-36.2	-53.7	1.11	0.88	-12.48
5,350.0	3.75	280.20	5,348.4	-55.5	-37.7	-53.4	2.22	2.12	10.88
5,375.0	4.25	277.56	5,373.3	-55.2	-39.4	-53.0	2.13	2.00	-10.56
5,400.0	4.75	275.92	5,398.2	-55.0	-41.3	-52.7	2.06	2.00	-6.56
5,425.0	4.91	274.21	5,423.1	-54.8	-43.4	-52.4	0.86	0.64	-6.84
5,450.0	5.00	272.62	5,448.0	-54.7	-45.6	-52.2	0.66	0.36	-6.36
5,475.0	4.88	274.51	5,473.0	-54.5	-47.7	-51.9	0.81	-0.48	7.56
5,500.0	4.94	276.65	5,497.9	-54.3	-49.9	-51.6	0.77	0.24	8.56



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
5,525.0	4.97	275.81	5,522.8	-54.1	-52.0	-51.3	0.31	0.12	-3.36
5,550.0	5.00	276.15	5,547.7	-53.9	-54.2	-50.9	0.17	0.12	1.36
5,575.0	4.92	275.44	5,572.6	-53.6	-56.3	-50.6	0.40	-0.32	-2.84
5,600.0	5.03	273.67	5,597.5	-53.5	-58.5	-50.3	0.76	0.44	-7.08
5,625.0	5.06	275.39	5,622.4	-53.3	-60.7	-50.0	0.62	0.12	6.88
5,650.0	5.13	274.27	5,647.3	-53.1	-62.9	-49.7	0.49	0.28	-4.48
5,675.0	5.29	271.13	5,672.2	-53.0	-65.2	-49.5	1.31	0.64	-12.56
5,700.0	4.95	271.75	5,697.1	-53.0	-67.4	-49.3	1.38	-1.36	2.48
5,725.0	5.00	268.22	5,722.0	-53.0	-69.5	-49.2	1.24	0.20	-14.12
5,750.0	5.16	261.49	5,746.9	-53.2	-71.7	-49.3	2.47	0.64	-26.92
5,775.0	5.30	254.27	5,771.8	-53.6	-74.0	-49.6	2.69	0.56	-28.88
5,800.0	5.34	254.88	5,796.7	-54.3	-76.2	-50.1	0.28	0.16	2.44
5,825.0	5.40	254.09	5,821.6	-54.9	-78.5	-50.8	0.38	0.24	-3.16
5,850.0	5.35	255.62	5,846.5	-55.5	-80.7	-51.1	0.61	-0.20	6.12
5,875.0	5.31	254.49	5,871.4	-56.1	-83.0	-51.6	0.45	-0.16	-4.52
5,900.0	5.40	255.38	5,896.3	-56.7	-85.2	-52.1	0.49	0.36	3.56
5,925.0	5.38	255.79	5,921.1	-57.3	-87.5	-52.6	0.17	-0.08	1.64
5,950.0	5.32	254.81	5,946.0	-57.9	-89.7	-53.0	0.44	-0.24	-3.92
5,975.0	5.46	255.39	5,970.9	-58.5	-92.0	-53.5	0.60	0.56	2.32
6,000.0	5.51	252.66	5,995.8	-59.1	-94.3	-54.1	1.06	0.20	-10.92
6,025.0	5.23	254.97	6,020.7	-59.8	-96.6	-54.6	1.41	-1.12	9.24
6,050.0	5.43	252.63	6,045.6	-60.4	-98.8	-55.1	1.18	0.80	-9.36
6,075.0	5.13	246.72	6,070.5	-61.2	-100.9	-55.8	2.48	-1.20	-23.64
6,100.0	5.14	241.27	6,095.4	-62.2	-103.0	-56.7	1.95	0.04	-21.80
6,125.0	5.20	236.77	6,120.3	-63.4	-104.9	-57.7	1.64	0.24	-18.00
6,150.0	5.17	233.88	6,145.2	-64.7	-106.7	-58.9	1.05	-0.12	-11.56
6,175.0	5.47	231.01	6,170.1	-66.1	-108.6	-60.2	1.60	1.20	-11.48
6,200.0	5.25	231.13	6,195.0	-67.5	-110.4	-61.6	0.88	-0.88	0.48
6,225.0	5.47	229.91	6,219.9	-69.0	-112.2	-63.0	0.99	0.88	-4.88
6,250.0	5.45	230.12	6,244.7	-70.5	-114.0	-64.4	0.11	-0.08	0.84
6,275.0	5.45	230.95	6,269.6	-72.1	-115.8	-65.8	0.32	0.00	3.32
6,300.0	5.56	230.17	6,294.5	-73.6	-117.7	-67.3	0.53	0.44	-3.12
6,325.0	5.46	230.64	6,319.4	-75.1	-119.6	-68.7	0.44	-0.40	1.88
6,350.0	5.46	229.53	6,344.3	-76.6	-121.4	-70.1	0.42	0.00	-4.44
6,375.0	5.37	231.44	6,369.2	-78.1	-123.2	-71.5	0.81	-0.36	7.64
6,400.0	5.31	230.31	6,394.1	-79.6	-125.0	-72.9	0.48	-0.24	-4.52
6,425.0	5.48	229.94	6,419.0	-81.1	-126.8	-74.3	0.69	0.68	-1.48
6,450.0	5.20	230.18	6,443.8	-82.6	-128.6	-75.7	1.12	-1.12	0.96
6,475.0	5.30	229.14	6,468.7	-84.1	-130.3	-77.1	0.55	0.40	-4.16
6,500.0	5.33	230.06	6,493.6	-85.6	-132.1	-78.5	0.36	0.12	3.68
6,525.0	5.38	230.64	6,518.5	-87.1	-133.9	-79.9	0.29	0.20	2.32
6,550.0	5.35	230.62	6,543.4	-88.6	-135.7	-81.3	0.12	-0.12	-0.08



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
6,575.0	5.37	230.58	6,568.3	-90.0	-137.5	-82.6	0.08	0.08	-0.16
6,600.0	5.35	230.78	6,593.2	-91.5	-139.3	-84.0	0.11	-0.08	0.80
6,625.0	5.32	229.95	6,618.1	-93.0	-141.1	-85.4	0.33	-0.12	-3.32
6,650.0	5.20	229.99	6,643.0	-94.5	-142.9	-86.8	0.48	-0.48	0.16
6,675.0	5.33	231.04	6,667.9	-95.9	-144.6	-88.2	0.65	0.52	4.20
6,700.0	5.31	228.75	6,692.8	-97.4	-146.4	-89.5	0.85	-0.08	-9.16
6,725.0	5.27	231.61	6,717.7	-98.9	-148.2	-90.9	1.07	-0.16	11.44
6,750.0	5.36	230.31	6,742.6	-100.4	-150.0	-92.3	0.60	0.36	-5.20
6,775.0	5.37	231.08	6,767.4	-101.8	-151.8	-93.7	0.29	0.04	3.08
6,800.0	5.22	229.68	6,792.3	-103.3	-153.6	-95.0	0.79	-0.60	-5.60
6,825.0	5.26	231.25	6,817.2	-104.8	-155.3	-96.4	0.60	0.16	6.28
6,850.0	5.33	229.94	6,842.1	-106.2	-157.1	-97.8	0.56	0.28	-5.24
6,875.0	5.39	230.12	6,867.0	-107.7	-158.9	-99.2	0.25	0.24	0.72
6,900.0	5.43	230.98	6,891.9	-109.2	-160.7	-100.6	0.36	0.16	3.44
6,925.0	5.44	231.79	6,916.8	-110.7	-162.6	-102.0	0.31	0.04	3.24
6,950.0	5.22	236.18	6,941.7	-112.1	-164.4	-103.2	1.85	-0.88	17.56
6,975.0	5.11	239.61	6,966.6	-113.3	-166.3	-104.3	1.31	-0.44	13.72
7,000.0	5.12	241.11	6,991.5	-114.4	-168.3	-105.3	0.54	0.04	6.00
7,025.0	5.07	240.81	7,016.4	-115.4	-170.2	-106.3	0.23	-0.20	-1.20
7,050.0	5.02	242.11	7,041.3	-116.5	-172.1	-107.2	0.50	-0.20	5.20
7,075.0	4.88	243.87	7,066.2	-117.5	-174.1	-108.1	0.83	-0.56	7.04
7,100.0	4.83	242.70	7,091.1	-118.4	-176.0	-109.0	0.44	-0.20	-4.68
7,125.0	4.69	242.70	7,116.0	-119.4	-177.8	-109.8	0.56	-0.56	0.00
7,150.0	4.68	241.17	7,140.9	-120.3	-179.6	-110.7	0.50	-0.04	-6.12
7,175.0	4.83	241.42	7,165.8	-121.3	-181.4	-111.6	0.61	0.60	1.00
7,200.0	4.81	242.72	7,190.8	-122.3	-183.3	-112.5	0.44	-0.08	5.20
7,225.0	4.78	242.98	7,215.7	-123.3	-185.1	-113.3	0.15	-0.12	1.04
7,250.0	4.76	242.84	7,240.6	-124.2	-187.0	-114.2	0.09	-0.08	-0.56
7,275.0	4.81	242.88	7,265.5	-125.2	-188.8	-115.0	0.20	0.20	0.16
7,300.0	4.64	244.37	7,290.4	-126.1	-190.7	-115.8	0.84	-0.68	5.96
7,325.0	4.45	247.11	7,315.3	-126.9	-192.5	-116.5	1.15	-0.76	10.96
7,350.0	4.18	255.85	7,340.3	-127.5	-194.3	-117.0	2.84	-1.08	34.96
7,375.0	4.06	257.69	7,365.2	-127.9	-196.0	-117.4	0.71	-0.48	7.36
7,400.0	4.27	257.67	7,390.1	-128.3	-197.8	-117.7	0.84	0.84	-0.08
7,425.0	4.07	256.90	7,415.1	-128.7	-199.6	-118.0	0.83	-0.80	-3.08
7,450.0	4.16	256.72	7,440.0	-129.1	-201.3	-118.3	0.36	0.36	-0.72
7,475.0	4.17	258.29	7,464.9	-129.5	-203.1	-118.6	0.46	0.04	6.28
7,500.0	4.19	257.46	7,489.9	-129.9	-204.9	-118.9	0.25	0.08	-3.32
7,525.0	4.22	256.95	7,514.8	-130.3	-206.7	-119.2	0.19	0.12	-2.04
7,550.0	4.09	255.80	7,539.7	-130.7	-208.4	-119.5	0.62	-0.52	-4.60
7,575.0	4.28	254.73	7,564.7	-131.2	-210.2	-119.9	0.82	0.76	-4.28
7,600.0	4.05	254.08	7,589.6	-131.7	-211.9	-120.3	0.94	-0.92	-2.60



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
7,625.0	4.13	253.17	7,614.5	-132.2	-213.6	-120.7	0.41	0.32	-3.64
7,650.0	4.17	252.30	7,639.5	-132.7	-215.4	-121.1	0.30	0.16	-3.48
7,675.0	4.18	252.52	7,664.4	-133.3	-217.1	-121.6	0.08	0.04	0.88
7,700.0	4.12	253.20	7,689.3	-133.8	-218.8	-122.0	0.31	-0.24	2.72
7,725.0	4.02	252.43	7,714.3	-134.3	-220.5	-122.5	0.46	-0.40	-3.08
7,750.0	3.90	252.07	7,739.2	-134.8	-222.2	-122.9	0.49	-0.48	-1.44
7,775.0	3.74	250.47	7,764.2	-135.4	-223.7	-123.4	0.77	-0.64	-6.40
7,800.0	3.18	246.25	7,789.1	-135.9	-225.1	-123.8	2.46	-2.24	-16.88
7,825.0	3.09	246.55	7,814.1	-136.5	-226.4	-124.3	0.37	-0.36	1.20
7,850.0	2.98	246.74	7,839.0	-137.0	-227.6	-124.8	0.44	-0.44	0.76
7,875.0	2.82	246.90	7,864.0	-137.5	-228.8	-125.2	0.64	-0.64	0.64
7,900.0	2.83	248.85	7,889.0	-138.0	-229.9	-125.6	0.39	0.04	7.80
7,925.0	2.50	244.17	7,914.0	-138.4	-231.0	-126.0	1.58	-1.32	-18.72
7,950.0	2.51	247.38	7,938.9	-138.9	-232.0	-126.4	0.56	0.04	12.84
7,975.0	2.54	247.93	7,963.9	-139.3	-233.0	-126.8	0.15	0.12	2.20
8,000.0	2.42	248.57	7,988.9	-139.7	-234.0	-127.1	0.49	-0.48	2.56
8,025.0	2.30	245.96	8,013.9	-140.1	-235.0	-127.5	0.64	-0.48	-10.44
8,050.0	2.15	245.97	8,038.8	-140.5	-235.8	-127.8	0.60	-0.60	0.04
8,075.0	2.21	243.78	8,063.8	-140.9	-236.7	-128.2	0.41	0.24	-8.76
8,100.0	2.20	245.34	8,088.8	-141.3	-237.6	-128.5	0.24	-0.04	6.24
8,125.0	2.21	244.43	8,113.8	-141.7	-238.4	-128.9	0.15	0.04	-3.64
8,150.0	2.17	243.97	8,138.8	-142.1	-239.3	-129.3	0.17	-0.16	-1.84
8,175.0	2.15	243.97	8,163.8	-142.5	-240.1	-129.6	0.08	-0.08	0.00
8,200.0	2.19	242.71	8,188.7	-143.0	-241.0	-130.0	0.25	0.16	-5.04
8,225.0	2.18	241.04	8,213.7	-143.4	-241.8	-130.4	0.26	-0.04	-6.68
8,250.0	2.36	238.77	8,238.7	-143.9	-242.7	-130.9	0.80	0.72	-9.08
8,275.0	2.22	238.56	8,263.7	-144.4	-243.5	-131.3	0.56	-0.56	-0.84
8,300.0	2.25	237.47	8,288.7	-144.9	-244.4	-131.8	0.21	0.12	-4.36
8,325.0	2.28	238.34	8,313.6	-145.5	-245.2	-132.3	0.18	0.12	3.48
8,350.0	2.55	238.89	8,338.6	-146.0	-246.1	-132.8	1.08	1.08	2.20
8,375.0	2.82	239.44	8,363.6	-146.6	-247.1	-133.3	1.08	1.08	2.20
8,400.0	3.11	241.29	8,388.6	-147.3	-248.2	-133.9	1.22	1.16	7.40
8,425.0	3.16	242.88	8,413.5	-147.9	-249.4	-134.5	0.40	0.20	6.36
8,450.0	3.33	240.95	8,438.5	-148.6	-250.7	-135.1	0.81	0.68	-7.72
8,475.0	3.29	239.72	8,463.4	-149.3	-251.9	-135.7	0.33	-0.16	-4.92
8,500.0	3.34	241.92	8,488.4	-150.0	-253.2	-136.4	0.55	0.20	8.80
8,525.0	3.41	242.33	8,513.4	-150.7	-254.5	-137.0	0.30	0.28	1.64
8,550.0	3.52	240.23	8,538.3	-151.4	-255.8	-137.7	0.67	0.44	-8.40
8,575.0	3.41	240.23	8,563.3	-152.1	-257.1	-138.3	0.44	-0.44	0.00
8,600.0	3.42	242.44	8,588.2	-152.9	-258.5	-139.0	0.53	0.04	8.84
8,625.0	3.46	244.81	8,613.2	-153.5	-259.8	-139.6	0.59	0.16	9.48
8,650.0	3.71	250.86	8,638.1	-154.1	-261.2	-140.1	1.81	1.00	24.20



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,675.0	3.82	253.01	8,663.1	-154.6	-262.8	-140.5	0.72	0.44	8.60
8,700.0	4.00	255.32	8,688.0	-155.1	-264.4	-140.9	0.96	0.72	9.24
8,725.0	3.97	256.03	8,713.0	-155.5	-266.1	-141.2	0.23	-0.12	2.84
8,750.0	3.97	256.19	8,737.9	-155.9	-267.8	-141.6	0.04	0.00	0.64
8,775.0	3.92	255.89	8,762.8	-156.3	-269.5	-141.9	0.22	-0.20	-1.20
8,800.0	3.87	255.90	8,787.8	-156.8	-271.1	-142.2	0.20	-0.20	0.04
8,825.0	3.79	254.57	8,812.7	-157.2	-272.7	-142.5	0.48	-0.32	-5.32
8,850.0	3.79	253.64	8,837.7	-157.6	-274.3	-142.9	0.25	0.00	-3.72
8,875.0	3.68	253.70	8,862.6	-158.1	-275.9	-143.3	0.44	-0.44	0.24
8,900.0	3.67	252.88	8,887.6	-158.6	-277.4	-143.7	0.21	-0.04	-3.28
8,925.0	3.71	252.23	8,912.5	-159.0	-279.0	-144.1	0.23	0.16	-2.60
8,950.0	3.63	254.65	8,937.5	-159.5	-280.5	-144.4	0.70	-0.32	9.68
8,975.0	3.56	256.42	8,962.4	-159.9	-282.0	-144.7	0.52	-0.28	7.08
9,000.0	3.41	257.03	8,987.4	-160.2	-283.5	-145.0	0.62	-0.60	2.44
9,025.0	3.41	259.75	9,012.3	-160.5	-284.9	-145.2	0.65	0.00	10.88
9,050.0	3.20	259.96	9,037.3	-160.8	-286.4	-145.4	0.84	-0.84	0.84
9,075.0	3.08	260.08	9,062.2	-161.0	-287.7	-145.6	0.48	-0.48	0.48
9,077.0	3.07	260.09	9,064.2	-161.0	-287.8	-145.6	0.50	-0.50	0.50
9,155.0	2.71	271.32	9,142.1	-161.4	-291.7	-145.7	0.88	-0.46	14.40
9,192.0	2.81	273.90	9,179.1	-161.3	-293.5	-145.5	0.43	0.27	6.97
9,239.0	5.18	324.13	9,226.0	-159.5	-295.9	-143.6	8.54	5.04	106.87
9,286.0	11.68	343.73	9,272.5	-153.2	-298.5	-137.2	14.93	13.83	41.70
9,333.0	17.39	347.60	9,317.9	-141.8	-301.3	-125.6	12.32	12.15	8.23
9,379.0	21.78	351.86	9,361.3	-126.6	-304.0	-110.3	10.03	9.54	9.26
9,426.0	28.30	354.38	9,403.8	-106.8	-306.3	-90.5	14.05	13.87	5.36
9,473.0	34.71	355.12	9,443.9	-82.4	-308.6	-66.0	13.66	13.64	1.57
9,520.0	39.62	353.76	9,481.3	-54.2	-311.3	-37.6	10.59	10.45	-2.89
9,566.0	44.28	353.29	9,515.5	-23.6	-314.8	-6.9	10.15	10.13	-1.02
9,613.0	48.83	355.19	9,547.8	10.3	-318.2	27.2	10.12	9.68	4.04
9,659.0	52.02	355.24	9,577.1	45.7	-321.2	62.6	8.94	6.93	0.11
9,706.0	56.77	358.60	9,604.5	83.8	-323.2	100.8	11.66	10.11	7.15
9,754.0	63.10	356.76	9,628.5	125.3	-324.9	142.3	13.60	13.19	-3.83
9,801.0	71.17	356.14	9,646.8	168.5	-327.6	185.6	17.21	17.17	-1.32
9,847.0	76.19	356.41	9,659.7	212.5	-330.4	229.7	10.93	10.91	0.59
9,941.0	86.53	358.73	9,673.8	305.2	-334.3	322.5	11.27	11.00	2.47
9,971.0	87.10	358.72	9,675.5	335.2	-335.0	352.4	1.90	1.90	-0.03
10,065.0	86.87	357.58	9,680.4	429.0	-338.0	446.3	1.24	-0.24	-1.21
10,158.0	89.17	357.63	9,683.6	521.9	-341.9	539.2	2.47	2.47	0.05
10,252.0	89.82	356.70	9,684.5	615.7	-346.6	633.2	1.21	0.69	-0.99
10,347.0	90.10	355.55	9,684.5	710.5	-353.0	728.2	1.25	0.29	-1.21
10,441.0	86.70	356.08	9,687.2	804.2	-359.9	822.1	3.66	-3.62	0.56
10,534.0	88.53	0.64	9,691.0	897.1	-362.5	915.0	5.28	1.97	4.90



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
10,627.0	89.29	0.67	9,692.8	990.0	-361.4	1,007.8	0.82	0.82	0.03
10,721.0	89.43	0.68	9,693.8	1,084.0	-360.3	1,101.6	0.15	0.15	0.01
10,814.0	89.59	0.77	9,694.6	1,177.0	-359.2	1,194.4	0.20	0.17	0.10
10,907.0	89.48	0.08	9,695.4	1,270.0	-358.5	1,287.2	0.75	-0.12	-0.74
11,001.0	89.34	0.13	9,696.4	1,364.0	-358.3	1,381.1	0.16	-0.15	0.05
11,095.0	88.25	359.71	9,698.3	1,458.0	-358.4	1,474.9	1.24	-1.16	-0.45
11,188.0	89.57	359.51	9,700.1	1,551.0	-359.1	1,567.8	1.44	1.42	-0.22
11,281.0	90.91	358.94	9,699.7	1,644.0	-360.3	1,660.7	1.57	1.44	-0.61
11,375.0	89.54	358.26	9,699.4	1,737.9	-362.6	1,754.7	1.63	-1.46	-0.72
11,469.0	89.45	358.02	9,700.2	1,831.9	-365.7	1,848.6	0.27	-0.10	-0.26
11,562.0	93.66	358.18	9,697.7	1,924.8	-368.7	1,941.6	4.53	4.53	0.17
11,656.0	95.21	358.10	9,690.4	2,018.4	-371.8	2,035.3	1.65	1.65	-0.09
11,749.0	95.01	1.51	9,682.1	2,111.0	-372.1	2,127.8	3.66	-0.22	3.67
11,843.0	91.19	3.54	9,677.0	2,204.8	-368.0	2,221.2	4.60	-4.06	2.16
11,936.0	88.19	3.75	9,677.5	2,297.6	-362.1	2,313.5	3.23	-3.23	0.23
12,030.0	86.82	1.11	9,681.6	2,391.4	-358.1	2,407.0	3.16	-1.46	-2.81
12,124.0	86.62	0.34	9,687.0	2,485.2	-356.9	2,500.6	0.85	-0.21	-0.82
12,217.0	88.86	359.46	9,690.7	2,578.2	-357.1	2,593.4	2.59	2.41	-0.95
12,311.0	89.57	359.40	9,692.0	2,672.2	-358.0	2,687.3	0.76	0.76	-0.06
12,405.0	90.13	359.40	9,692.2	2,766.1	-359.0	2,781.3	0.60	0.60	0.00
12,498.0	90.24	359.93	9,691.9	2,859.1	-359.5	2,874.2	0.58	0.12	0.57
12,591.0	91.00	0.41	9,690.9	2,952.1	-359.2	2,967.0	0.97	0.82	0.52
12,685.0	88.22	1.01	9,691.5	3,046.1	-358.1	3,060.8	3.03	-2.96	0.64
12,779.0	88.39	0.86	9,694.3	3,140.1	-356.5	3,154.5	0.24	0.18	-0.16
12,873.0	89.99	359.19	9,695.6	3,234.1	-356.5	3,248.4	2.46	1.70	-1.78
12,967.0	90.55	358.66	9,695.2	3,328.0	-358.1	3,342.3	0.69	0.60	-0.35
13,060.0	88.56	358.61	9,695.9	3,421.0	-360.2	3,435.3	2.16	-2.14	-0.27
13,153.0	88.39	358.42	9,698.4	3,513.9	-362.6	3,528.2	0.27	-0.18	-0.20
13,247.0	89.06	358.67	9,700.5	3,607.9	-364.9	3,622.1	0.76	0.71	0.27
13,341.0	89.59	359.04	9,701.6	3,701.9	-366.8	3,716.1	0.69	0.56	0.39
13,435.0	89.93	359.08	9,702.0	3,795.8	-368.4	3,810.0	0.36	0.36	0.04
13,529.0	90.55	359.26	9,701.6	3,889.8	-369.7	3,903.9	0.69	0.66	0.19
13,622.0	90.60	359.33	9,700.7	3,982.8	-370.9	3,996.9	0.09	0.05	0.08
13,715.0	91.11	359.31	9,699.3	4,075.8	-372.0	4,089.8	0.55	0.55	-0.02
13,808.0	90.88	358.96	9,697.7	4,168.8	-373.4	4,182.7	0.45	-0.25	-0.38
13,902.0	91.64	359.27	9,695.6	4,262.7	-374.8	4,276.6	0.87	0.81	0.33
13,995.0	92.42	359.99	9,692.3	4,355.7	-375.4	4,369.4	1.14	0.84	0.77
14,089.0	91.00	0.30	9,689.5	4,449.6	-375.2	4,463.3	1.55	-1.51	0.33
14,182.0	91.67	0.35	9,687.3	4,542.6	-374.7	4,556.1	0.72	0.72	0.05
14,276.0	90.66	1.53	9,685.4	4,636.6	-373.1	4,649.8	1.65	-1.07	1.26
14,369.0	91.72	2.42	9,683.5	4,729.5	-369.9	4,742.4	1.49	1.14	0.96
14,463.0	89.59	1.56	9,682.4	4,823.4	-366.7	4,836.1	2.44	-2.27	-0.91



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: EIDER FED #303H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well EIDER FED #303H
TVD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
MD Reference: RKB=3525.2+27 @ 3552.2usft (SCANDRILL FREEDOM)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
14,556.0	91.11	2.28	9,681.8	4,916.4	-363.5	4,928.7	1.81	1.63	0.77
14,651.0	89.09	0.47	9,681.7	5,011.3	-361.3	5,023.4	2.85	-2.13	-1.91
14,745.0	88.81	0.13	9,683.4	5,105.3	-360.8	5,117.3	0.47	-0.30	-0.36
14,839.0	89.09	0.46	9,685.1	5,199.3	-360.3	5,211.1	0.46	0.30	0.35
14,933.0	89.71	0.75	9,686.1	5,293.3	-359.3	5,304.9	0.73	0.66	0.31
15,027.0	90.66	0.69	9,685.8	5,387.3	-358.1	5,398.7	1.01	1.01	-0.06
15,120.0	89.76	359.30	9,685.5	5,480.3	-358.1	5,491.6	1.78	-0.97	-1.49
15,214.0	90.01	359.12	9,685.6	5,574.3	-359.4	5,585.5	0.33	0.27	-0.19
15,307.0	89.34	359.50	9,686.2	5,667.3	-360.5	5,678.4	0.83	-0.72	0.41
15,401.0	89.01	359.78	9,687.5	5,761.2	-361.1	5,772.3	0.46	-0.35	0.30
15,495.0	89.17	0.21	9,689.0	5,855.2	-361.1	5,866.1	0.49	0.17	0.46
15,588.0	89.34	358.86	9,690.2	5,948.2	-361.9	5,959.0	1.46	0.18	-1.45
15,681.0	89.82	358.40	9,690.9	6,041.2	-364.1	6,052.0	0.71	0.52	-0.49
15,775.0	89.82	358.57	9,691.2	6,135.2	-366.6	6,146.0	0.18	0.00	0.18
15,869.0	90.01	358.77	9,691.3	6,229.1	-368.8	6,239.9	0.29	0.20	0.21
15,963.0	90.04	359.12	9,691.3	6,323.1	-370.5	6,333.9	0.37	0.03	0.37
16,057.0	90.63	359.14	9,690.8	6,417.1	-371.9	6,427.8	0.63	0.63	0.02
16,151.0	90.83	359.43	9,689.6	6,511.1	-373.1	6,521.7	0.37	0.21	0.31
16,244.0	88.56	357.19	9,690.1	6,604.0	-375.9	6,614.7	3.43	-2.44	-2.41
16,338.0	88.47	357.21	9,692.5	6,697.9	-380.4	6,708.6	0.10	-0.10	0.02
16,432.0	90.66	357.64	9,693.2	6,791.8	-384.7	6,802.6	2.37	2.33	0.46
16,525.0	90.52	357.33	9,692.2	6,884.7	-388.7	6,895.6	0.37	-0.15	-0.33
16,618.0	90.69	357.65	9,691.3	6,977.6	-392.8	6,988.6	0.39	0.18	0.34
16,712.0	91.05	357.31	9,689.8	7,071.5	-397.0	7,082.6	0.53	0.38	-0.36
16,805.0	90.94	356.90	9,688.2	7,164.4	-401.6	7,175.6	0.46	-0.12	-0.44
16,899.0	90.91	357.04	9,686.7	7,258.2	-406.6	7,269.6	0.15	-0.03	0.15
16,930.0	91.02	357.10	9,686.2	7,289.2	-408.2	7,300.6	0.40	0.35	0.19
16,992.0	91.67	356.94	9,684.7	7,351.1	-411.4	7,362.5	1.08	1.05	-0.26
17,083.0	91.86	357.32	9,681.9	7,441.9	-416.0	7,453.5	0.47	0.21	0.42
17,143.0	91.86	357.32	9,680.0	7,501.8	-418.8	7,513.5	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____