

HOBBS OCD
OCT 23 2019
RECEIVED

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

FASCINATOR FED COM #604H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

15 January, 2019

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: FASCINATOR FED COM #604H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Project LEA COUNTY, NM

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

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 FASCINATOR FED COM #604H

Well Position: +N/-S 0.0 usft Northing: 435,894.20 usft Latitude: 32° 11' 42.161 N
+E/-W 0.0 usft Easting: 784,535.60 usft Longitude: 103° 24' 48.692 W
Position Uncertainty: 3.0 usft Wellhead Elevation: usft Ground Level: 3,372.0 usft

Wellbore OWB

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	6/25/2018	6.79	60.03	47,818.42180212

Design ACTUAL WELLPATH

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0
Vertical Section: Depth From (TVD) (usft) +N/-S (usft) +E/-W (usft) Direction (°)
0.0 0.0 0.0 178.89

Survey Program Date 1/15/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	11,743.0	GYRO (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
11,870.0	22,363.0	MWD-CURVE/LATERAL (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.23	46.73	100.0	0.1	0.1	-0.1	0.23	0.23	0.00
125.0	0.28	43.72	125.0	0.2	0.2	-0.2	0.21	0.20	-12.04
150.0	0.44	55.21	150.0	0.3	0.3	-0.3	0.70	0.64	45.96
175.0	0.53	58.39	175.0	0.4	0.5	-0.4	0.38	0.36	12.72
200.0	0.66	50.20	200.0	0.6	0.7	-0.6	0.62	0.52	-32.76
225.0	0.89	49.59	225.0	0.8	1.0	-0.8	0.92	0.92	-2.44
250.0	1.29	58.53	250.0	1.1	1.4	-1.0	1.73	1.60	35.76
275.0	1.36	55.09	275.0	1.4	1.9	-1.4	0.42	0.28	-13.76
300.0	1.68	52.06	300.0	1.8	2.4	-1.7	1.32	1.28	-12.12

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: FASCINATOR FED COM #604H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
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)
325.0	1.68	58.86	325.0	2.2	3.0	-2.1	0.80	0.00	27.20
350.0	1.62	60.66	350.0	2.6	3.6	-2.5	0.32	-0.24	7.20
375.0	1.63	58.53	374.9	2.9	4.2	-2.8	0.24	0.04	-8.52
400.0	1.67	59.96	399.9	3.3	4.8	-3.2	0.23	0.16	5.72
425.0	1.67	64.55	424.9	3.6	5.5	-3.5	0.53	0.00	18.36
450.0	1.56	64.90	449.9	3.9	6.1	-3.8	0.44	-0.44	1.40
475.0	1.25	59.07	474.9	4.2	6.7	-4.1	1.36	-1.24	-23.32
500.0	1.20	73.73	499.9	4.4	7.2	-4.3	1.27	-0.20	58.64
525.0	1.30	65.42	524.9	4.6	7.7	-4.5	0.83	0.40	-33.24
550.0	1.06	68.03	549.9	4.8	8.1	-4.7	0.98	-0.96	10.44
575.0	0.87	78.75	574.9	4.9	8.5	-4.8	1.05	-0.76	42.88
600.0	0.84	78.12	599.9	5.0	8.9	-4.8	0.13	-0.12	-2.52
625.0	0.74	76.09	624.9	5.1	9.2	-4.9	0.42	-0.40	-8.12
650.0	0.92	79.59	649.9	5.2	9.6	-5.0	0.75	0.72	14.00
675.0	1.00	76.14	674.9	5.3	10.0	-5.1	0.39	0.32	-13.80
700.0	0.78	78.15	699.9	5.3	10.4	-5.1	0.89	-0.88	8.04
725.0	0.81	79.18	724.9	5.4	10.7	-5.2	0.13	0.12	4.12
750.0	0.82	81.90	749.9	5.5	11.1	-5.3	0.16	0.04	10.88
775.0	0.90	81.40	774.9	5.5	11.4	-5.3	0.32	0.32	-2.00
800.0	0.92	82.10	799.9	5.6	11.8	-5.4	0.09	0.08	2.80
825.0	0.80	74.35	824.9	5.7	12.2	-5.4	0.67	-0.48	-31.00
850.0	0.84	79.13	849.9	5.7	12.6	-5.5	0.32	0.16	19.12
875.0	0.88	73.68	874.9	5.8	12.9	-5.6	0.36	0.16	-21.80
900.0	0.56	82.25	899.8	5.9	13.2	-5.6	1.35	-1.28	34.28
925.0	0.74	80.22	924.8	5.9	13.5	-5.7	0.73	0.72	-8.12
950.0	0.69	76.57	949.8	6.0	13.8	-5.7	0.27	-0.20	-14.60
975.0	0.72	79.19	974.8	6.1	14.1	-5.8	0.18	0.12	10.48
1,000.0	0.70	79.46	999.8	6.1	14.4	-5.9	0.08	-0.08	1.08
1,025.0	0.70	81.97	1,024.8	6.2	14.7	-5.9	0.12	0.00	10.04
1,050.0	1.10	81.82	1,049.8	6.2	15.1	-5.9	1.60	1.60	-0.60
1,075.0	1.13	71.70	1,074.8	6.3	15.6	-6.0	0.80	0.12	-40.48
1,100.0	1.14	71.36	1,099.8	6.5	16.0	-6.2	0.05	0.04	-1.36
1,125.0	1.15	71.80	1,124.8	6.7	16.5	-6.3	0.05	0.04	1.76
1,150.0	1.27	64.80	1,149.8	6.9	17.0	-6.5	0.76	0.48	-28.00
1,175.0	1.14	67.71	1,174.8	7.1	17.5	-6.7	0.57	-0.52	11.64
1,200.0	1.25	76.25	1,199.8	7.2	18.0	-6.9	0.84	0.44	34.16
1,225.0	1.29	70.47	1,224.8	7.4	18.5	-7.0	0.54	0.16	-23.12
1,250.0	1.23	71.88	1,249.8	7.6	19.0	-7.2	0.27	-0.24	5.64
1,275.0	1.24	69.29	1,274.8	7.7	19.5	-7.4	0.23	0.04	-10.36
1,300.0	1.37	71.45	1,299.8	7.9	20.1	-7.5	0.56	0.52	8.64
1,325.0	1.33	72.72	1,324.8	8.1	20.6	-7.7	0.20	-0.16	5.08
1,350.0	1.33	69.48	1,349.8	8.3	21.2	-7.9	0.30	0.00	-12.96
1,375.0	1.42	68.79	1,374.8	8.5	21.7	-8.1	0.37	0.36	-2.76

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well FASCINATOR FED COM #604H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Site:	BULLDOG	MD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Well:	FASCINATOR FED COM #604H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)	
1,400.0	1.59	65.01	1,399.8	8.8	22.4	-8.3	0.79	0.68	-15.12	
1,425.0	1.38	71.47	1,424.7	9.0	23.0	-8.6	1.07	-0.84	25.84	
1,450.0	1.30	72.35	1,449.7	9.2	23.5	-8.7	0.33	-0.32	3.52	
1,475.0	1.54	72.91	1,474.7	9.4	24.1	-8.9	0.96	0.96	2.24	
1,500.0	1.50	68.80	1,499.7	9.6	24.7	-9.1	0.46	-0.16	-16.44	
1,525.0	1.55	67.74	1,524.7	9.8	25.3	-9.4	0.23	0.20	-4.24	
1,550.0	1.44	67.63	1,549.7	10.1	25.9	-9.6	0.44	-0.44	-0.44	
1,575.0	1.42	70.11	1,574.7	10.3	26.5	-9.8	0.26	-0.08	9.92	
1,600.0	1.53	74.08	1,599.7	10.5	27.1	-10.0	0.60	0.44	15.88	
1,625.0	1.36	69.58	1,624.7	10.7	27.7	-10.2	0.82	-0.68	-18.00	
1,650.0	1.67	67.97	1,649.7	11.0	28.4	-10.4	1.25	1.24	-6.44	
1,675.0	1.54	71.48	1,674.7	11.2	29.0	-10.6	0.65	-0.52	14.04	
1,700.0	1.55	64.45	1,699.7	11.4	29.6	-10.9	0.76	0.04	-28.12	
1,725.0	1.58	67.71	1,724.6	11.7	30.3	-11.1	0.38	0.12	13.04	
1,750.0	1.61	56.45	1,749.6	12.1	30.9	-11.5	1.26	0.12	-45.04	
1,775.0	1.59	58.86	1,774.6	12.4	31.5	-11.8	0.28	-0.08	9.64	
1,800.0	1.56	51.83	1,799.6	12.8	32.0	-12.2	0.78	-0.12	-28.12	
1,825.0	1.62	49.57	1,824.6	13.3	32.6	-12.6	0.35	0.24	-9.04	
1,850.0	1.65	39.99	1,849.6	13.8	33.1	-13.1	1.10	0.12	-38.32	
1,875.0	1.66	35.75	1,874.6	14.3	33.5	-13.7	0.49	0.04	-16.96	
1,900.0	1.82	31.02	1,899.6	15.0	33.9	-14.3	0.86	0.64	-18.92	
1,925.0	1.61	31.18	1,924.6	15.6	34.3	-14.9	0.84	-0.84	0.64	
1,950.0	1.64	28.88	1,949.5	16.2	34.7	-15.5	0.29	0.12	-9.20	
1,975.0	1.73	21.62	1,974.5	16.9	35.0	-16.2	0.93	0.36	-29.04	
2,000.0	1.66	23.02	1,999.5	17.6	35.3	-16.9	0.33	-0.28	5.60	
2,025.0	1.44	16.23	2,024.5	18.2	35.5	-17.5	1.14	-0.88	-27.16	
2,050.0	1.46	16.28	2,049.5	18.8	35.7	-18.1	0.08	0.08	0.20	
2,075.0	1.27	6.74	2,074.5	19.4	35.8	-18.7	1.18	-0.76	-38.16	
2,100.0	0.98	358.89	2,099.5	19.9	35.8	-19.2	1.31	-1.16	-31.40	
2,125.0	0.86	359.51	2,124.5	20.3	35.8	-19.6	0.48	-0.48	2.48	
2,150.0	0.61	351.50	2,149.5	20.6	35.8	-19.9	1.08	-1.00	-32.04	
2,175.0	0.45	324.38	2,174.5	20.8	35.7	-20.1	1.17	-0.64	-108.48	
2,200.0	0.36	321.12	2,199.5	20.9	35.6	-20.3	0.37	-0.36	-13.04	
2,225.0	0.32	294.44	2,224.5	21.0	35.5	-20.3	0.65	-0.16	-106.72	
2,250.0	0.13	328.78	2,249.5	21.1	35.4	-20.4	0.90	-0.76	137.36	
2,275.0	0.13	267.55	2,274.5	21.1	35.4	-20.4	0.53	0.00	-244.92	
2,300.0	0.25	254.05	2,299.5	21.1	35.3	-20.4	0.51	0.48	-54.00	
2,325.0	0.12	251.83	2,324.5	21.1	35.2	-20.4	0.52	-0.52	-8.88	
2,350.0	0.38	222.54	2,349.5	21.0	35.1	-20.3	1.13	1.04	-117.16	
2,375.0	0.26	200.06	2,374.5	20.9	35.0	-20.2	0.69	-0.48	-89.92	
2,400.0	0.12	240.35	2,399.5	20.8	35.0	-20.1	0.74	-0.56	161.16	
2,425.0	0.27	203.93	2,424.5	20.8	35.0	-20.1	0.75	0.60	-145.68	
2,450.0	0.17	194.99	2,449.5	20.7	34.9	-20.0	0.42	-0.40	-35.76	

Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: FASCINATOR FED COM #604H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
 TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 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)
2,475.0	0.30	172.73	2,474.5	20.6	34.9	-19.9	0.63	0.52	-89.04
2,500.0	0.14	198.91	2,499.5	20.5	34.9	-19.8	0.74	-0.64	104.72
2,525.0	0.21	175.86	2,524.5	20.4	34.9	-19.7	0.39	0.28	-92.20
2,550.0	0.27	125.99	2,549.5	20.3	35.0	-19.6	0.84	0.24	-199.48
2,575.0	0.10	160.66	2,574.5	20.3	35.0	-19.6	0.78	-0.68	138.68
2,600.0	0.16	86.92	2,599.5	20.2	35.1	-19.6	0.65	0.24	-294.96
2,625.0	0.23	131.72	2,624.5	20.2	35.1	-19.5	0.65	0.28	179.20
2,650.0	0.31	118.44	2,649.5	20.1	35.2	-19.5	0.40	0.32	-53.12
2,675.0	0.17	139.17	2,674.5	20.1	35.3	-19.4	0.65	-0.56	82.92
2,700.0	0.33	125.48	2,699.5	20.0	35.4	-19.3	0.68	0.64	-54.76
2,725.0	0.42	103.97	2,724.5	20.0	35.5	-19.3	0.66	0.36	-86.04
2,750.0	0.19	82.51	2,749.5	19.9	35.7	-19.2	1.01	-0.92	-85.84
2,775.0	0.16	82.60	2,774.5	19.9	35.8	-19.3	0.12	-0.12	0.36
2,800.0	0.27	76.76	2,799.5	20.0	35.8	-19.3	0.45	0.44	-23.36
2,825.0	0.34	35.66	2,824.5	20.0	35.9	-19.3	0.90	0.28	-164.40
2,850.0	0.11	41.52	2,849.5	20.1	36.0	-19.4	0.92	-0.92	23.44
2,875.0	0.14	70.92	2,874.5	20.1	36.1	-19.4	0.28	0.12	117.60
2,900.0	0.13	48.48	2,899.5	20.2	36.1	-19.5	0.21	-0.04	-89.76
2,925.0	0.36	319.58	2,924.5	20.3	36.1	-19.6	1.52	0.92	-355.60
2,950.0	0.23	294.22	2,949.5	20.3	36.0	-19.6	0.73	-0.52	-101.44
2,975.0	0.10	335.53	2,974.5	20.4	35.9	-19.7	0.67	-0.52	165.24
3,000.0	0.14	28.78	2,999.5	20.4	35.9	-19.7	0.45	0.16	213.00
3,025.0	0.23	333.61	3,024.5	20.5	35.9	-19.8	0.76	0.36	-220.68
3,050.0	0.17	330.84	3,049.5	20.6	35.9	-19.9	0.24	-0.24	-11.08
3,075.0	0.23	1.04	3,074.5	20.7	35.9	-20.0	0.48	0.24	120.80
3,100.0	0.16	304.20	3,099.5	20.7	35.8	-20.0	0.78	-0.28	-227.36
3,125.0	0.12	337.77	3,124.5	20.8	35.8	-20.1	0.36	-0.16	134.28
3,150.0	0.24	0.68	3,149.5	20.8	35.8	-20.1	0.55	0.48	91.64
3,175.0	0.20	328.89	3,174.5	20.9	35.8	-20.2	0.51	-0.16	-127.16
3,200.0	0.20	308.48	3,199.5	21.0	35.7	-20.3	0.28	0.00	-81.64
3,225.0	0.11	20.83	3,224.5	21.0	35.7	-20.4	0.79	-0.36	289.40
3,250.0	0.14	333.26	3,249.5	21.1	35.7	-20.4	0.42	0.12	-190.28
3,275.0	0.12	350.83	3,274.5	21.2	35.7	-20.5	0.18	-0.08	70.28
3,300.0	0.21	358.58	3,299.5	21.2	35.7	-20.5	0.37	0.36	31.00
3,325.0	0.16	321.06	3,324.5	21.3	35.6	-20.6	0.51	-0.20	-150.08
3,350.0	0.19	351.67	3,349.5	21.4	35.6	-20.7	0.39	0.12	122.44
3,375.0	0.10	339.82	3,374.5	21.4	35.6	-20.7	0.38	-0.36	-47.40
3,400.0	0.17	354.60	3,399.5	21.5	35.6	-20.8	0.31	0.28	59.12
3,425.0	0.21	323.31	3,424.5	21.6	35.5	-20.9	0.44	0.16	-125.16
3,450.0	0.13	15.63	3,449.5	21.6	35.5	-20.9	0.66	-0.32	209.28
3,475.0	0.15	27.27	3,474.5	21.7	35.5	-21.0	0.14	0.08	46.56
3,500.0	0.19	328.84	3,499.5	21.7	35.5	-21.0	0.68	0.16	-233.72
3,525.0	0.57	315.50	3,524.5	21.9	35.4	-21.2	1.55	1.52	-53.36
3,550.0	0.11	308.15	3,549.5	22.0	35.3	-21.3	1.84	-1.84	-29.40

Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: FASCINATOR FED COM #604H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
 TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 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)
3,575.0	0.19	318.08	3,574.5	22.0	35.3	-21.3	0.34	0.32	39.72
3,600.0	0.15	9.77	3,599.5	22.1	35.3	-21.4	0.61	-0.16	206.76
3,625.0	0.14	25.81	3,624.5	22.1	35.3	-21.4	0.17	-0.04	64.16
3,650.0	0.14	347.57	3,649.5	22.2	35.3	-21.5	0.37	0.00	-152.96
3,675.0	0.12	346.22	3,674.5	22.2	35.3	-21.6	0.08	-0.08	-5.40
3,700.0	0.09	16.72	3,699.5	22.3	35.3	-21.6	0.25	-0.12	122.00
3,725.0	0.13	309.48	3,724.5	22.3	35.3	-21.6	0.51	0.16	-268.96
3,750.0	0.13	330.68	3,749.5	22.4	35.2	-21.7	0.19	0.00	84.80
3,775.0	0.09	280.09	3,774.5	22.4	35.2	-21.7	0.40	-0.16	-202.36
3,800.0	0.03	343.21	3,799.5	22.4	35.2	-21.7	0.32	-0.24	252.48
3,825.0	0.17	190.58	3,824.5	22.4	35.2	-21.7	0.79	0.56	-610.52
3,850.0	0.03	214.35	3,849.5	22.3	35.1	-21.7	0.57	-0.56	95.08
3,875.0	0.19	231.55	3,874.5	22.3	35.1	-21.6	0.65	0.64	68.80
3,900.0	0.05	249.78	3,899.5	22.3	35.1	-21.6	0.57	-0.56	72.92
3,925.0	0.05	174.17	3,924.5	22.3	35.1	-21.6	0.25	0.00	-302.44
3,950.0	0.11	163.92	3,949.5	22.2	35.1	-21.5	0.25	0.24	-41.00
3,975.0	0.04	81.06	3,974.5	22.2	35.1	-21.5	0.45	-0.28	-331.44
4,000.0	0.04	250.72	3,999.5	22.2	35.1	-21.5	0.32	0.00	678.64
4,025.0	0.07	60.29	4,024.5	22.2	35.1	-21.5	0.44	0.12	678.28
4,050.0	0.02	176.63	4,049.5	22.2	35.1	-21.5	0.32	-0.20	465.36
4,075.0	0.10	8.57	4,074.5	22.2	35.1	-21.5	0.48	0.32	-672.24
4,100.0	0.08	27.93	4,099.5	22.3	35.1	-21.6	0.14	-0.08	77.44
4,125.0	0.15	177.12	4,124.5	22.3	35.1	-21.6	0.89	0.28	596.76
4,150.0	0.04	101.54	4,149.5	22.2	35.1	-21.5	0.58	-0.44	-302.32
4,175.0	0.07	27.44	4,174.5	22.2	35.1	-21.5	0.28	0.12	-296.40
4,200.0	0.04	325.59	4,199.5	22.2	35.2	-21.6	0.25	-0.12	-247.40
4,225.0	0.24	100.18	4,224.5	22.2	35.2	-21.6	1.08	0.80	538.36
4,250.0	0.17	173.63	4,249.5	22.2	35.3	-21.5	1.01	-0.28	293.80
4,275.0	0.04	38.07	4,274.5	22.2	35.3	-21.5	0.80	-0.52	-542.24
4,300.0	0.07	228.97	4,299.5	22.2	35.3	-21.5	0.44	0.12	-676.40
4,325.0	0.09	61.08	4,324.5	22.2	35.3	-21.5	0.64	0.08	-671.56
4,350.0	0.11	64.02	4,349.5	22.2	35.3	-21.5	0.08	0.08	11.76
4,375.0	0.18	40.85	4,374.5	22.2	35.3	-21.5	0.36	0.28	-92.68
4,400.0	0.26	83.26	4,399.5	22.3	35.4	-21.6	0.70	0.32	169.64
4,425.0	0.19	55.26	4,424.5	22.3	35.5	-21.6	0.51	-0.28	-112.00
4,450.0	0.21	70.07	4,449.5	22.3	35.6	-21.6	0.22	0.08	59.24
4,475.0	0.10	52.33	4,474.5	22.4	35.7	-21.7	0.47	-0.44	-70.96
4,500.0	0.25	95.73	4,499.5	22.4	35.7	-21.7	0.76	0.60	173.60
4,525.0	0.21	105.09	4,524.5	22.4	35.8	-21.7	0.22	-0.16	37.44
4,550.0	0.30	81.96	4,549.5	22.4	35.9	-21.7	0.54	0.36	-92.52
4,575.0	0.09	61.48	4,574.5	22.4	36.0	-21.7	0.87	-0.84	-81.92
4,600.0	0.09	12.66	4,599.5	22.4	36.0	-21.7	0.30	0.00	-195.28
4,625.0	0.29	73.28	4,624.5	22.4	36.1	-21.7	1.03	0.80	242.48

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: FASCINATOR FED COM #604H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
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)
4,650.0	0.17	22.95	4,649.5	22.5	36.2	-21.8	0.89	-0.48	-201.32
4,675.0	0.23	76.91	4,674.5	22.5	36.2	-21.8	0.76	0.24	215.84
4,700.0	0.18	72.36	4,699.5	22.6	36.3	-21.8	0.21	-0.20	-18.20
4,725.0	0.10	26.01	4,724.5	22.6	36.4	-21.9	0.53	-0.32	-185.40
4,750.0	0.18	82.02	4,749.5	22.6	36.4	-21.9	0.60	0.32	224.04
4,775.0	0.15	351.07	4,774.5	22.7	36.5	-21.9	0.94	-0.12	-363.80
4,800.0	0.14	80.02	4,799.5	22.7	36.5	-22.0	0.81	-0.04	355.80
4,825.0	0.12	94.88	4,824.5	22.7	36.5	-22.0	0.16	-0.08	59.44
4,850.0	0.06	118.06	4,849.5	22.7	36.6	-22.0	0.28	-0.24	92.72
4,875.0	0.17	98.15	4,874.5	22.7	36.6	-22.0	0.46	0.44	-79.64
4,900.0	0.04	100.87	4,899.5	22.7	36.7	-21.9	0.52	-0.52	10.88
4,925.0	0.09	32.86	4,924.5	22.7	36.7	-22.0	0.33	0.20	-272.04
4,950.0	0.06	2.71	4,949.5	22.7	36.7	-22.0	0.19	-0.12	-120.60
4,975.0	0.16	77.14	4,974.5	22.7	36.7	-22.0	0.62	0.40	297.72
5,000.0	0.29	95.90	4,999.5	22.7	36.8	-22.0	0.59	0.52	75.04
5,025.0	0.32	110.04	5,024.5	22.7	37.0	-22.0	0.32	0.12	56.56
5,050.0	0.24	80.92	5,049.5	22.7	37.1	-22.0	0.64	-0.32	-116.48
5,075.0	0.36	77.72	5,074.5	22.7	37.2	-22.0	0.48	0.48	-12.80
5,100.0	0.50	106.58	5,099.5	22.7	37.4	-22.0	1.01	0.56	115.44
5,125.0	0.30	81.66	5,124.5	22.7	37.6	-21.9	1.04	-0.80	-99.68
5,150.0	0.32	83.62	5,149.5	22.7	37.7	-22.0	0.09	0.08	7.84
5,175.0	0.38	87.90	5,174.5	22.7	37.8	-22.0	0.26	0.24	17.12
5,200.0	0.57	95.63	5,199.5	22.7	38.1	-22.0	0.80	0.76	30.92
5,225.0	0.40	92.45	5,224.5	22.7	38.3	-21.9	0.69	-0.68	-12.72
5,250.0	0.43	111.40	5,249.5	22.6	38.4	-21.9	0.56	0.12	75.80
5,275.0	0.38	87.02	5,274.5	22.6	38.6	-21.9	0.71	-0.20	-97.52
5,300.0	0.36	90.03	5,299.5	22.6	38.8	-21.9	0.11	-0.08	12.04
5,325.0	0.33	105.84	5,324.5	22.6	38.9	-21.8	0.40	-0.12	63.24
5,350.0	0.37	116.27	5,349.5	22.5	39.1	-21.8	0.30	0.16	41.72
5,375.0	0.67	190.32	5,374.5	22.4	39.1	-21.6	2.68	1.20	296.20
5,400.0	1.21	199.27	5,399.5	22.0	39.0	-21.2	2.23	2.16	35.80
5,425.0	1.31	206.97	5,424.5	21.5	38.8	-20.7	0.79	0.40	30.80
5,450.0	1.72	212.40	5,449.5	20.9	38.4	-20.1	1.74	1.64	21.72
5,475.0	1.53	207.72	5,474.4	20.3	38.1	-19.5	0.93	-0.76	-18.72
5,500.0	1.55	208.28	5,499.4	19.7	37.8	-18.9	0.10	0.08	2.24
5,525.0	1.60	209.14	5,524.4	19.1	37.4	-18.4	0.22	0.20	3.44
5,550.0	1.54	208.37	5,549.4	18.5	37.1	-17.8	0.25	-0.24	-3.08
5,575.0	1.61	206.32	5,574.4	17.9	36.8	-17.2	0.36	0.28	-8.20
5,600.0	1.67	204.96	5,599.4	17.2	36.5	-16.5	0.29	0.24	-5.44
5,625.0	1.60	208.09	5,624.4	16.6	36.2	-15.9	0.45	-0.28	12.52
5,650.0	1.57	207.53	5,649.4	16.0	35.8	-15.3	0.14	-0.12	-2.24
5,675.0	1.67	206.51	5,674.4	15.3	35.5	-14.7	0.42	0.40	-4.08
5,700.0	1.79	209.28	5,699.4	14.7	35.2	-14.0	0.58	0.48	11.08

Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: FASCINATOR FED COM #604H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
 TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 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)
5,725.0	1.56	203.04	5,724.3	14.0	34.8	-13.3	1.17	-0.92	-24.96
5,750.0	1.63	221.09	5,749.3	13.4	34.5	-12.8	2.02	0.28	72.20
5,775.0	1.77	229.31	5,774.3	12.9	34.0	-12.3	1.12	0.56	32.88
5,800.0	1.88	236.02	5,799.3	12.4	33.3	-11.8	0.96	0.44	26.84
5,825.0	2.06	242.40	5,824.3	12.0	32.6	-11.4	1.13	0.72	25.52
5,850.0	1.96	242.49	5,849.3	11.6	31.8	-11.0	0.40	-0.40	0.36
5,875.0	1.90	243.90	5,874.3	11.2	31.1	-10.6	0.31	-0.24	5.64
5,900.0	1.94	241.54	5,899.3	10.8	30.3	-10.2	0.35	0.16	-9.44
5,925.0	1.91	241.51	5,924.2	10.4	29.6	-9.9	0.12	-0.12	-0.12
5,950.0	1.49	241.44	5,949.2	10.1	28.9	-9.5	1.68	-1.68	-0.28
5,975.0	1.32	247.79	5,974.2	9.8	28.4	-9.3	0.92	-0.68	25.40
6,000.0	1.12	248.58	5,999.2	9.6	27.9	-9.1	0.80	-0.80	3.16
6,025.0	0.97	261.71	6,024.2	9.5	27.4	-9.0	1.13	-0.60	52.52
6,050.0	0.73	290.26	6,049.2	9.5	27.1	-9.0	1.92	-0.96	114.20
6,075.0	0.81	349.37	6,074.2	9.8	26.9	-9.2	3.05	0.32	236.44
6,100.0	0.76	349.08	6,099.2	10.1	26.8	-9.6	0.20	-0.20	-1.16
6,125.0	0.84	349.58	6,124.2	10.4	26.8	-9.9	0.32	0.32	2.00
6,150.0	0.84	351.22	6,149.2	10.8	26.7	-10.3	0.10	0.00	6.56
6,175.0	0.68	2.65	6,174.2	11.1	26.7	-10.6	0.88	-0.64	45.72
6,200.0	1.01	349.03	6,199.2	11.5	26.7	-11.0	1.54	1.32	-54.48
6,225.0	0.90	350.89	6,224.2	11.9	26.6	-11.4	0.46	-0.44	7.44
6,250.0	0.85	355.95	6,249.2	12.3	26.5	-11.8	0.37	-0.20	20.24
6,275.0	1.00	345.81	6,274.2	12.7	26.5	-12.2	0.89	0.60	-40.56
6,300.0	0.80	1.39	6,299.2	13.1	26.4	-12.5	1.26	-0.80	62.32
6,325.0	0.66	35.98	6,324.2	13.4	26.5	-12.8	1.82	-0.56	138.36
6,350.0	0.81	60.88	6,349.2	13.6	26.7	-13.0	1.40	0.60	99.60
6,375.0	1.00	66.11	6,374.2	13.7	27.1	-13.2	0.83	0.76	20.92
6,400.0	1.12	62.15	6,399.2	13.9	27.5	-13.4	0.56	0.48	-15.84
6,425.0	0.97	73.85	6,424.2	14.1	27.9	-13.6	1.04	-0.60	46.80
6,450.0	0.94	70.57	6,449.2	14.2	28.3	-13.7	0.25	-0.12	-13.12
6,475.0	1.01	64.46	6,474.2	14.4	28.7	-13.8	0.50	0.28	-24.44
6,500.0	0.91	60.91	6,499.2	14.6	29.1	-14.0	0.47	-0.40	-14.20
6,525.0	0.71	7.11	6,524.2	14.8	29.3	-14.3	3.02	-0.80	-215.20
6,550.0	0.85	343.81	6,549.1	15.2	29.3	-14.6	1.37	0.56	-93.20
6,575.0	0.72	332.83	6,574.1	15.5	29.1	-14.9	0.79	-0.52	-43.92
6,600.0	0.81	331.81	6,599.1	15.8	29.0	-15.2	0.36	0.36	-4.08
6,625.0	0.97	319.29	6,624.1	16.1	28.8	-15.5	1.00	0.64	-50.08
6,650.0	0.90	318.66	6,649.1	16.4	28.5	-15.9	0.28	-0.28	-2.52
6,675.0	1.06	322.57	6,674.1	16.7	28.2	-16.2	0.69	0.64	15.64
6,700.0	0.78	326.08	6,699.1	17.1	28.0	-16.5	1.14	-1.12	14.04
6,725.0	0.81	331.37	6,724.1	17.4	27.8	-16.8	0.32	0.12	21.16
6,750.0	0.89	325.48	6,749.1	17.7	27.6	-17.1	0.47	0.32	-23.56
6,775.0	0.85	329.24	6,774.1	18.0	27.4	-17.5	0.28	-0.16	15.04
6,800.0	0.50	308.39	6,799.1	18.2	27.2	-17.7	1.69	-1.40	-83.40

Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: FASCINATOR FED COM #604H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
 TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 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)
6,825.0	0.36	230.43	6,824.1	18.2	27.1	-17.7	2.21	-0.56	-311.84
6,850.0	0.59	194.14	6,849.1	18.1	27.0	-17.5	1.47	0.92	-145.16
6,875.0	0.59	208.44	6,874.1	17.8	26.9	-17.3	0.59	0.00	57.20
6,900.0	0.77	190.28	6,899.1	17.5	26.8	-17.0	1.11	0.72	-72.64
6,925.0	0.73	187.72	6,924.1	17.2	26.8	-16.7	0.21	-0.16	-10.24
6,950.0	0.67	191.84	6,949.1	16.9	26.7	-16.4	0.31	-0.24	16.48
6,975.0	0.82	181.81	6,974.1	16.6	26.7	-16.1	0.79	0.60	-40.12
7,000.0	0.81	183.90	6,999.1	16.2	26.6	-15.7	0.13	-0.04	8.36
7,025.0	0.87	177.57	7,024.1	15.9	26.6	-15.4	0.44	0.24	-25.32
7,050.0	0.81	189.32	7,049.1	15.5	26.6	-15.0	0.73	-0.24	47.00
7,075.0	0.83	187.86	7,074.1	15.2	26.6	-14.6	0.12	0.08	-5.84
7,100.0	0.89	182.97	7,099.1	14.8	26.5	-14.3	0.38	0.24	-19.56
7,125.0	0.90	181.76	7,124.1	14.4	26.5	-13.9	0.09	0.04	-4.84
7,150.0	0.92	179.12	7,149.1	14.0	26.5	-13.5	0.19	0.08	-10.56
7,175.0	0.86	180.41	7,174.1	13.6	26.5	-13.1	0.25	-0.24	5.16
7,200.0	0.89	181.00	7,199.1	13.2	26.5	-12.7	0.13	0.12	2.36
7,225.0	1.02	177.66	7,224.1	12.8	26.5	-12.3	0.57	0.52	-13.36
7,250.0	0.93	188.73	7,249.1	12.4	26.5	-11.9	0.83	-0.36	44.28
7,275.0	0.92	180.74	7,274.1	12.0	26.5	-11.5	0.52	-0.04	-31.96
7,300.0	0.95	183.24	7,299.1	11.6	26.4	-11.1	0.20	0.12	10.00
7,325.0	0.94	184.52	7,324.1	11.2	26.4	-10.7	0.09	-0.04	5.12
7,350.0	0.93	180.77	7,349.1	10.8	26.4	-10.3	0.25	-0.04	-15.00
7,375.0	1.02	176.77	7,374.1	10.3	26.4	-9.8	0.45	0.36	-16.00
7,400.0	0.84	176.94	7,399.1	9.9	26.4	-9.4	0.72	-0.72	0.68
7,425.0	0.91	178.74	7,424.1	9.6	26.4	-9.0	0.30	0.28	7.20
7,450.0	0.96	177.81	7,449.1	9.1	26.5	-8.6	0.21	0.20	-3.72
7,475.0	0.98	181.21	7,474.0	8.7	26.5	-8.2	0.24	0.08	13.60
7,500.0	1.05	181.32	7,499.0	8.3	26.5	-7.8	0.28	0.28	0.44
7,525.0	0.94	180.97	7,524.0	7.8	26.4	-7.3	0.44	-0.44	-1.40
7,550.0	0.99	183.26	7,549.0	7.4	26.4	-6.9	0.25	0.20	9.16
7,575.0	0.91	181.75	7,574.0	7.0	26.4	-6.5	0.34	-0.32	-6.04
7,600.0	0.98	176.65	7,599.0	6.6	26.4	-6.1	0.44	0.28	-20.40
7,625.0	1.12	175.10	7,624.0	6.1	26.4	-5.6	0.57	0.56	-6.20
7,650.0	1.17	180.71	7,649.0	5.6	26.5	-5.1	0.49	0.20	22.44
7,675.0	1.29	187.63	7,674.0	5.1	26.4	-4.6	0.76	0.48	27.68
7,700.0	1.42	186.63	7,699.0	4.5	26.4	-4.0	0.53	0.52	-4.00
7,725.0	1.44	189.19	7,724.0	3.9	26.3	-3.4	0.27	0.08	10.24
7,750.0	1.36	197.10	7,749.0	3.3	26.1	-2.8	0.84	-0.32	31.64
7,775.0	1.50	189.93	7,774.0	2.7	26.0	-2.2	0.91	0.56	-28.68
7,800.0	1.45	190.23	7,799.0	2.1	25.9	-1.6	0.20	-0.20	1.20
7,825.0	1.50	188.33	7,824.0	1.4	25.8	-0.9	0.28	0.20	-7.60
7,850.0	1.64	188.90	7,849.0	0.8	25.7	-0.3	0.56	0.56	2.28
7,875.0	1.61	183.43	7,873.9	0.1	25.6	0.4	0.63	-0.12	-21.88

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: FASCINATOR FED COM #604H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
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)
7,900.0	1.59	186.16	7,898.9	-0.6	25.5	1.1	0.32	-0.08	10.92
7,925.0	1.53	190.04	7,923.9	-1.3	25.4	1.8	0.49	-0.24	15.52
7,950.0	1.66	185.89	7,948.9	-2.0	25.3	2.5	0.70	0.52	-16.60
7,975.0	1.55	192.05	7,973.9	-2.7	25.2	3.2	0.82	-0.44	24.64
8,000.0	1.74	179.54	7,998.9	-3.4	25.2	3.9	1.62	0.76	-50.04
8,025.0	1.68	188.66	8,023.9	-4.1	25.1	4.6	1.11	-0.24	36.48
8,050.0	1.63	185.79	8,048.9	-4.9	25.0	5.3	0.39	-0.20	-11.48
8,075.0	1.75	182.46	8,073.9	-5.6	25.0	6.1	0.62	0.48	-13.32
8,100.0	1.74	181.52	8,098.9	-6.4	24.9	6.8	0.12	-0.04	-3.76
8,125.0	1.75	183.13	8,123.8	-7.1	24.9	7.6	0.20	0.04	6.44
8,150.0	1.68	185.25	8,148.8	-7.9	24.9	8.3	0.38	-0.28	8.48
8,175.0	1.69	185.55	8,173.8	-8.6	24.8	9.1	0.05	0.04	1.20
8,200.0	1.74	182.90	8,198.8	-9.3	24.7	9.8	0.37	0.20	-10.60
8,225.0	1.76	198.66	8,223.8	-10.1	24.6	10.6	1.92	0.08	63.04
8,250.0	1.91	207.02	8,248.8	-10.8	24.3	11.3	1.23	0.60	33.44
8,275.0	1.99	205.17	8,273.8	-11.6	23.9	12.0	0.41	0.32	-7.40
8,300.0	2.00	209.77	8,298.8	-12.4	23.5	12.8	0.64	0.04	18.40
8,325.0	2.09	206.73	8,323.7	-13.1	23.1	13.6	0.56	0.36	-12.16
8,350.0	2.07	204.39	8,348.7	-14.0	22.7	14.4	0.35	-0.08	-9.36
8,375.0	2.12	206.12	8,373.7	-14.8	22.3	15.2	0.32	0.20	6.92
8,400.0	2.07	206.77	8,398.7	-15.6	21.9	16.0	0.22	-0.20	2.60
8,425.0	1.97	208.47	8,423.7	-16.4	21.5	16.8	0.47	-0.40	6.80
8,450.0	2.04	206.63	8,448.7	-17.2	21.1	17.6	0.38	0.28	-7.36
8,475.0	2.02	209.19	8,473.6	-17.9	20.7	18.3	0.37	-0.08	10.24
8,500.0	2.01	208.99	8,498.6	-18.7	20.2	19.1	0.05	-0.04	-0.80
8,525.0	1.87	208.48	8,523.6	-19.5	19.8	19.8	0.56	-0.56	-2.04
8,550.0	1.83	207.58	8,548.6	-20.2	19.5	20.5	0.20	-0.16	-3.60
8,575.0	1.92	207.85	8,573.6	-20.9	19.1	21.3	0.36	0.36	1.08
8,600.0	1.88	205.61	8,598.6	-21.6	18.7	22.0	0.34	-0.16	-8.96
8,625.0	1.78	203.54	8,623.6	-22.4	18.4	22.7	0.48	-0.40	-8.28
8,650.0	1.72	205.49	8,648.6	-23.1	18.1	23.4	0.34	-0.24	7.80
8,675.0	1.82	204.82	8,673.5	-23.7	17.7	24.1	0.41	0.40	-2.68
8,700.0	1.74	212.58	8,698.5	-24.4	17.4	24.8	1.01	-0.32	31.04
8,725.0	1.75	205.78	8,723.5	-25.1	17.0	25.4	0.83	0.04	-27.20
8,750.0	1.79	206.08	8,748.5	-25.8	16.6	26.1	0.16	0.16	1.20
8,775.0	1.56	206.43	8,773.5	-26.4	16.3	26.8	0.92	-0.92	1.40
8,800.0	1.59	205.63	8,798.5	-27.1	16.0	27.4	0.15	0.12	-3.20
8,825.0	1.53	200.63	8,823.5	-27.7	15.8	28.0	0.59	-0.24	-20.00
8,850.0	1.58	202.00	8,848.5	-28.3	15.5	28.6	0.25	0.20	5.48
8,875.0	1.48	203.00	8,873.5	-28.9	15.3	29.2	0.41	-0.40	4.00
8,900.0	1.49	200.71	8,898.4	-29.5	15.0	29.8	0.24	0.04	-9.16
8,925.0	1.39	202.53	8,923.4	-30.1	14.8	30.4	0.44	-0.40	7.28
8,950.0	1.46	199.69	8,948.4	-30.7	14.6	31.0	0.40	0.28	-11.36

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well FASCINATOR FED COM #604H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Site:	BULLDOG	MD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Well:	FASCINATOR FED COM #604H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)
8,975.0	1.37	198.12	8,973.4	-31.3	14.4	31.6	0.39	-0.36	-6.28
9,000.0	1.25	202.27	8,998.4	-31.8	14.2	32.1	0.61	-0.48	16.60
9,025.0	1.16	202.57	9,023.4	-32.3	14.0	32.6	0.36	-0.36	1.20
9,050.0	1.14	196.63	9,048.4	-32.8	13.8	33.0	0.48	-0.08	-23.76
9,075.0	1.21	193.52	9,073.4	-33.3	13.7	33.5	0.38	0.28	-12.44
9,100.0	1.17	195.74	9,098.4	-33.8	13.5	34.0	0.24	-0.16	8.88
9,125.0	1.25	192.97	9,123.4	-34.3	13.4	34.5	0.40	0.32	-11.08
9,150.0	1.08	195.68	9,148.4	-34.8	13.3	35.0	0.71	-0.68	10.84
9,175.0	1.27	195.24	9,173.4	-35.3	13.1	35.5	0.76	0.76	-1.76
9,200.0	1.13	200.15	9,198.4	-35.8	13.0	36.0	0.69	-0.56	19.64
9,225.0	1.11	195.61	9,223.4	-36.2	12.8	36.5	0.36	-0.08	-18.16
9,250.0	1.10	186.17	9,248.4	-36.7	12.7	36.9	0.73	-0.04	-37.76
9,275.0	0.92	187.98	9,273.4	-37.1	12.7	37.4	0.73	-0.72	7.24
9,300.0	0.90	181.01	9,298.4	-37.5	12.7	37.8	0.45	-0.08	-27.88
9,325.0	1.02	181.56	9,323.4	-38.0	12.6	38.2	0.48	0.48	2.20
9,350.0	0.93	187.95	9,348.4	-38.4	12.6	38.6	0.56	-0.36	25.56
9,375.0	0.98	183.55	9,373.3	-38.8	12.6	39.0	0.35	0.20	-17.60
9,400.0	0.86	186.95	9,398.3	-39.2	12.5	39.4	0.53	-0.48	13.60
9,425.0	0.79	176.40	9,423.3	-39.6	12.5	39.8	0.67	-0.28	-42.20
9,450.0	0.75	177.85	9,448.3	-39.9	12.5	40.1	0.18	-0.16	5.80
9,475.0	0.67	169.47	9,473.3	-40.2	12.6	40.4	0.52	-0.32	-33.52
9,500.0	0.71	169.28	9,498.3	-40.5	12.6	40.7	0.16	0.16	-0.76
9,525.0	0.66	164.03	9,523.3	-40.8	12.7	41.0	0.32	-0.20	-21.00
9,550.0	0.67	167.38	9,548.3	-41.1	12.8	41.3	0.16	0.04	13.40
9,575.0	0.65	165.28	9,573.3	-41.3	12.8	41.6	0.13	-0.08	-8.40
9,600.0	0.62	168.93	9,598.3	-41.6	12.9	41.9	0.20	-0.12	14.60
9,625.0	0.53	167.98	9,623.3	-41.9	12.9	42.1	0.36	-0.36	-3.80
9,650.0	0.59	170.13	9,648.3	-42.1	13.0	42.3	0.25	0.24	8.60
9,675.0	0.60	164.37	9,673.3	-42.4	13.0	42.6	0.24	0.04	-23.04
9,700.0	0.70	172.48	9,698.3	-42.6	13.1	42.9	0.54	0.40	32.44
9,725.0	0.60	185.44	9,723.3	-42.9	13.1	43.2	0.71	-0.40	51.84
9,750.0	0.61	196.87	9,748.3	-43.2	13.1	43.4	0.48	0.04	45.72
9,775.0	0.67	216.71	9,773.3	-43.4	12.9	43.7	0.91	0.24	79.36
9,800.0	0.57	219.71	9,798.3	-43.6	12.8	43.9	0.42	-0.40	12.00
9,825.0	0.60	214.15	9,823.3	-43.8	12.6	44.1	0.26	0.12	-22.24
9,850.0	0.61	220.18	9,848.3	-44.0	12.5	44.3	0.26	0.04	24.12
9,875.0	0.65	221.64	9,873.3	-44.2	12.3	44.5	0.17	0.16	5.84
9,900.0	0.67	219.92	9,898.3	-44.5	12.1	44.7	0.11	0.08	-6.88
9,925.0	1.14	222.25	9,923.3	-44.8	11.8	45.0	1.89	1.88	9.32
9,950.0	1.30	222.08	9,948.3	-45.2	11.5	45.4	0.64	0.64	-0.68
9,975.0	1.47	222.68	9,973.3	-45.6	11.1	45.8	0.68	0.68	2.40
10,000.0	1.70	225.77	9,998.3	-46.1	10.6	46.3	0.98	0.92	12.36
10,025.0	1.55	216.20	10,023.3	-46.6	10.1	46.8	1.24	-0.60	-38.28
10,050.0	1.74	215.67	10,048.3	-47.2	9.7	47.4	0.76	0.76	-2.12

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well FASCINATOR FED COM #604H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Site:	BULLDOG	MD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Well:	FASCINATOR FED COM #604H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)
10,075.0	1.71	218.76	10,073.3	-47.8	9.2	48.0	0.39	-0.12	12.36
10,100.0	1.83	216.83	10,098.2	-48.4	8.8	48.6	0.54	0.48	-7.72
10,125.0	1.87	220.05	10,123.2	-49.1	8.3	49.2	0.45	0.16	12.88
10,150.0	1.91	215.43	10,148.2	-49.7	7.8	49.8	0.63	0.16	-18.48
10,175.0	1.95	217.22	10,173.2	-50.4	7.3	50.5	0.29	0.16	7.16
10,200.0	1.95	217.46	10,198.2	-51.1	6.7	51.2	0.03	0.00	0.96
10,225.0	2.01	216.44	10,223.2	-51.7	6.2	51.9	0.28	0.24	-4.08
10,250.0	2.01	216.41	10,248.2	-52.5	5.7	52.6	0.00	0.00	-0.12
10,275.0	2.16	210.04	10,273.1	-53.2	5.2	53.3	1.10	0.60	-25.48
10,300.0	2.24	209.54	10,298.1	-54.0	4.7	54.1	0.33	0.32	-2.00
10,325.0	2.01	205.14	10,323.1	-54.9	4.3	54.9	1.13	-0.92	-17.60
10,350.0	2.12	208.23	10,348.1	-55.7	3.9	55.7	0.63	0.44	12.36
10,375.0	2.16	204.25	10,373.1	-56.5	3.5	56.6	0.62	0.16	-15.92
10,400.0	1.95	201.56	10,398.1	-57.3	3.1	57.4	0.92	-0.84	-10.76
10,425.0	2.05	203.14	10,423.0	-58.1	2.8	58.2	0.46	0.40	6.32
10,450.0	2.05	203.46	10,448.0	-59.0	2.5	59.0	0.05	0.00	1.28
10,475.0	2.11	202.82	10,473.0	-59.8	2.1	59.8	0.26	0.24	-2.56
10,500.0	2.10	200.41	10,498.0	-60.7	1.8	60.7	0.36	-0.04	-9.64
10,525.0	1.99	191.54	10,523.0	-61.5	1.5	61.5	1.34	-0.44	-35.48
10,550.0	2.09	190.05	10,548.0	-62.4	1.3	62.4	0.45	0.40	-5.96
10,575.0	2.09	186.20	10,572.9	-63.3	1.2	63.3	0.56	0.00	-15.40
10,600.0	2.07	188.46	10,597.9	-64.2	1.1	64.2	0.34	-0.08	9.04
10,625.0	1.99	181.20	10,622.9	-65.1	1.0	65.1	1.08	-0.32	-29.04
10,650.0	1.77	180.48	10,647.9	-65.9	1.0	65.9	0.89	-0.88	-2.88
10,675.0	1.48	173.21	10,672.9	-66.6	1.0	66.6	1.42	-1.16	-29.08
10,700.0	1.07	165.18	10,697.9	-67.1	1.1	67.1	1.79	-1.64	-32.12
10,725.0	0.93	147.42	10,722.9	-67.5	1.3	67.5	1.35	-0.56	-71.04
10,750.0	0.81	131.31	10,747.9	-67.8	1.6	67.8	1.08	-0.48	-64.44
10,775.0	0.77	132.25	10,772.9	-68.1	1.8	68.1	0.17	-0.16	3.76
10,800.0	0.90	121.68	10,797.9	-68.3	2.1	68.3	0.80	0.52	-42.28
10,825.0	0.88	107.38	10,822.9	-68.4	2.5	68.5	0.89	-0.08	-57.20
10,850.0	0.78	98.30	10,847.9	-68.5	2.8	68.6	0.66	-0.40	-36.32
10,875.0	0.92	88.81	10,872.9	-68.5	3.2	68.6	0.79	0.56	-37.96
10,900.0	0.83	100.71	10,897.9	-68.6	3.6	68.6	0.81	-0.36	47.60
10,925.0	0.88	93.51	10,922.9	-68.6	3.9	68.7	0.47	0.20	-28.80
10,950.0	0.87	88.45	10,947.9	-68.6	4.3	68.7	0.31	-0.04	-20.24
10,975.0	0.82	95.06	10,972.8	-68.6	4.7	68.7	0.44	-0.20	26.44
11,000.0	0.87	90.80	10,997.8	-68.6	5.0	68.7	0.32	0.20	-17.04
11,025.0	0.82	93.33	11,022.8	-68.7	5.4	68.7	0.25	-0.20	10.12
11,050.0	0.87	98.45	11,047.8	-68.7	5.8	68.8	0.36	0.20	20.48
11,075.0	0.87	95.18	11,072.8	-68.7	6.2	68.8	0.20	0.00	-13.08
11,100.0	0.87	91.92	11,097.8	-68.8	6.5	68.9	0.20	0.00	-13.04
11,125.0	0.80	96.16	11,122.8	-68.8	6.9	68.9	0.37	-0.28	16.96

Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: FASCINATOR FED COM #604H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
 TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
 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)
11,150.0	0.86	101.87	11,147.8	-68.8	7.3	69.0	0.41	0.24	22.84
11,175.0	0.70	97.78	11,172.8	-68.9	7.6	69.0	0.68	-0.64	-16.36
11,200.0	0.56	114.08	11,197.8	-69.0	7.8	69.1	0.90	-0.56	65.20
11,225.0	0.57	113.19	11,222.8	-69.1	8.1	69.2	0.05	0.04	-3.56
11,250.0	0.55	117.15	11,247.8	-69.2	8.3	69.3	0.17	-0.08	15.84
11,275.0	0.35	109.31	11,272.8	-69.3	8.5	69.4	0.84	-0.80	-31.36
11,300.0	0.33	94.05	11,297.8	-69.3	8.6	69.4	0.37	-0.08	-61.04
11,325.0	0.28	52.56	11,322.8	-69.3	8.7	69.4	0.88	-0.20	-165.96
11,350.0	0.27	29.61	11,347.8	-69.2	8.8	69.3	0.44	-0.04	-91.80
11,375.0	0.47	19.18	11,372.8	-69.0	8.9	69.2	0.84	0.80	-41.72
11,400.0	0.58	356.56	11,397.8	-68.8	8.9	69.0	0.93	0.44	-90.48
11,425.0	0.67	339.96	11,422.8	-68.5	8.8	68.7	0.80	0.36	-66.40
11,450.0	0.83	332.43	11,447.8	-68.2	8.7	68.4	0.75	0.64	-30.12
11,475.0	0.93	334.76	11,472.8	-67.9	8.5	68.0	0.42	0.40	9.32
11,500.0	0.97	321.72	11,497.8	-67.5	8.3	67.7	0.88	0.16	-52.16
11,525.0	0.87	314.06	11,522.8	-67.2	8.1	67.4	0.63	-0.40	-30.64
11,550.0	0.88	315.30	11,547.8	-67.0	7.8	67.1	0.09	0.04	4.96
11,575.0	1.00	309.21	11,572.8	-66.7	7.5	66.8	0.62	0.48	-24.36
11,600.0	1.00	304.90	11,597.8	-66.4	7.1	66.6	0.30	0.00	-17.24
11,625.0	1.02	311.04	11,622.8	-66.2	6.8	66.3	0.44	0.08	24.56
11,650.0	1.05	310.28	11,647.8	-65.9	6.4	66.0	0.13	0.12	-3.04
11,675.0	1.14	307.49	11,672.8	-65.6	6.1	65.7	0.42	0.36	-11.16
11,700.0	1.02	296.34	11,697.8	-65.3	5.7	65.4	0.97	-0.48	-44.60
11,725.0	1.22	300.89	11,722.8	-65.1	5.2	65.2	0.87	0.80	18.20
11,743.0	1.24	300.09	11,740.8	-64.9	4.9	65.0	0.15	0.11	-4.44
11,870.0	1.51	301.81	11,867.7	-63.3	2.3	63.4	0.22	0.21	1.35
11,934.0	1.43	236.68	11,931.7	-63.3	0.9	63.3	2.47	-0.13	-101.77
11,965.0	4.55	205.41	11,962.7	-64.6	0.1	64.6	11.00	10.06	-100.87
11,997.0	8.44	200.37	11,994.5	-68.0	-1.3	67.9	12.27	12.16	-15.75
12,028.0	10.11	208.60	12,025.1	-72.5	-3.4	72.4	6.87	5.39	26.55
12,060.0	11.16	195.46	12,056.5	-78.0	-5.6	77.8	8.23	3.28	-41.06
12,091.0	13.60	195.19	12,086.8	-84.4	-7.3	84.2	7.87	7.87	-0.87
12,122.0	17.72	194.45	12,116.6	-92.5	-9.4	92.3	13.31	13.29	-2.39
12,153.0	22.01	195.47	12,145.8	-102.6	-12.2	102.4	13.88	13.84	3.29
12,185.0	25.73	196.17	12,175.0	-115.1	-15.7	114.8	11.66	11.63	2.19
12,197.7	26.66	195.73	12,186.4	-120.5	-17.2	120.1	7.47	7.32	-3.48
FTP @ 12197.7' MD									
12,216.0	28.00	195.14	12,202.7	-128.6	-19.5	128.2	7.47	7.33	-3.22
12,248.0	29.74	195.02	12,230.7	-143.5	-23.5	143.0	5.44	5.44	-0.38
12,279.0	32.82	193.96	12,257.2	-159.1	-27.5	158.5	10.09	9.94	-3.42
12,310.0	36.88	192.11	12,282.6	-176.3	-31.5	175.7	13.53	13.10	-5.97
12,341.0	41.15	188.68	12,306.7	-195.5	-35.0	194.8	15.43	13.77	-11.06
12,373.0	44.57	186.72	12,330.2	-217.1	-37.9	216.3	11.47	10.69	-6.13

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well FASCINATOR FED COM #604H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Site:	BULLDOG	MD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Well:	FASCINATOR FED COM #604H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)
12,404.0	47.36	185.04	12,351.7	-239.3	-40.2	238.4	9.81	9.00	-5.42
12,435.0	49.91	184.57	12,372.2	-262.4	-42.1	261.6	8.30	8.23	-1.52
12,467.0	52.35	183.29	12,392.3	-287.3	-43.8	286.4	8.24	7.63	-4.00
12,498.0	55.65	180.52	12,410.5	-312.3	-44.6	311.4	12.87	10.65	-8.94
12,528.0	58.88	178.17	12,426.7	-337.6	-44.3	336.7	12.62	10.77	-7.83
12,560.0	61.56	176.98	12,442.6	-365.3	-43.2	364.4	8.98	8.38	-3.72
12,591.0	63.39	177.41	12,456.9	-392.8	-41.8	391.9	6.03	5.90	1.39
12,623.0	65.96	178.57	12,470.6	-421.7	-40.8	420.8	8.67	8.03	3.63
12,654.0	69.34	179.84	12,482.4	-450.3	-40.4	449.5	11.54	10.90	4.10
12,686.0	71.74	180.24	12,493.1	-480.5	-40.4	479.6	7.59	7.50	1.25
12,717.0	73.26	180.56	12,502.4	-510.1	-40.6	509.2	5.00	4.90	1.03
12,748.0	76.62	180.86	12,510.5	-540.0	-41.0	539.1	10.88	10.84	0.97
12,779.0	80.63	181.26	12,516.6	-570.4	-41.6	569.5	13.00	12.94	1.29
12,810.0	83.66	181.10	12,520.8	-601.1	-42.2	600.2	9.79	9.77	-0.52
12,839.0	85.91	180.07	12,523.4	-630.0	-42.5	629.0	8.53	7.76	-3.55
12,933.0	87.70	179.72	12,528.7	-723.8	-42.3	722.9	1.94	1.90	-0.37
13,028.0	88.12	179.59	12,532.1	-818.7	-41.8	817.8	0.46	0.44	-0.14
13,122.0	88.66	178.77	12,534.8	-912.7	-40.4	911.7	1.04	0.57	-0.87
13,217.0	89.08	178.64	12,536.7	-1,007.7	-38.3	1,006.7	0.46	0.44	-0.14
13,312.0	89.41	179.25	12,537.9	-1,102.6	-36.5	1,101.7	0.73	0.35	0.64
13,407.0	89.69	179.03	12,538.7	-1,197.6	-35.1	1,196.7	0.37	0.29	-0.23
13,501.0	89.89	179.40	12,539.0	-1,291.6	-33.8	1,290.7	0.45	0.21	0.39
13,597.0	89.05	178.40	12,539.9	-1,387.6	-32.0	1,386.7	1.36	-0.88	-1.04
13,691.0	87.62	178.98	12,542.6	-1,481.5	-29.8	1,480.7	1.64	-1.52	0.62
13,786.0	87.98	179.09	12,546.3	-1,576.4	-28.2	1,575.6	0.40	0.38	0.12
13,881.0	88.10	179.04	12,549.5	-1,671.4	-26.7	1,670.5	0.14	0.13	-0.05
13,976.0	86.83	179.94	12,553.7	-1,766.3	-25.8	1,765.4	1.64	-1.34	0.95
14,069.0	87.06	180.33	12,558.7	-1,859.1	-26.0	1,858.3	0.49	0.25	0.42
14,164.0	87.28	180.59	12,563.4	-1,954.0	-26.8	1,953.1	0.36	0.23	0.27
14,258.0	87.26	180.53	12,567.8	-2,047.9	-27.7	2,047.0	0.07	-0.02	-0.06
14,352.0	87.48	180.59	12,572.2	-2,141.8	-28.6	2,140.8	0.24	0.23	0.06
14,447.0	87.42	179.72	12,576.4	-2,236.7	-28.9	2,235.7	0.92	-0.06	-0.92
14,541.0	87.51	179.31	12,580.5	-2,330.6	-28.1	2,329.6	0.45	0.10	-0.44
14,634.0	87.56	179.24	12,584.5	-2,423.5	-26.9	2,422.5	0.09	0.05	-0.08
14,728.0	88.12	178.51	12,588.1	-2,517.4	-25.1	2,516.5	0.98	0.60	-0.78
14,822.0	89.97	178.05	12,589.7	-2,611.4	-22.3	2,610.4	2.03	1.97	-0.49
14,915.0	90.87	178.32	12,589.0	-2,704.3	-19.3	2,703.4	1.01	0.97	0.29
15,010.0	90.76	178.52	12,587.6	-2,799.3	-16.7	2,798.4	0.24	-0.12	0.21
15,104.0	90.31	179.95	12,586.7	-2,893.3	-15.4	2,892.4	1.59	-0.48	1.52
15,198.0	89.19	181.36	12,587.2	-2,987.2	-16.5	2,986.4	1.92	-1.19	1.50
15,293.0	89.75	181.18	12,588.0	-3,082.2	-18.6	3,081.3	0.62	0.59	-0.19
15,387.0	88.57	180.01	12,589.4	-3,176.2	-19.6	3,175.2	1.77	-1.26	-1.24
15,482.0	88.21	179.52	12,592.1	-3,271.2	-19.2	3,270.2	0.64	-0.38	-0.52
15,577.0	88.29	179.13	12,595.0	-3,366.1	-18.1	3,365.1	0.42	0.08	-0.41

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: FASCINATOR FED COM #604H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well FASCINATOR FED COM #604H
TVD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
MD Reference: RKB=3372+30 @ 3402.0usft (NABORS 894)
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)
15,670.0	88.99	178.26	12,597.2	-3,459.1	-16.0	3,458.1	1.20	0.75	-0.94
15,764.0	88.96	178.27	12,598.9	-3,553.0	-13.1	3,552.1	0.03	-0.03	0.01
15,858.0	90.00	179.42	12,599.7	-3,647.0	-11.2	3,646.1	1.65	1.11	1.22
15,952.0	90.25	179.21	12,599.5	-3,741.0	-10.1	3,740.1	0.35	0.27	-0.22
16,047.0	90.03	179.34	12,599.3	-3,836.0	-8.9	3,835.1	0.27	-0.23	0.14
16,141.0	90.59	179.62	12,598.8	-3,930.0	-8.1	3,929.1	0.67	0.60	0.30
16,235.0	90.53	180.21	12,597.9	-4,023.9	-7.9	4,023.0	0.63	-0.06	0.63
16,327.0	88.21	179.53	12,598.9	-4,115.9	-7.7	4,115.0	2.63	-2.52	-0.74
16,420.0	87.51	178.89	12,602.3	-4,208.9	-6.4	4,207.9	1.02	-0.75	-0.69
16,514.0	87.59	179.28	12,606.4	-4,302.8	-4.9	4,301.9	0.42	0.09	0.41
16,608.0	88.35	179.94	12,609.7	-4,396.7	-4.3	4,395.8	1.07	0.81	0.70
16,702.0	87.56	180.23	12,613.0	-4,490.6	-4.4	4,489.7	0.90	-0.84	0.31
16,796.0	86.86	180.31	12,617.6	-4,584.5	-4.9	4,583.6	0.75	-0.74	0.09
16,891.0	88.40	180.03	12,621.5	-4,679.4	-5.2	4,678.5	1.65	1.62	-0.29
16,984.0	89.61	179.80	12,623.2	-4,772.4	-5.0	4,771.4	1.32	1.30	-0.25
17,079.0	90.81	180.43	12,622.8	-4,867.4	-5.2	4,866.4	1.43	1.26	0.66
17,173.0	89.55	179.39	12,622.5	-4,961.4	-5.1	4,960.4	1.74	-1.34	-1.11
17,268.0	90.03	179.23	12,622.9	-5,056.4	-3.9	5,055.4	0.53	0.51	-0.17
17,362.0	90.11	179.28	12,622.8	-5,150.4	-2.7	5,149.4	0.10	0.09	0.05
17,457.0	91.04	179.73	12,621.8	-5,245.4	-1.9	5,244.4	1.09	0.98	0.47
17,551.0	91.82	179.13	12,619.5	-5,339.4	-0.9	5,338.3	1.05	0.83	-0.64
17,646.0	92.13	178.84	12,616.2	-5,434.3	0.7	5,433.3	0.45	0.33	-0.31
17,740.0	90.87	178.70	12,613.7	-5,528.2	2.8	5,527.2	1.35	-1.34	-0.15
17,835.0	90.59	178.07	12,612.5	-5,623.2	5.4	5,622.2	0.73	-0.29	-0.66
17,928.0	90.59	178.07	12,611.5	-5,716.1	8.6	5,715.2	0.00	0.00	0.00
18,023.0	90.42	177.88	12,610.7	-5,811.1	11.9	5,810.2	0.27	-0.18	-0.20
18,117.0	89.55	178.40	12,610.7	-5,905.0	15.0	5,904.2	1.08	-0.93	0.55
18,210.0	89.47	178.43	12,611.5	-5,998.0	17.6	5,997.2	0.09	-0.09	0.03
18,305.0	89.64	178.42	12,612.3	-6,092.9	20.2	6,092.2	0.18	0.18	-0.01
18,400.0	89.61	178.33	12,612.9	-6,187.9	22.9	6,187.2	0.10	-0.03	-0.09
18,494.0	89.89	178.62	12,613.3	-6,281.9	25.4	6,281.2	0.43	0.30	0.31
18,587.0	89.13	177.97	12,614.1	-6,374.8	28.1	6,374.2	1.08	-0.82	-0.70
18,681.0	88.52	177.33	12,616.0	-6,468.7	32.0	6,468.1	0.94	-0.65	-0.68
18,775.0	87.03	176.36	12,619.7	-6,562.5	37.1	6,562.0	1.89	-1.59	-1.03
18,868.0	88.60	176.71	12,623.2	-6,655.3	42.8	6,654.8	1.73	1.69	0.38
18,961.0	90.48	178.22	12,624.0	-6,748.2	46.9	6,747.8	2.59	2.02	1.62
19,056.0	90.95	179.05	12,622.8	-6,843.1	49.1	6,842.8	1.00	0.49	0.87
19,149.0	90.17	179.97	12,621.9	-6,936.1	49.9	6,935.8	1.30	-0.84	0.99
19,244.0	90.14	181.39	12,621.6	-7,031.1	48.8	7,030.7	1.50	-0.03	1.49
19,339.0	90.31	181.98	12,621.2	-7,126.1	46.0	7,125.6	0.65	0.18	0.62
19,432.0	89.97	182.81	12,621.0	-7,219.0	42.1	7,218.4	0.96	-0.37	0.89
19,528.0	89.47	183.11	12,621.5	-7,314.8	37.2	7,314.2	0.61	-0.52	0.31
19,621.0	89.16	182.55	12,622.6	-7,407.7	32.6	7,407.0	0.69	-0.33	-0.60

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well FASCINATOR FED COM #604H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Site:	BULLDOG	MD Reference:	RKB=3372+30 @ 3402.0usft (NABORS 894)
Well:	FASCINATOR FED COM #604H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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)
19,716.0	89.61	182.60	12,623.6	-7,502.6	28.3	7,501.8	0.48	0.47	0.05
19,810.0	88.46	182.63	12,625.2	-7,596.5	24.0	7,595.6	1.22	-1.22	0.03
19,904.0	87.42	182.50	12,628.6	-7,690.4	19.8	7,689.3	1.11	-1.11	-0.14
19,999.0	87.11	181.75	12,633.1	-7,785.2	16.3	7,784.0	0.85	-0.33	-0.79
20,093.0	87.79	180.21	12,637.3	-7,879.1	14.7	7,877.9	1.79	0.72	-1.64
20,186.0	89.27	177.85	12,639.7	-7,972.0	16.3	7,970.8	2.99	1.59	-2.54
20,281.0	90.42	177.37	12,639.9	-8,066.9	20.2	8,065.8	1.31	1.21	-0.51
20,375.0	91.46	177.38	12,638.4	-8,160.8	24.5	8,159.8	1.11	1.11	0.01
20,470.0	90.59	177.98	12,636.7	-8,255.7	28.4	8,254.7	1.11	-0.92	0.63
20,565.0	91.88	178.00	12,634.6	-8,350.6	31.7	8,349.7	1.36	1.36	0.02
20,659.0	91.60	178.45	12,631.8	-8,444.6	34.6	8,443.6	0.56	-0.30	0.48
20,754.0	92.41	179.06	12,628.5	-8,539.5	36.7	8,538.6	1.07	0.85	0.64
20,849.0	90.84	178.34	12,625.8	-8,634.4	38.8	8,633.5	1.82	-1.65	-0.76
20,944.0	91.29	178.20	12,624.0	-8,729.3	41.7	8,728.5	0.50	0.47	-0.15
21,037.0	89.83	178.83	12,623.1	-8,822.3	44.1	8,821.5	1.71	-1.57	0.68
21,132.0	89.36	179.69	12,623.8	-8,917.3	45.3	8,916.5	1.03	-0.49	0.91
21,226.0	88.40	179.12	12,625.6	-9,011.3	46.3	9,010.5	1.19	-1.02	-0.61
21,321.0	88.94	179.13	12,627.8	-9,106.2	47.8	9,105.5	0.57	0.57	0.01
21,415.0	88.15	178.51	12,630.2	-9,200.2	49.7	9,199.4	1.07	-0.84	-0.66
21,510.0	89.16	178.33	12,632.4	-9,295.1	52.3	9,294.4	1.08	1.06	-0.19
21,604.0	89.02	178.87	12,633.9	-9,389.1	54.6	9,388.4	0.59	-0.15	0.57
21,698.0	87.14	178.09	12,637.1	-9,483.0	57.1	9,482.3	2.17	-2.00	-0.83
21,793.0	87.76	178.19	12,641.3	-9,577.8	60.2	9,577.2	0.66	0.65	0.11
21,888.0	88.99	178.02	12,644.0	-9,672.8	63.3	9,672.2	1.31	1.29	-0.18
21,982.0	89.38	179.04	12,645.3	-9,766.7	65.7	9,766.2	1.16	0.41	1.09
22,077.0	87.98	178.91	12,647.5	-9,861.7	67.4	9,861.1	1.48	-1.47	-0.14
22,171.0	89.02	178.61	12,650.0	-9,955.6	69.5	9,955.1	1.15	1.11	-0.32
22,254.4	90.20	178.57	12,650.6	-10,039.0	71.5	10,038.5	1.41	1.41	-0.05
LTP @ 22254.4' MD									
22,266.0	90.36	178.56	12,650.5	-10,050.6	71.8	10,050.1	1.41	1.41	-0.05
22,313.0	91.06	178.51	12,649.9	-10,097.6	73.0	10,097.1	1.49	1.49	-0.11
22,363.0	91.06	178.51	12,649.0	-10,147.5	74.3	10,147.1	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
12,197.7	12,186.4	-120.5	-17.2	FTP @ 12197.7' MD
22,254.4	12,650.6	-10,039.0	71.5	LTP @ 22254.4' MD

Checked By: _____ Approved By: _____ Date: _____

		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
From Bottom to Top	22,225	12	5	22,013	65	5	21,854	25	5	21,655	25	5	21,456	25	5
	22,213	23	5	21,994	19	5	21,829	25	5	21,630	25	5	21,431	25	5
	22,190	22	4	21,975	19	4	21,804	22	4	21,605	25	4	21,406	25	4
	22,168	23	4	21,956	19	4	21,782	28	4	21,580	25	4	21,381	25	4
	22,145	22	4	21,937	19	4	21,754		4	21,555	25	4	21,356	25	4
	22,123	23	4	21,918	19	4	21,730	25	4	21,530	24	4	21,331		4
	22,100	22	3	21,899	20	3	21,705	25	3	21,506	25	3			
	22,078		3	21,879		3	21,680		3	21,481		3			
Plug to Plug		82	32	Plug to Plug	72	32	Plug to Plug	84	32	Plug to Plug	87	32	Plug to Plug	83	26
Frac Plug		22,250	Total Shots	Frac Plug	22,028	Total Shots	Frac Plug	21,866	Total Shots	Frac Plug	21,667	Total Shots	Frac Plug	21,464	Total Shots

		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
From Bottom to Top	21,257	74	5	21,058	24	5	20,858	25	5	20,659	25	5	20,460	30	5
	21,232	22	5	21,033	25	5	20,834	25	5	20,634	29	5	20,435	24	5
	21,210	28	4	21,008	25	4	20,809	24	4	20,605	20	4	20,411	25	4
	21,182	25	4	20,983	25	4	20,785	26	4	20,585	25	4	20,386	25	4
	21,157	25	4	20,958	25	4	20,759	25	4	20,560	25	4	20,361	25	4
	21,132	25	4	20,933	25	4	20,734	25	4	20,535	25	4	20,336	27	4
	21,107	25	3	20,908	25	3	20,709	25	3	20,510	20	3	20,309	23	3
	21,082		3	20,883		3	20,684		3	20,490		3	20,286		3
Plug to Plug		87	32	Plug to Plug	87	32	Plug to Plug	86	32	Plug to Plug	87	32	Plug to Plug	87	32
Frac Plug		21,269	Total Shots	Frac Plug	21,070	Total Shots	Frac Plug	20,871	Total Shots	Frac Plug	20,672	Total Shots	Frac Plug	20,473	Total Shots

		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
From Bottom to Top	20,261	25	5	20,062	25	5	19,863	25	5	19,664	25	5	19,465	30	5
	20,236	25	5	20,037	25	5	19,838	25	5	19,639	29	5	19,440	25	5
	20,211	24	4	20,012	25	4	19,813	22	4	19,610	21	4	19,415	25	4
	20,187	25	4	19,987	30	4	19,791	28	4	19,589	25	4	19,390	20	4
	20,162	20	4	19,957	19	4	19,763	24	4	19,564	25	4	19,370	30	4
	20,142	30	4	19,938	25	4	19,739	25	4	19,539	24	4	19,340	25	4
	20,112	25	3	19,913	25	3	19,714	25	3	19,515	20	3	19,315	24	3
	20,087		3	19,888		3	19,689		3	19,495		3	19,291		3
Plug to Plug		87	32	Plug to Plug	88	32	Plug to Plug	89	32	Plug to Plug	87	32	Plug to Plug	87	32
Frac Plug		20,274	Total Shots	Frac Plug	20,075	Total Shots	Frac Plug	19,880	Total Shots	Frac Plug	19,676	Total Shots	Frac Plug	19,477	Total Shots

		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
From Bottom to Top	19,266	25	5	19,067	24	5	18,867	25	5	18,668	29	5	18,464	30	5
	19,241	25	5	19,042	25	5	18,843	25	5	18,643	24	5	18,444	25	5
	19,216	25	4	19,017	25	4	18,818	25	4	18,619	25	4	18,419	24	4
	19,191	25	4	18,992	25	4	18,793	25	4	18,594	25	4	18,395	25	4
	19,166	20	4	18,967	25	4	18,768	25	4	18,569	25	4	18,370	25	4
	19,146	30	4	18,942	25	4	18,743	25	4	18,544	25	4	18,345	25	4
	19,116	25	3	18,917	25	3	18,718	21	3	18,519	25	3	18,320	25	3
	19,091		3	18,892		3	18,697		3	18,494		3	18,295		3
Plug to Plug		87	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	81	32
Frac Plug		19,278	Total Shots	Frac Plug	19,079	Total Shots	Frac Plug	18,880	Total Shots	Frac Plug	18,681	Total Shots	Frac Plug	18,476	Total Shots

		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
From Bottom to Top	18,270	25	5	18,071	25	5	17,872	25	5	17,673	25	5	17,474	25	5
	18,245	25	5	18,046	25	5	17,847	25	5	17,648	25	5	17,449	25	5
	18,220	25	4	18,021	25	4	17,822	25	4	17,623	25	4	17,424	25	4
	18,195	24	4	17,996	25	4	17,797	25	4	17,598	25	4	17,399	25	4
	18,171	25	4	17,971	24	4	17,772	25	4	17,573	25	4	17,374	25	4
	18,146	25	4	17,947	25	4	17,747	24	4	17,548	25	4	17,349	25	4
	18,121	25	3	17,922	25	3	17,723	25	3	17,523	24	3	17,324	21	3
	18,096		3	17,897		3	17,698		3	17,499		3	17,303		3
Plug to Plug		88	32	Plug to Plug	84	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	87	32
Frac Plug		18,283	Total Shots	Frac Plug	18,080	Total Shots	Frac Plug	17,884	Total Shots	Frac Plug	17,685	Total Shots	Frac Plug	17,486	Total Shots

		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
From Bottom to Top	17,275	28	5	17,074	26	5	16,876	30	5	16,677	25	5	16,478	25	5
	17,250	25	5	17,051	25	5	16,852	25	5	16,652	24	5	16,453	25	5
	17,225	25	4	17,026	25	4	16,827	25	4	16,628	28	4	16,428	24	4
	17,200	25	4	17,001	25	4	16,802	25	4	16,600	22	4	16,404	25	4
	17,175	25	4	16,976	25	4	16,777	25	4	16,578	25	4	16,379	25	4
	17,150	25	4	16,951	25	4	16,752	25	4	16,553	25	4	16,354	25	4
	17,125	25	3	16,926	20	3	16,727	25	3	16,528	25	3	16,329	25	3
	17,100		3	16,906		3	16,702		3	16,503		3	16,304		3
Plug to Plug		87	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	90	32	Plug to Plug	87	32
Frac Plug		17,287	Total Shots	Frac Plug	17,088	Total Shots	Frac Plug	16,889	Total Shots	Frac Plug	16,690	Total Shots	Frac Plug	16,491	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	16,279	25	5	16,074	31	5	15,881	25	5	15,682	25	5	15,483	25	5
	16,254	25	5	16,055	25	5	15,856	20	5	15,657	25	5	15,458	25	5
	16,229	25	4	16,030	30	4	15,836	30	4	15,632	25	4	15,433	25	4
	16,204	24	4	16,000	20	4	15,806	25	4	15,607	25	4	15,408	25	4
	16,180	25	4	15,980	24	4	15,781	25	4	15,582	25	4	15,383	23	4
	16,155	25	4	15,956	25	4	15,756	24	4	15,557	25	4	15,360	27	4
	16,130	25	3	15,931	25	3	15,732	25	3	15,532	24	3	15,333	18	3
	16,105		3	15,906		3	15,707		3	15,508		3	15,315		3
	Plug to Plug	88	32	Plug to Plug	86	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	87	32
Frac Plug		16,292	Total Shots	Frac Plug	16,086	Total Shots	Frac Plug	15,893	Total Shots	Frac Plug	15,694	Total Shots	Frac Plug	15,495	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	15,284	31	5	15,084	25	5	14,885	25	5	14,686	25	5	14,487	25	5
	15,259	25	5	15,060	25	5	14,860	24	5	14,661	25	5	14,462	25	5
	15,234	25	4	15,035	25	4	14,836	25	4	14,636	24	4	14,437	25	4
	15,209	25	4	15,010	25	4	14,811	25	4	14,612	25	4	14,412	24	4
	15,184	25	4	14,985	27	4	14,786	25	4	14,587	25	4	14,388	25	4
	15,159	23	4	14,958	23	4	14,761	25	4	14,562	25	4	14,363	25	4
	15,136	27	3	14,935	25	3	14,736	25	3	14,537	25	3	14,338	24	3
	15,109		3	14,910		3	14,711		3	14,512		3	14,314		3
	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	88	32
Frac Plug		15,296	Total Shots	Frac Plug	15,097	Total Shots	Frac Plug	14,898	Total Shots	Frac Plug	14,699	Total Shots	Frac Plug	14,500	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots
	14,288	26	5	14,089	25	5	13,890	25	5	13,691	25	5	13,492	30	5
	14,263	25	5	14,064	25	5	13,865	25	5	13,664	23	5	13,467	25	5
	14,238	25	4	14,039	25	4	13,840	25	4	13,641	25	4	13,442	25	4
	14,213	24	4	14,014	25	4	13,815	25	4	13,616	25	4	13,417	25	4
	14,189	25	4	13,989	24	4	13,790	25	4	13,591	23	4	13,392	25	4
	14,164	25	4	13,965	25	4	13,765	27	4	13,568	27	4	13,367	25	4
	14,139	25	3	13,940	25	3	13,738	22	3	13,541	19	3	13,342	25	3
	14,114		3	13,915		3	13,716		3	13,522		3	13,317		3
	Plug to Plug	88	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	87	32
Frac Plug		14,301	Total Shots	Frac Plug	14,101	Total Shots	Frac Plug	13,902	Total Shots	Frac Plug	13,703	Total Shots	Frac Plug	13,504	Total Shots

From Bottom to Top		Distance Between Perfs	Shots		Distance Between Perfs	Shots		Distance Between Perfs	Shots	Stage 49	Distance Between Perfs	Shots	Stage 50	Distance Between Perfs	Shots
	13,293	24	5	13,093	25	5	12,885	34	5		12720			0	
	13,268	25	5	13,069	25	5	12,869	24	5						
	13,243	25	4	13,044	25	4	12,845	23	4						
	13,218	25	4	13,019	25	4	12,822	27	4						
	13,193	27	4	12,994	25	4	12,795	26	4						
	13,166	23	4	12,969	25	4	12,769	24	4						
	13,143	25	3	12,944	25	3	12,745	25	3						
	13,118		3	12,919		3	12,720		3						
	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	73	32	Plug to Plug	0	0	Plug to Plug	0	0
Frac Plug		13,305	Total Shots	Frac Plug	13,106	Total Shots	Frac Plug	12,895	Total Shots	Frac Plug		Total Shots	Frac Plug		Total Shots

Fascinator Federal Com #604H

<u>Perfs</u>	<u>7 1/2% Acid (Gal)</u>	<u>Sand (#)</u>	<u>Fluid (Gal)</u>
1	1512	400550	323610
2	1512	401897	417018
3	1512	407746	448056
4	1512	380543	410382
5	1512	403367	370524
6	1512	421188	473634
7	1512	409306	452928
8	1512	398615	431088
9	1512	398629	433566
10	1512	397882	421428
11	1512	411303	421302
12	1512	399237	430122
13	1512	395421	409710
14	1512	376586	406014
15	1512	387888	404838
16	1512	395254	396984
17	1512	413609	493206
18	1512	399230	406140
19	1512	400020	417648
20	1512	384380	398328
21	1512	400891	414036
22	1512	394108	408240
23	1512	402254	399756
24	1512	398904	404880
25	1512	390774	406686
26	1512	407409	411264
27	1512	398239	419160
28	1512	404256	327432
29	1512	400373	317562
30	1512	408964	362376
31	1512	401256	407106
32	1512	401978	356706
33	1512	396578	422520
34	1512	402757	338646
35	1512	403850	353598
36	3024	406699	329910
37	1512	412664	340032
38	1512	409315	339444
39	1512	402955	326676
40	1512	397872	323988
41	8027	402040	337134
42	7804	404743	327768
43	7817	405834	328314
44	9041	407598	379722
45	7966	403204	334572
46	7821	393926	328482
47	7739	403527	325038
48	8302	415384	348684
Totals	124997	19,261,003	15,776,544