

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

COONSKIN FEE #601H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

07 January, 2019

Survey Report

Company: NORTHERN DELAWARE BASIN	Local Co-ordinate Reference: Well COONSKIN FEE #601H
Project: LEA COUNTY, NM	TVD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
Site: BULLDOG	MD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
Well: COONSKIN FEE #601H	North Reference: Grid
Wellbore: OWB	Survey Calculation Method: Minimum Curvature
Design: ACTUAL WELLPATH	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 COONSKIN FEE #601H			
Well Position	+N/-S 0.0 usft	Northing: 436,159.30 usft	Latitude: 32° 11' 43.774 N
	+E/-W 0.0 usft	Easting: 796,231.00 usft	Longitude: 103° 22' 32.574 W
Position Uncertainty 3.0 usft	Wellhead Elevation: usft	Ground Level: 3,316.4 usft	

Wellbore OWB			
Magnetics	Model Name	Sample Date	Declination (°)
	WMM2015	6/23/2018	6.78
			Dip Angle (°) 60.04
			Field Strength (nT) 47,823.64625751

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)
	0.0	0.0	0.0
			Direction (°) 177.13

Survey Program		Date 1/7/2019
From (usft)	To (usft)	Survey (Wellbore)
100.0	11,330.0	GYRO-INTERMEDIATE (OWB)
11,491.0	19,582.0	MWD-CURVE/LATERAL (OWB)
		Tool Name
		Standard Keeper 104
		MWD+IFR1+MS
		Description
		Standard Wireline Keeper ver 1.0.4
		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	0.62	101.14	100.0	-0.1	0.5	0.1	0.62	0.62	0.00
125.0	0.59	96.96	125.0	-0.1	0.8	0.2	0.21	-0.12	-16.72
150.0	0.53	97.57	150.0	-0.2	1.0	0.2	0.24	-0.24	2.44
175.0	0.54	104.08	175.0	-0.2	1.3	0.3	0.25	0.04	26.04
200.0	0.47	100.18	200.0	-0.3	1.5	0.3	0.31	-0.28	-15.60
225.0	0.41	105.04	225.0	-0.3	1.7	0.4	0.28	-0.24	19.44
250.0	0.50	114.07	250.0	-0.4	1.9	0.5	0.46	0.36	36.12

Survey Report

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Well: COONSKIN FEE #601H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #601H
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MD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
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	0.50	136.86	275.0	-0.5	2.0	0.6	0.79	0.00	91.16
300.0	0.48	129.12	300.0	-0.6	2.2	0.8	0.28	-0.08	-30.96
325.0	0.56	143.02	325.0	-0.8	2.3	0.9	0.60	0.32	55.60
350.0	0.52	148.48	350.0	-1.0	2.5	1.1	0.26	-0.16	21.84
375.0	0.47	150.41	375.0	-1.2	2.6	1.3	0.21	-0.20	7.72
400.0	0.44	151.64	400.0	-1.4	2.7	1.5	0.13	-0.12	4.92
425.0	0.43	165.85	425.0	-1.5	2.7	1.7	0.43	-0.04	56.84
450.0	0.41	175.32	450.0	-1.7	2.8	1.9	0.29	-0.08	37.88
475.0	0.34	165.94	475.0	-1.9	2.8	2.0	0.37	-0.28	-37.52
500.0	0.45	178.42	500.0	-2.1	2.8	2.2	0.56	0.44	49.92
525.0	0.48	184.40	525.0	-2.3	2.8	2.4	0.23	0.12	23.92
550.0	0.68	174.17	550.0	-2.5	2.8	2.6	0.90	0.80	-40.92
575.0	0.70	175.80	575.0	-2.8	2.8	2.9	0.11	0.08	6.52
600.0	0.73	184.76	600.0	-3.1	2.8	3.3	0.46	0.12	35.84
625.0	0.72	184.39	625.0	-3.4	2.8	3.6	0.04	-0.04	-1.48
650.0	0.88	190.07	650.0	-3.8	2.8	3.9	0.71	0.64	22.72
675.0	1.00	194.48	675.0	-4.2	2.7	4.3	0.56	0.48	17.64
700.0	1.01	193.48	700.0	-4.6	2.6	4.7	0.08	0.04	-4.00
725.0	1.00	192.50	725.0	-5.0	2.5	5.1	0.08	-0.04	-3.92
750.0	1.03	187.17	750.0	-5.5	2.4	5.6	0.40	0.12	-21.32
775.0	0.91	176.15	775.0	-5.9	2.4	6.0	0.89	-0.48	-44.08
800.0	0.87	176.38	800.0	-6.3	2.4	6.4	0.16	-0.16	0.92
825.0	0.93	178.74	824.9	-6.7	2.4	6.8	0.28	0.24	9.44
850.0	1.00	174.88	849.9	-7.1	2.5	7.2	0.38	0.28	-15.44
875.0	0.93	172.72	874.9	-7.5	2.5	7.6	0.32	-0.28	-8.64
900.0	0.83	171.98	899.9	-7.9	2.6	8.0	0.40	-0.40	-2.96
925.0	0.81	171.07	924.9	-8.2	2.6	8.4	0.10	-0.08	-3.64
950.0	0.79	159.67	949.9	-8.6	2.7	8.7	0.64	-0.08	-45.60
975.0	0.79	139.70	974.9	-8.9	2.9	9.0	1.10	0.00	-79.88
1,000.0	0.76	82.03	999.9	-9.0	3.1	9.1	2.99	-0.12	-230.68
1,025.0	0.90	62.00	1,024.9	-8.9	3.5	9.0	1.28	0.56	-80.12
1,050.0	1.29	29.75	1,049.9	-8.5	3.8	8.7	2.86	1.56	-129.00
1,075.0	1.76	12.26	1,074.9	-7.9	4.0	8.1	2.63	1.88	-69.96
1,100.0	2.23	7.26	1,099.9	-7.0	4.2	7.2	2.00	1.88	-20.00
1,125.0	2.36	1.65	1,124.9	-6.1	4.2	6.3	1.04	0.52	-22.44
1,150.0	2.55	359.72	1,149.9	-5.0	4.2	5.2	0.83	0.76	-7.72
1,175.0	2.62	359.57	1,174.8	-3.9	4.2	4.1	0.28	0.28	-0.60
1,200.0	2.49	1.47	1,199.8	-2.7	4.2	2.9	0.62	-0.52	7.60
1,225.0	1.97	6.20	1,224.8	-1.8	4.3	2.0	2.20	-2.08	18.92
1,250.0	1.53	12.88	1,249.8	-1.0	4.4	1.2	1.94	-1.76	26.72
1,275.0	0.76	39.40	1,274.8	-0.6	4.6	0.8	3.66	-3.08	106.08
1,300.0	0.60	38.77	1,299.8	-0.3	4.8	0.6	0.64	-0.64	-2.52

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RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

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Grid

Minimum Curvature

EDM_Users

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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)
1,325.0	0.57	39.90	1,324.8	-0.1	5.0	0.4	0.13	-0.12	4.52
1,350.0	0.55	46.10	1,349.8	0.0	5.1	0.2	0.26	-0.08	24.80
1,375.0	0.50	60.57	1,374.8	0.2	5.3	0.1	0.56	-0.20	57.88
1,400.0	0.58	55.96	1,399.8	0.3	5.5	0.0	0.36	0.32	-18.44
1,425.0	0.63	48.93	1,424.8	0.5	5.7	-0.2	0.36	0.20	-28.12
1,450.0	0.65	57.71	1,449.8	0.6	5.9	-0.3	0.40	0.08	35.12
1,475.0	0.75	66.27	1,474.8	0.8	6.2	-0.5	0.58	0.40	34.24
1,500.0	1.55	85.77	1,499.8	0.9	6.7	-0.5	3.52	3.20	78.00
1,525.0	1.92	93.30	1,524.7	0.9	7.4	-0.5	1.74	1.48	30.12
1,550.0	3.43	101.53	1,549.7	0.7	8.6	-0.3	6.22	6.04	32.92
1,575.0	4.14	102.50	1,574.7	0.3	10.2	0.2	2.85	2.84	3.88
1,600.0	5.16	105.11	1,599.6	-0.1	12.2	0.8	4.17	4.08	10.44
1,625.0	6.01	107.60	1,624.5	-0.8	14.5	1.6	3.53	3.40	9.96
1,650.0	6.57	109.58	1,649.3	-1.7	17.1	2.6	2.40	2.24	7.92
1,675.0	6.78	110.63	1,674.1	-2.7	19.8	3.7	0.97	0.84	4.20
1,700.0	6.81	110.08	1,699.0	-3.7	22.6	4.9	0.29	0.12	-2.20
1,725.0	6.84	111.14	1,723.8	-4.8	25.4	6.0	0.52	0.12	4.24
1,750.0	6.82	110.30	1,748.6	-5.8	28.2	7.2	0.41	-0.08	-3.36
1,775.0	6.85	110.53	1,773.4	-6.9	31.0	8.4	0.16	0.12	0.92
1,800.0	6.87	110.69	1,798.3	-7.9	33.8	9.6	0.11	0.08	0.64
1,825.0	6.72	110.44	1,823.1	-9.0	36.5	10.8	0.61	-0.60	-1.00
1,850.0	6.22	108.57	1,847.9	-9.9	39.2	11.8	2.17	-2.00	-7.48
1,875.0	6.03	106.99	1,872.8	-10.7	41.7	12.8	1.02	-0.76	-6.32
1,900.0	5.64	101.19	1,897.6	-11.3	44.2	13.5	2.83	-1.56	-23.20
1,925.0	5.30	104.18	1,922.5	-11.9	46.5	14.2	1.77	-1.36	11.96
1,950.0	5.15	102.65	1,947.4	-12.4	48.7	14.8	0.82	-0.60	-6.12
1,975.0	5.23	102.27	1,972.3	-12.9	50.9	15.4	0.35	0.32	-1.52
2,000.0	5.22	101.99	1,997.2	-13.4	53.2	16.0	0.11	-0.04	-1.12
2,025.0	5.32	102.92	2,022.1	-13.9	55.4	16.6	0.53	0.40	3.72
2,050.0	5.37	102.18	2,047.0	-14.4	57.7	17.2	0.34	0.20	-2.96
2,075.0	5.46	100.81	2,071.9	-14.8	60.0	17.8	0.63	0.36	-5.48
2,100.0	5.48	100.79	2,096.8	-15.3	62.3	18.4	0.08	0.08	-0.08
2,125.0	5.67	99.61	2,121.7	-15.7	64.7	18.9	0.89	0.76	-4.72
2,150.0	5.74	99.53	2,146.5	-16.1	67.2	19.5	0.28	0.28	-0.32
2,175.0	5.80	99.48	2,171.4	-16.5	69.6	20.0	0.24	0.24	-0.20
2,200.0	5.71	99.21	2,196.3	-16.9	72.1	20.5	0.38	-0.36	-1.08
2,225.0	5.48	97.91	2,221.2	-17.3	74.5	21.0	1.05	-0.92	-5.20
2,250.0	5.27	96.97	2,246.1	-17.6	76.8	21.4	0.91	-0.84	-3.76
2,275.0	5.22	95.35	2,271.0	-17.9	79.1	21.8	0.63	-0.20	-6.48
2,300.0	5.26	96.47	2,295.8	-18.1	81.4	22.1	0.44	0.16	4.48
2,325.0	5.22	96.13	2,320.7	-18.3	83.7	22.5	0.20	-0.16	-1.36
2,350.0	5.28	95.87	2,345.6	-18.6	85.9	22.8	0.26	0.24	-1.04

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Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #601H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

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Database:

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Grid

Minimum Curvature

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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	5.32	95.86	2,370.5	-18.8	88.2	23.2	0.16	0.16	-0.04
2,400.0	5.34	95.27	2,395.4	-19.0	90.5	23.5	0.23	0.08	-2.36
2,425.0	5.42	95.00	2,420.3	-19.2	92.9	23.9	0.34	0.32	-1.08
2,450.0	5.42	94.32	2,445.2	-19.4	95.2	24.2	0.26	0.00	-2.72
2,475.0	5.49	94.64	2,470.1	-19.6	97.6	24.5	0.31	0.28	1.28
2,500.0	5.41	94.29	2,495.0	-19.8	100.0	24.8	0.35	-0.32	-1.40
2,525.0	4.72	91.34	2,519.9	-19.9	102.2	25.0	2.95	-2.76	-11.80
2,550.0	4.70	91.54	2,544.8	-20.0	104.2	25.2	0.10	-0.08	0.80
2,575.0	4.74	92.01	2,569.7	-20.0	106.3	25.3	0.22	0.16	1.88
2,600.0	4.68	90.91	2,594.6	-20.1	108.3	25.5	0.43	-0.24	-4.40
2,625.0	4.83	91.09	2,619.5	-20.1	110.4	25.6	0.60	0.60	0.72
2,650.0	4.87	91.25	2,644.4	-20.2	112.5	25.8	0.17	0.16	0.64
2,675.0	5.00	91.90	2,669.4	-20.2	114.7	25.9	0.57	0.52	2.60
2,700.0	5.20	91.62	2,694.3	-20.3	116.9	26.1	0.81	0.80	-1.12
2,725.0	5.26	91.68	2,719.2	-20.4	119.2	26.3	0.24	0.24	0.24
2,750.0	5.23	91.93	2,744.0	-20.4	121.4	26.5	0.15	-0.12	1.00
2,775.0	5.20	93.23	2,768.9	-20.5	123.7	26.7	0.49	-0.12	5.20
2,800.0	4.69	103.23	2,793.9	-20.8	125.8	27.1	4.00	-2.04	40.00
2,825.0	4.72	104.29	2,818.8	-21.3	127.8	27.7	0.37	0.12	4.24
2,850.0	4.69	104.95	2,843.7	-21.8	129.8	28.3	0.25	-0.12	2.64
2,875.0	4.74	104.70	2,868.6	-22.4	131.8	28.9	0.22	0.20	-1.00
2,900.0	4.76	105.01	2,893.5	-22.9	133.8	29.6	0.13	0.08	1.24
2,925.0	4.74	105.38	2,918.4	-23.4	135.8	30.2	0.15	-0.08	1.48
2,950.0	4.73	105.09	2,943.3	-24.0	137.8	30.8	0.10	-0.04	-1.16
2,975.0	4.77	104.81	2,968.3	-24.5	139.8	31.5	0.18	0.16	-1.12
3,000.0	4.86	105.66	2,993.2	-25.1	141.8	32.1	0.46	0.36	3.40
3,025.0	4.99	104.07	3,018.1	-25.6	143.9	32.8	0.75	0.52	-6.36
3,050.0	5.14	103.85	3,043.0	-26.1	146.0	33.4	0.61	0.60	-0.88
3,075.0	5.12	102.63	3,067.9	-26.7	148.2	34.0	0.44	-0.08	-4.88
3,100.0	5.20	102.15	3,092.8	-27.1	150.4	34.6	0.36	0.32	-1.92
3,125.0	5.19	102.79	3,117.7	-27.6	152.6	35.2	0.24	-0.04	2.56
3,150.0	5.33	103.08	3,142.6	-28.1	154.9	35.9	0.57	0.56	1.16
3,175.0	4.23	106.88	3,167.5	-28.7	156.9	36.5	4.58	-4.40	15.20
3,200.0	4.06	107.38	3,192.4	-29.2	158.6	37.1	0.70	-0.68	2.00
3,225.0	4.09	107.61	3,217.4	-29.7	160.3	37.7	0.14	0.12	0.92
3,250.0	4.02	107.31	3,242.3	-30.3	162.0	38.3	0.29	-0.28	-1.20
3,275.0	4.02	106.76	3,267.2	-30.8	163.6	38.9	0.15	0.00	-2.20
3,300.0	4.03	106.05	3,292.2	-31.3	165.3	39.5	0.20	0.04	-2.84
3,325.0	4.03	107.93	3,317.1	-31.8	167.0	40.1	0.53	0.00	7.52
3,350.0	3.98	107.23	3,342.0	-32.3	168.7	40.7	0.28	-0.20	-2.80
3,375.0	3.82	107.35	3,367.0	-32.8	170.3	41.3	0.64	-0.64	0.48
3,400.0	3.72	108.81	3,391.9	-33.3	171.9	41.9	0.55	-0.40	5.84

Survey Report

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Project: LEA COUNTY, NM
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Well: COONSKIN FEE #601H
Wellbore: OWB
Design: ACTUAL WELLPATH

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TVD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
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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	3.74	107.76	3,416.9	-33.8	173.4	42.5	0.28	0.08	-4.20
3,450.0	3.67	108.15	3,441.8	-34.3	174.9	43.1	0.30	-0.28	1.56
3,475.0	3.65	108.46	3,466.8	-34.8	176.5	43.6	0.11	-0.08	1.24
3,500.0	3.64	106.33	3,491.7	-35.3	178.0	44.2	0.54	-0.04	-8.52
3,525.0	3.64	105.62	3,516.7	-35.8	179.5	44.7	0.18	0.00	-2.84
3,550.0	3.68	104.97	3,541.6	-36.2	181.0	45.2	0.23	0.16	-2.60
3,575.0	3.79	103.80	3,566.6	-36.6	182.6	45.7	0.54	0.44	-4.68
3,600.0	4.47	102.96	3,591.5	-37.0	184.4	46.2	2.73	2.72	-3.36
3,625.0	5.25	84.68	3,616.4	-37.1	186.5	46.4	6.90	3.12	-73.12
3,650.0	5.47	83.06	3,641.3	-36.9	188.8	46.3	1.07	0.88	-6.48
3,675.0	5.55	82.73	3,666.2	-36.6	191.2	46.1	0.34	0.32	-1.32
3,700.0	5.55	82.95	3,691.1	-36.3	193.6	45.9	0.09	0.00	0.88
3,725.0	5.68	84.01	3,716.0	-36.0	196.0	45.7	0.67	0.52	4.24
3,750.0	5.56	84.14	3,740.8	-35.7	198.4	45.6	0.48	-0.48	0.52
3,775.0	5.75	87.52	3,765.7	-35.6	200.9	45.6	1.53	0.76	13.52
3,800.0	5.78	93.75	3,790.6	-35.6	203.4	45.7	2.50	0.12	24.92
3,825.0	5.91	96.50	3,815.5	-35.8	205.9	46.1	1.23	0.52	11.00
3,850.0	5.90	98.60	3,840.3	-36.1	208.5	46.5	0.87	-0.04	8.40
3,875.0	5.91	99.70	3,865.2	-36.6	211.0	47.1	0.45	0.04	4.40
3,900.0	5.92	100.40	3,890.1	-37.0	213.6	47.6	0.29	0.04	2.80
3,925.0	5.90	103.71	3,914.9	-37.5	216.1	48.3	1.37	-0.08	13.24
3,950.0	6.07	104.86	3,939.8	-38.2	218.6	49.1	0.83	0.68	4.60
3,975.0	6.02	108.70	3,964.6	-38.9	221.1	50.0	1.63	-0.20	15.36
4,000.0	6.20	109.13	3,989.5	-39.8	223.6	50.9	0.74	0.72	1.72
4,025.0	6.04	109.63	4,014.4	-40.7	226.1	52.0	0.67	-0.64	2.00
4,050.0	5.99	110.84	4,039.2	-41.6	228.6	53.0	0.55	-0.20	4.84
4,075.0	5.92	111.73	4,064.1	-42.5	231.0	54.0	0.46	-0.28	3.56
4,100.0	6.26	111.34	4,089.0	-43.5	233.5	55.1	1.37	1.36	-1.56
4,125.0	4.93	115.71	4,113.8	-44.5	235.7	56.2	5.58	-5.32	17.48
4,150.0	4.13	116.81	4,138.8	-45.3	237.5	57.2	3.22	-3.20	4.40
4,175.0	4.06	116.60	4,163.7	-46.2	239.1	58.1	0.29	-0.28	-0.84
4,200.0	3.06	116.63	4,188.6	-46.8	240.5	58.8	4.00	-4.00	0.12
4,225.0	2.76	113.42	4,213.6	-47.4	241.6	59.4	1.37	-1.20	-12.84
4,250.0	2.19	107.24	4,238.6	-47.8	242.6	59.8	2.51	-2.28	-24.72
4,275.0	2.12	101.58	4,263.6	-48.0	243.5	60.1	0.90	-0.28	-22.64
4,300.0	2.11	91.38	4,288.6	-48.1	244.5	60.3	1.50	-0.04	-40.80
4,325.0	2.22	78.94	4,313.5	-48.0	245.4	60.2	1.93	0.44	-49.76
4,350.0	2.29	69.54	4,338.5	-47.8	246.3	60.0	1.50	0.28	-37.60
4,375.0	2.39	64.05	4,363.5	-47.4	247.3	59.7	0.98	0.40	-21.96
4,400.0	2.49	62.90	4,388.5	-46.9	248.2	59.2	0.45	0.40	-4.60
4,425.0	2.56	58.49	4,413.4	-46.3	249.2	58.7	0.83	0.28	-17.64
4,450.0	2.91	59.21	4,438.4	-45.7	250.2	58.2	1.41	1.40	2.88

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #601H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #601H
TVD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
MD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
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	3.35	61.77	4,463.4	-45.1	251.4	57.6	1.85	1.76	10.24
4,500.0	3.62	66.28	4,488.3	-44.4	252.8	57.0	1.54	1.08	18.04
4,525.0	3.84	66.21	4,513.3	-43.7	254.2	56.4	0.88	0.88	-0.28
4,550.0	3.93	67.16	4,538.2	-43.1	255.8	55.8	0.44	0.36	3.80
4,575.0	3.67	67.89	4,563.2	-42.4	257.3	55.2	1.06	-1.04	2.92
4,600.0	3.13	73.98	4,588.1	-41.9	258.7	54.8	2.60	-2.16	24.36
4,625.0	3.04	75.78	4,613.1	-41.6	260.0	54.5	0.53	-0.36	7.20
4,650.0	2.62	81.65	4,638.1	-41.3	261.2	54.4	2.04	-1.68	23.48
4,675.0	1.87	107.66	4,663.0	-41.4	262.2	54.4	4.99	-3.00	104.04
4,700.0	1.77	156.93	4,688.0	-41.9	262.7	54.9	6.08	-0.40	197.08
4,725.0	1.71	165.30	4,713.0	-42.6	263.0	55.7	1.04	-0.24	33.48
4,750.0	1.75	183.90	4,738.0	-43.3	263.0	56.4	2.24	0.16	74.40
4,775.0	2.19	215.59	4,763.0	-44.1	262.7	57.2	4.62	1.76	126.76
4,800.0	2.63	229.16	4,788.0	-44.9	262.0	57.9	2.87	1.76	54.28
4,825.0	3.39	237.60	4,812.9	-45.6	261.0	58.6	3.51	3.04	33.76
4,850.0	3.61	238.99	4,837.9	-46.4	259.7	59.4	0.94	0.88	5.56
4,875.0	3.68	242.82	4,862.8	-47.2	258.3	60.1	1.01	0.28	15.32
4,900.0	3.82	241.94	4,887.8	-48.0	256.8	60.7	0.61	0.56	-3.52
4,925.0	3.71	241.98	4,912.7	-48.7	255.4	61.4	0.44	-0.44	0.16
4,950.0	3.57	244.56	4,937.7	-49.4	254.0	62.1	0.88	-0.56	10.32
4,975.0	1.70	235.17	4,962.7	-50.0	253.0	62.6	7.65	-7.48	-37.56
5,000.0	1.32	232.32	4,987.6	-50.4	252.4	62.9	1.55	-1.52	-11.40
5,025.0	1.19	235.95	5,012.6	-50.7	252.0	63.2	0.61	-0.52	14.52
5,050.0	1.10	239.13	5,037.6	-51.0	251.6	63.5	0.44	-0.36	12.72
5,075.0	1.06	235.39	5,062.6	-51.2	251.2	63.7	0.32	-0.16	-14.96
5,100.0	0.99	237.22	5,087.6	-51.5	250.8	63.9	0.31	-0.28	7.32
5,125.0	1.01	238.58	5,112.6	-51.7	250.4	64.2	0.12	0.08	5.44
5,150.0	0.91	238.88	5,137.6	-51.9	250.1	64.4	0.40	-0.40	1.20
5,175.0	0.73	270.84	5,162.6	-52.0	249.7	64.4	1.93	-0.72	127.84
5,200.0	0.88	244.51	5,187.6	-52.1	249.4	64.5	1.58	0.60	-105.32
5,225.0	0.82	242.56	5,212.6	-52.3	249.1	64.7	0.27	-0.24	-7.80
5,250.0	0.80	245.18	5,237.6	-52.4	248.8	64.8	0.17	-0.08	10.48
5,275.0	0.54	272.49	5,262.6	-52.5	248.5	64.8	1.62	-1.04	109.24
5,300.0	0.45	300.75	5,287.6	-52.4	248.3	64.8	1.03	-0.36	113.04
5,325.0	0.89	338.91	5,312.6	-52.2	248.1	64.5	2.42	1.76	152.64
5,350.0	0.96	333.65	5,337.6	-51.8	248.0	64.2	0.44	0.28	-21.04
5,375.0	0.95	340.63	5,362.6	-51.4	247.8	63.8	0.47	-0.04	27.92
5,400.0	0.96	337.51	5,387.6	-51.1	247.7	63.4	0.21	0.04	-12.48
5,425.0	0.95	338.52	5,412.6	-50.7	247.5	63.0	0.08	-0.04	4.04
5,450.0	1.03	337.25	5,437.6	-50.3	247.3	62.6	0.33	0.32	-5.08
5,475.0	0.80	340.39	5,462.6	-49.9	247.2	62.2	0.94	-0.92	12.56
5,500.0	1.01	337.53	5,487.6	-49.5	247.0	61.8	0.86	0.84	-11.44

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #601H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #601H

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

Grid

Minimum Curvature

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	1.02	339.23	5,512.6	-49.1	246.9	61.4	0.13	0.04	6.80
5,550.0	1.07	338.57	5,537.6	-48.7	246.7	61.0	0.21	0.20	-2.64
5,575.0	1.07	337.34	5,562.6	-48.3	246.5	60.5	0.09	0.00	-4.92
5,600.0	1.06	331.65	5,587.6	-47.8	246.3	60.1	0.42	-0.04	-22.76
5,625.0	1.05	334.98	5,612.6	-47.4	246.1	59.7	0.25	-0.04	13.32
5,650.0	1.05	337.33	5,637.6	-47.0	246.0	59.3	0.17	0.00	9.40
5,675.0	1.09	338.08	5,662.5	-46.6	245.8	58.8	0.17	0.16	3.00
5,700.0	1.06	337.79	5,687.5	-46.1	245.6	58.4	0.12	-0.12	-1.16
5,725.0	1.08	336.98	5,712.5	-45.7	245.4	57.9	0.10	0.08	-3.24
5,750.0	1.06	338.99	5,737.5	-45.3	245.2	57.5	0.17	-0.08	8.04
5,775.0	1.06	337.81	5,762.5	-44.9	245.1	57.1	0.09	0.00	-4.72
5,800.0	1.07	340.28	5,787.5	-44.4	244.9	56.6	0.19	0.04	9.88
5,825.0	0.97	333.82	5,812.5	-44.0	244.7	56.2	0.61	-0.40	-25.84
5,850.0	0.87	341.02	5,837.5	-43.6	244.6	55.8	0.61	-0.40	28.80
5,875.0	0.89	339.81	5,862.5	-43.3	244.5	55.5	0.11	0.08	-4.84
5,900.0	0.76	341.56	5,887.5	-42.9	244.3	55.1	0.53	-0.52	7.00
5,925.0	0.83	343.65	5,912.5	-42.6	244.2	54.8	0.30	0.28	8.36
5,950.0	0.75	347.10	5,937.5	-42.3	244.1	54.4	0.37	-0.32	13.80
5,975.0	0.77	347.89	5,962.5	-42.0	244.1	54.1	0.09	0.08	3.16
6,000.0	0.75	345.93	5,987.5	-41.6	244.0	53.8	0.13	-0.08	-7.84
6,025.0	0.71	350.81	6,012.5	-41.3	243.9	53.5	0.30	-0.16	19.52
6,050.0	0.78	356.16	6,037.5	-41.0	243.9	53.1	0.39	0.28	21.40
6,075.0	0.63	14.52	6,062.5	-40.7	243.9	52.8	1.08	-0.60	73.44
6,100.0	0.72	34.28	6,087.5	-40.4	244.0	52.6	0.99	0.36	79.04
6,125.0	0.72	55.03	6,112.5	-40.2	244.3	52.4	1.04	0.00	83.00
6,150.0	0.76	57.45	6,137.5	-40.0	244.5	52.2	0.20	0.16	9.68
6,175.0	0.72	56.40	6,162.5	-39.9	244.8	52.0	0.17	-0.16	-4.20
6,200.0	0.74	55.64	6,187.5	-39.7	245.1	51.9	0.09	0.08	-3.04
6,225.0	0.75	60.40	6,212.5	-39.5	245.3	51.7	0.25	0.04	19.04
6,250.0	0.81	60.79	6,237.5	-39.3	245.6	51.6	0.24	0.24	1.56
6,275.0	0.82	56.95	6,262.5	-39.2	245.9	51.4	0.22	0.04	-15.36
6,300.0	0.88	59.59	6,287.5	-39.0	246.3	51.2	0.29	0.24	10.56
6,325.0	0.87	59.79	6,312.5	-38.8	246.6	51.0	0.04	-0.04	0.80
6,350.0	0.84	63.55	6,337.5	-38.6	246.9	50.9	0.25	-0.12	15.04
6,375.0	0.86	68.19	6,362.5	-38.4	247.2	50.8	0.29	0.08	18.56
6,400.0	0.80	64.33	6,387.5	-38.3	247.6	50.6	0.33	-0.24	-15.44
6,425.0	0.85	63.02	6,412.5	-38.1	247.9	50.5	0.21	0.20	-5.24
6,450.0	0.88	67.75	6,437.5	-38.0	248.2	50.3	0.31	0.12	18.92
6,475.0	0.86	64.97	6,462.5	-37.8	248.6	50.2	0.19	-0.08	-11.12
6,500.0	0.81	62.69	6,487.5	-37.7	248.9	50.1	0.24	-0.20	-9.12
6,525.0	0.83	61.67	6,512.5	-37.5	249.2	49.9	0.10	0.08	-4.08
6,550.0	0.79	65.51	6,537.5	-37.3	249.6	49.8	0.27	-0.16	15.36

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #801H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #801H

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

Grid

Minimum Curvature

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	0.86	63.35	6,562.5	-37.2	249.9	49.6	0.31	0.28	-8.64
6,600.0	0.84	64.58	6,587.4	-37.0	250.2	49.5	0.11	-0.08	4.92
6,625.0	0.82	64.43	6,612.4	-36.9	250.5	49.3	0.08	-0.08	-0.60
6,650.0	0.89	70.09	6,637.4	-36.7	250.9	49.2	0.44	0.28	22.64
6,675.0	0.87	64.80	6,662.4	-36.6	251.2	49.1	0.33	-0.08	-21.16
6,700.0	0.60	68.23	6,687.4	-36.4	251.5	49.0	1.09	-1.08	13.72
6,725.0	0.29	93.04	6,712.4	-36.4	251.7	48.9	1.43	-1.24	99.24
6,750.0	0.38	168.60	6,737.4	-36.5	251.8	49.0	1.67	0.36	302.24
6,775.0	0.49	185.68	6,762.4	-36.7	251.8	49.2	0.68	0.44	68.32
6,800.0	0.61	183.07	6,787.4	-36.9	251.8	49.5	0.49	0.48	-10.44
6,825.0	0.67	192.47	6,812.4	-37.2	251.7	49.7	0.48	0.24	37.60
6,850.0	0.72	182.19	6,837.4	-37.5	251.7	50.0	0.54	0.20	-41.12
6,875.0	0.60	190.77	6,862.4	-37.8	251.7	50.3	0.62	-0.48	34.32
6,900.0	0.72	188.65	6,887.4	-38.1	251.6	50.6	0.49	0.48	-8.48
6,925.0	0.72	188.62	6,912.4	-38.4	251.6	50.9	0.00	0.00	-0.12
6,950.0	0.71	190.19	6,937.4	-38.7	251.5	51.2	0.09	-0.04	6.28
6,975.0	0.76	186.68	6,962.4	-39.0	251.5	51.5	0.27	0.20	-14.04
7,000.0	0.73	186.93	6,987.4	-39.3	251.4	51.8	0.12	-0.12	1.00
7,025.0	0.69	183.05	7,012.4	-39.6	251.4	52.1	0.25	-0.16	-15.52
7,050.0	0.70	181.58	7,037.4	-39.9	251.4	52.4	0.08	0.04	-5.88
7,075.0	0.71	183.56	7,062.4	-40.2	251.4	52.8	0.11	0.04	7.92
7,100.0	0.73	181.20	7,087.4	-40.5	251.4	53.1	0.14	0.08	-9.44
7,125.0	0.70	187.23	7,112.4	-40.9	251.4	53.4	0.32	-0.12	24.12
7,150.0	0.67	185.10	7,137.4	-41.2	251.3	53.7	0.16	-0.12	-8.52
7,175.0	0.75	184.10	7,162.4	-41.5	251.3	54.0	0.32	0.32	-4.00
7,200.0	0.72	184.23	7,187.4	-41.8	251.3	54.3	0.12	-0.12	0.52
7,225.0	0.71	185.43	7,212.4	-42.1	251.2	54.6	0.07	-0.04	4.80
7,250.0	0.78	186.08	7,237.4	-42.4	251.2	54.9	0.28	0.28	2.60
7,275.0	0.82	182.26	7,262.4	-42.8	251.2	55.3	0.27	0.16	-15.28
7,300.0	0.69	180.33	7,287.4	-43.1	251.2	55.6	0.53	-0.52	-7.72
7,325.0	0.71	182.57	7,312.4	-43.4	251.2	55.9	0.14	0.08	8.96
7,350.0	0.67	182.56	7,337.4	-43.7	251.2	56.2	0.16	-0.16	-0.04
7,375.0	0.69	182.25	7,362.4	-44.0	251.2	56.5	0.08	0.08	-1.24
7,400.0	0.76	182.28	7,387.4	-44.3	251.1	56.8	0.28	0.28	0.12
7,425.0	0.56	176.15	7,412.4	-44.6	251.1	57.1	0.85	-0.80	-24.52
7,450.0	0.62	172.14	7,437.4	-44.9	251.2	57.4	0.29	0.24	-16.04
7,475.0	0.54	172.38	7,462.4	-45.1	251.2	57.6	0.32	-0.32	0.96
7,500.0	0.66	177.13	7,487.4	-45.4	251.2	57.9	0.52	0.48	19.00
7,525.0	0.55	179.42	7,512.4	-45.6	251.2	58.1	0.45	-0.44	9.16
7,550.0	0.54	172.92	7,537.4	-45.9	251.2	58.4	0.25	-0.04	-26.00
7,575.0	0.58	172.94	7,562.4	-46.1	251.3	58.6	0.16	0.16	0.08
7,600.0	0.57	176.81	7,587.4	-46.4	251.3	58.9	0.16	-0.04	15.48

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #601H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #601H
TVD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
MD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
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	0.51	162.72	7,612.4	-46.6	251.3	59.1	0.58	-0.24	-56.36
7,650.0	0.49	165.30	7,637.4	-46.8	251.4	59.3	0.12	-0.08	10.32
7,675.0	0.52	171.28	7,662.4	-47.0	251.4	59.5	0.24	0.12	23.92
7,700.0	0.52	164.90	7,687.4	-47.2	251.5	59.8	0.23	0.00	-25.52
7,725.0	0.58	175.27	7,712.4	-47.5	251.5	60.0	0.46	0.24	41.48
7,750.0	0.49	168.20	7,737.4	-47.7	251.6	60.2	0.45	-0.36	-28.28
7,775.0	0.51	156.36	7,762.4	-47.9	251.6	60.4	0.42	0.08	-47.36
7,800.0	0.54	168.67	7,787.4	-48.1	251.7	60.7	0.47	0.12	49.24
7,825.0	0.48	163.12	7,812.4	-48.3	251.8	60.9	0.31	-0.24	-22.20
7,850.0	0.53	161.85	7,837.4	-48.6	251.8	61.1	0.20	0.20	-5.08
7,875.0	0.52	154.70	7,862.4	-48.8	251.9	61.3	0.26	-0.04	-28.60
7,900.0	0.53	160.23	7,887.4	-49.0	252.0	61.5	0.21	0.04	22.12
7,925.0	0.57	154.95	7,912.4	-49.2	252.1	61.7	0.26	0.16	-21.12
7,950.0	0.49	151.12	7,937.4	-49.4	252.2	62.0	0.35	-0.32	-15.32
7,975.0	0.61	148.92	7,962.4	-49.6	252.3	62.2	0.49	0.48	-8.80
8,000.0	0.61	150.68	7,987.4	-49.8	252.4	62.4	0.07	0.00	7.04
8,025.0	0.59	155.00	8,012.4	-50.1	252.6	62.6	0.20	-0.08	17.28
8,050.0	0.58	143.14	8,037.4	-50.3	252.7	62.9	0.49	-0.04	-47.44
8,075.0	0.64	142.27	8,062.4	-50.5	252.9	63.1	0.24	0.24	-3.48
8,100.0	0.60	134.03	8,087.4	-50.7	253.0	63.3	0.39	-0.16	-32.96
8,125.0	0.73	144.86	8,112.4	-50.9	253.2	63.5	0.72	0.52	43.32
8,150.0	0.68	130.28	8,137.4	-51.2	253.4	63.8	0.74	-0.20	-58.32
8,175.0	0.70	141.25	8,162.3	-51.4	253.6	64.0	0.53	0.08	43.88
8,200.0	0.69	133.95	8,187.3	-51.6	253.8	64.2	0.36	-0.04	-29.20
8,225.0	0.66	126.58	8,212.3	-51.8	254.1	64.4	0.37	-0.12	-29.48
8,250.0	0.69	123.48	8,237.3	-52.0	254.3	64.6	0.19	0.12	-12.40
8,275.0	0.66	121.61	8,262.3	-52.1	254.5	64.8	0.15	-0.12	-7.48
8,300.0	0.60	130.70	8,287.3	-52.3	254.8	64.9	0.47	-0.24	36.36
8,325.0	0.67	123.13	8,312.3	-52.4	255.0	65.1	0.44	0.28	-30.28
8,350.0	0.61	119.45	8,337.3	-52.6	255.2	65.3	0.29	-0.24	-14.72
8,375.0	0.64	125.03	8,362.3	-52.7	255.5	65.4	0.27	0.12	22.32
8,400.0	0.71	122.28	8,387.3	-52.9	255.7	65.6	0.31	0.28	-11.00
8,425.0	0.70	114.49	8,412.3	-53.0	256.0	65.8	0.39	-0.04	-31.16
8,450.0	0.69	111.07	8,437.3	-53.2	256.3	65.9	0.17	-0.04	-13.68
8,475.0	0.72	112.46	8,462.3	-53.3	256.5	66.0	0.14	0.12	5.56
8,500.0	0.59	100.64	8,487.3	-53.4	256.8	66.1	0.75	-0.52	-47.28
8,525.0	0.73	109.50	8,512.3	-53.4	257.1	66.2	0.69	0.56	35.44
8,550.0	0.67	103.91	8,537.3	-53.5	257.4	66.3	0.36	-0.24	-22.36
8,575.0	0.71	106.70	8,562.3	-53.6	257.7	66.4	0.21	0.16	11.16
8,600.0	0.69	110.58	8,587.3	-53.7	258.0	66.5	0.21	-0.08	15.52
8,625.0	0.65	109.16	8,612.3	-53.8	258.2	66.6	0.17	-0.16	-5.68
8,650.0	0.69	103.79	8,637.3	-53.9	258.5	66.7	0.30	0.16	-21.48

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #601H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #601H
TVD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
MD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
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	0.67	106.47	8,662.3	-54.0	258.8	66.8	0.15	-0.08	10.72
8,700.0	0.67	106.05	8,687.3	-54.0	259.1	66.9	0.02	0.00	-1.68
8,725.0	0.70	101.12	8,712.3	-54.1	259.4	67.0	0.26	0.12	-19.72
8,750.0	0.73	98.16	8,737.3	-54.2	259.7	67.1	0.19	0.12	-11.84
8,775.0	0.71	108.68	8,762.3	-54.2	260.0	67.2	0.53	-0.08	42.08
8,800.0	0.77	102.43	8,787.3	-54.3	260.3	67.3	0.40	0.24	-25.00
8,825.0	0.73	96.68	8,812.3	-54.4	260.6	67.3	0.34	-0.16	-23.00
8,850.0	0.69	106.13	8,837.3	-54.4	260.9	67.4	0.49	-0.16	37.80
8,875.0	0.73	107.99	8,862.3	-54.5	261.2	67.5	0.18	0.16	7.44
8,900.0	0.69	97.12	8,887.3	-54.6	261.5	67.6	0.56	-0.16	-43.48
8,925.0	0.76	106.77	8,912.3	-54.7	261.8	67.7	0.56	0.28	38.60
8,950.0	0.84	99.16	8,937.3	-54.7	262.2	67.8	0.53	0.32	-30.44
8,975.0	0.79	99.62	8,962.3	-54.8	262.5	67.9	0.20	-0.20	1.84
9,000.0	0.68	102.99	8,987.3	-54.9	262.8	67.9	0.47	-0.44	13.48
9,025.0	0.69	100.36	9,012.3	-54.9	263.1	68.0	0.13	0.04	-10.52
9,050.0	0.67	101.45	9,037.3	-55.0	263.4	68.1	0.10	-0.08	4.36
9,075.0	0.69	106.75	9,062.3	-55.0	263.7	68.2	0.26	0.08	21.20
9,100.0	0.67	111.03	9,087.3	-55.1	264.0	68.3	0.22	-0.08	17.12
9,125.0	0.56	118.29	9,112.3	-55.2	264.2	68.4	0.54	-0.44	29.04
9,150.0	0.62	119.29	9,137.3	-55.4	264.5	68.5	0.24	0.24	4.00
9,175.0	0.56	126.47	9,162.3	-55.5	264.7	68.7	0.38	-0.24	28.72
9,200.0	0.55	132.82	9,187.3	-55.7	264.9	68.8	0.25	-0.04	25.40
9,225.0	0.60	130.31	9,212.3	-55.8	265.0	69.0	0.22	0.20	-10.04
9,250.0	0.43	138.16	9,237.3	-56.0	265.2	69.2	0.73	-0.68	31.40
9,275.0	0.59	142.54	9,262.3	-56.2	265.3	69.4	0.66	0.64	17.52
9,300.0	0.53	145.81	9,287.3	-56.4	265.5	69.6	0.27	-0.24	13.08
9,325.0	0.51	149.73	9,312.3	-56.5	265.6	69.8	0.16	-0.08	15.68
9,350.0	0.40	169.94	9,337.3	-56.7	265.7	69.9	0.77	-0.44	80.84
9,375.0	0.41	177.93	9,362.3	-56.9	265.7	70.1	0.23	0.04	31.96
9,400.0	0.36	188.74	9,387.3	-57.1	265.7	70.3	0.35	-0.20	43.24
9,425.0	0.38	183.90	9,412.3	-57.2	265.7	70.4	0.15	0.08	-19.36
9,450.0	0.44	189.97	9,437.3	-57.4	265.6	70.6	0.30	0.24	24.28
9,475.0	0.47	193.63	9,462.3	-57.6	265.6	70.8	0.17	0.12	14.64
9,500.0	0.51	196.18	9,487.3	-57.8	265.6	71.0	0.18	0.16	10.20
9,525.0	0.52	191.66	9,512.3	-58.0	265.5	71.2	0.17	0.04	-18.08
9,550.0	0.47	194.09	9,537.3	-58.2	265.5	71.4	0.22	-0.20	9.72
9,575.0	0.64	206.31	9,562.3	-58.5	265.4	71.7	0.82	0.68	48.88
9,600.0	0.63	220.48	9,587.3	-58.7	265.2	71.9	0.63	-0.04	56.68
9,625.0	1.11	253.14	9,612.3	-58.9	264.9	72.0	2.69	1.92	130.64
9,650.0	1.16	254.55	9,637.3	-59.0	264.4	72.2	0.23	0.20	5.64
9,675.0	1.33	258.15	9,662.2	-59.1	263.9	72.3	0.75	0.68	14.40
9,700.0	1.34	259.21	9,687.2	-59.2	263.3	72.3	0.11	0.04	4.24

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #601H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #601H

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

Grid

Minimum Curvature

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)
9,725.0	1.40	259.48	9,712.2	-59.4	262.7	72.4	0.24	0.24	1.08
9,750.0	1.50	258.32	9,737.2	-59.5	262.1	72.5	0.42	0.40	-4.64
9,775.0	1.49	258.67	9,762.2	-59.6	261.5	72.6	0.05	-0.04	1.40
9,800.0	1.51	257.10	9,787.2	-59.7	260.8	72.7	0.18	0.08	-6.28
9,825.0	1.43	259.66	9,812.2	-59.9	260.2	72.8	0.41	-0.32	10.24
9,850.0	1.59	254.83	9,837.2	-60.0	259.6	72.9	0.82	0.64	-19.32
9,875.0	1.60	255.81	9,862.2	-60.2	258.9	73.1	0.12	0.04	3.92
9,900.0	1.60	252.51	9,887.2	-60.4	258.2	73.2	0.37	0.00	-13.20
9,925.0	1.63	247.90	9,912.2	-60.6	257.6	73.4	0.53	0.12	-18.44
9,950.0	1.70	247.99	9,937.2	-60.9	256.9	73.7	0.28	0.28	0.36
9,975.0	1.62	244.11	9,962.1	-61.2	256.2	73.9	0.55	-0.32	-15.52
10,000.0	1.69	239.39	9,987.1	-61.5	255.6	74.2	0.61	0.28	-18.88
10,025.0	1.58	236.95	10,012.1	-61.9	255.0	74.6	0.52	-0.44	-9.76
10,050.0	1.72	236.81	10,037.1	-62.3	254.4	74.9	0.56	0.56	-0.56
10,075.0	1.65	234.29	10,062.1	-62.7	253.8	75.3	0.41	-0.28	-10.08
10,100.0	1.62	237.23	10,087.1	-63.1	253.2	75.7	0.36	-0.12	11.76
10,125.0	1.62	232.80	10,112.1	-63.5	252.6	76.1	0.50	0.00	-17.72
10,150.0	1.70	232.59	10,137.1	-64.0	252.0	76.5	0.32	0.32	-0.84
10,175.0	1.52	229.40	10,162.1	-64.4	251.5	76.9	0.80	-0.72	-12.76
10,200.0	1.50	229.50	10,187.1	-64.8	251.0	77.3	0.08	-0.08	0.40
10,225.0	1.48	230.16	10,212.0	-65.3	250.5	77.7	0.11	-0.08	2.64
10,250.0	1.48	228.24	10,237.0	-65.7	250.0	78.1	0.20	0.00	-7.68
10,275.0	0.72	221.44	10,262.0	-66.0	249.6	78.4	3.08	-3.04	-27.20
10,300.0	0.32	82.43	10,287.0	-66.1	249.6	78.5	3.94	-1.60	-556.04
10,325.0	0.67	78.25	10,312.0	-66.1	249.8	78.5	1.41	1.40	-16.72
10,350.0	0.88	70.99	10,337.0	-66.0	250.2	78.4	0.93	0.84	-29.04
10,375.0	0.98	74.04	10,362.0	-65.9	250.5	78.3	0.45	0.40	12.20
10,400.0	1.08	62.70	10,387.0	-65.7	251.0	78.2	0.91	0.40	-45.36
10,425.0	1.24	60.43	10,412.0	-65.5	251.4	77.9	0.67	0.64	-9.08
10,450.0	1.15	56.90	10,437.0	-65.2	251.8	77.7	0.46	-0.36	-14.12
10,475.0	1.22	58.25	10,462.0	-64.9	252.3	77.4	0.30	0.28	5.40
10,500.0	1.20	59.94	10,487.0	-64.6	252.7	77.2	0.16	-0.08	6.76
10,525.0	1.17	55.79	10,512.0	-64.4	253.2	76.9	0.36	-0.12	-16.60
10,550.0	1.11	54.78	10,537.0	-64.1	253.6	76.7	0.25	-0.24	-4.04
10,575.0	1.08	58.61	10,562.0	-63.8	254.0	76.4	0.32	-0.12	15.32
10,600.0	0.95	57.90	10,587.0	-63.6	254.4	76.2	0.52	-0.52	-2.84
10,625.0	0.84	60.10	10,612.0	-63.4	254.7	76.0	0.46	-0.44	8.80
10,650.0	0.73	69.49	10,637.0	-63.2	255.0	75.9	0.68	-0.44	37.56
10,675.0	0.59	70.76	10,662.0	-63.1	255.3	75.8	0.56	-0.56	5.08
10,700.0	0.70	68.82	10,687.0	-63.0	255.5	75.7	0.45	0.44	-7.76
10,725.0	0.78	81.73	10,712.0	-63.0	255.8	75.7	0.74	0.32	51.64
10,750.0	0.65	75.95	10,737.0	-62.9	256.1	75.6	0.59	-0.52	-23.12

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #601H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #601H

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

Grid

Minimum Curvature

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)
10,775.0	0.60	66.88	10,762.0	-62.8	256.4	75.6	0.44	-0.20	-36.28
10,800.0	0.53	64.83	10,787.0	-62.7	256.6	75.5	0.29	-0.28	-8.20
10,825.0	0.52	71.79	10,812.0	-62.6	256.8	75.4	0.26	-0.04	27.84
10,850.0	0.35	96.63	10,837.0	-62.6	257.0	75.4	1.00	-0.68	99.36
10,875.0	0.30	110.73	10,862.0	-62.6	257.2	75.4	0.38	-0.20	56.40
10,900.0	0.37	141.77	10,887.0	-62.7	257.3	75.5	0.77	0.28	124.16
10,925.0	0.36	148.91	10,912.0	-62.9	257.4	75.6	0.19	-0.04	28.56
10,950.0	0.41	151.61	10,937.0	-63.0	257.4	75.8	0.21	0.20	10.80
10,975.0	0.37	143.69	10,962.0	-63.1	257.5	75.9	0.27	-0.16	-31.68
11,000.0	0.37	152.18	10,987.0	-63.3	257.6	76.1	0.22	0.00	33.96
11,025.0	0.40	167.44	11,012.0	-63.4	257.7	76.2	0.43	0.12	61.04
11,050.0	0.40	237.27	11,037.0	-63.6	257.6	76.4	1.83	0.00	279.32
11,075.0	0.69	246.55	11,062.0	-63.7	257.4	76.5	1.21	1.16	37.12
11,100.0	0.35	248.06	11,087.0	-63.8	257.2	76.5	1.36	-1.36	6.04
11,125.0	0.56	235.96	11,112.0	-63.9	257.0	76.6	0.92	0.84	-48.40
11,150.0	0.87	219.38	11,137.0	-64.1	256.8	76.8	1.48	1.24	-66.32
11,175.0	1.35	209.02	11,161.9	-64.5	256.5	77.2	2.07	1.92	-41.44
11,200.0	1.75	208.62	11,186.9	-65.1	256.2	77.8	1.60	1.60	-1.60
11,225.0	2.08	208.54	11,211.9	-65.8	255.8	78.5	1.32	1.32	-0.32
11,250.0	2.31	211.04	11,236.9	-66.6	255.3	79.3	1.00	0.92	10.00
11,275.0	2.40	210.45	11,261.9	-67.5	254.8	80.2	0.37	0.36	-2.36
11,300.0	2.59	212.14	11,286.9	-68.4	254.3	81.1	0.81	0.76	6.76
11,325.0	2.42	211.53	11,311.8	-69.4	253.7	82.0	0.69	-0.68	-2.44
11,330.0	2.38	211.40	11,316.8	-69.6	253.6	82.2	0.81	-0.80	-2.60
11,491.0	0.79	275.86	11,477.8	-72.3	250.7	84.7	1.34	-0.99	40.04
11,539.0	1.06	268.96	11,525.8	-72.3	250.0	84.7	0.61	0.56	-14.38
11,586.0	1.07	278.21	11,572.8	-72.2	249.1	84.6	0.37	0.02	19.68
11,615.0	0.95	278.97	11,601.8	-72.1	248.6	84.5	0.42	-0.41	2.62
11,682.0	3.60	175.95	11,668.7	-74.2	248.2	86.5	5.86	3.96	-153.76
11,713.0	10.10	171.43	11,699.5	-77.8	248.7	90.2	21.02	20.97	-14.58
11,745.0	15.41	172.91	11,730.7	-84.8	249.6	97.2	16.62	16.59	4.63
11,776.0	18.09	174.20	11,760.4	-93.7	250.6	106.1	8.73	8.65	4.16
11,808.0	20.83	177.04	11,790.5	-104.3	251.4	116.8	9.06	8.56	8.88
11,839.0	22.44	178.40	11,819.3	-115.7	251.8	128.2	5.44	5.19	4.39
11,871.0	24.03	179.84	11,848.7	-128.4	252.0	140.8	5.28	4.97	4.50
11,902.0	26.83	179.84	11,876.7	-141.7	252.1	154.1	9.03	9.03	0.00
11,934.0	28.57	180.59	11,905.1	-156.5	252.0	168.9	5.55	5.44	2.34
11,965.0	30.46	180.50	11,932.0	-171.8	251.9	184.2	6.10	6.10	-0.29
11,997.0	34.06	180.66	11,959.1	-188.9	251.7	201.2	11.25	11.25	0.50
12,029.0	37.43	181.19	11,985.1	-207.6	251.4	219.9	10.58	10.53	1.66
12,060.0	39.44	181.18	12,009.3	-226.8	251.0	239.1	6.48	6.48	-0.03
12,092.0	41.57	180.54	12,033.7	-247.6	250.7	259.9	6.78	6.66	-2.00

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #601H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #601H
TVD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
MD Reference: RKB=3316.4+25 @ 3341.4usft (PRECISION 595)
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)
12,123.0	43.83	179.61	12,056.5	-268.6	250.6	280.8	7.57	7.29	-3.00
12,136.0	45.15	179.44	12,065.7	-277.8	250.7	289.9	10.20	10.15	-1.32
FTP @ 12136.0' MD, 330' FNL, 1728' FWL									
12,155.0	47.08	179.20	12,078.9	-291.4	250.9	303.6	10.20	10.16	-1.25
12,187.0	49.69	178.19	12,100.2	-315.4	251.4	327.5	8.49	8.16	-3.16
12,218.0	52.50	176.63	12,119.6	-339.5	252.5	351.7	9.87	9.06	-5.03
12,250.0	55.79	175.04	12,138.4	-365.3	254.4	377.6	11.04	10.28	-4.97
FTP-Coonskin Fee #601H									
12,282.0	59.58	175.08	12,155.5	-392.3	256.8	404.6	11.84	11.84	0.13
12,313.0	62.17	175.41	12,170.6	-419.2	259.0	431.7	8.41	8.35	1.06
12,345.0	63.68	175.94	12,185.1	-447.7	261.1	460.2	4.94	4.72	1.66
12,376.0	65.84	177.42	12,198.3	-475.6	262.8	488.2	8.20	6.97	4.77
12,408.0	68.44	177.69	12,210.8	-505.1	264.0	517.7	8.16	8.13	0.84
12,439.0	71.52	177.78	12,221.4	-534.2	265.2	546.8	9.94	9.94	0.29
12,471.0	74.39	178.44	12,230.8	-564.8	266.2	577.4	9.18	8.97	2.06
12,502.0	76.81	178.19	12,238.5	-594.8	267.1	607.4	7.85	7.81	-0.81
12,534.0	78.61	177.24	12,245.3	-626.0	268.3	638.7	6.33	5.63	-2.97
12,566.0	81.38	177.14	12,250.8	-657.5	269.9	670.2	8.66	8.66	-0.31
12,597.0	84.99	177.65	12,254.5	-688.2	271.3	700.9	11.76	11.65	1.65
12,629.0	88.74	178.94	12,256.3	-720.2	272.2	732.9	12.39	11.72	4.03
12,638.0	89.64	179.12	12,256.4	-729.2	272.4	741.9	10.20	10.00	2.00
12,671.0	90.35	179.25	12,256.4	-762.2	272.8	774.9	2.19	2.15	0.39
12,764.0	90.90	179.44	12,255.4	-855.2	273.9	867.8	0.63	0.59	0.20
12,858.0	88.79	181.38	12,255.6	-949.1	273.2	961.6	3.05	-2.24	2.06
12,953.0	87.57	181.66	12,258.7	-1,044.1	270.7	1,056.3	1.32	-1.28	0.29
13,048.0	87.74	182.20	12,262.5	-1,138.9	267.5	1,150.9	0.60	0.18	0.57
13,142.0	88.19	183.41	12,265.9	-1,232.8	262.9	1,244.4	1.37	0.48	1.29
13,237.0	88.31	183.81	12,268.8	-1,327.5	256.9	1,338.7	0.44	0.13	0.42
13,332.0	87.47	181.64	12,272.3	-1,422.3	252.4	1,433.2	2.45	-0.88	-2.28
13,427.0	87.43	181.20	12,276.5	-1,517.2	250.1	1,527.8	0.46	-0.04	-0.46
13,522.0	87.67	180.45	12,280.6	-1,612.1	248.7	1,622.5	0.83	0.25	-0.79
13,617.0	89.44	178.18	12,283.0	-1,707.1	249.8	1,717.4	3.03	1.86	-2.39
13,713.0	90.90	176.43	12,282.7	-1,803.0	254.3	1,813.4	2.37	1.52	-1.82
13,808.0	89.50	174.88	12,282.3	-1,897.7	261.5	1,908.4	2.20	-1.47	-1.63
13,904.0	91.87	175.38	12,281.2	-1,993.3	269.7	2,004.3	2.52	2.47	0.52
13,999.0	93.26	177.29	12,276.9	-2,088.0	275.8	2,099.2	2.48	1.46	2.01
14,094.0	91.13	178.33	12,273.3	-2,182.9	279.4	2,194.1	2.49	-2.24	1.09
14,189.0	91.50	181.19	12,271.1	-2,277.8	279.8	2,289.0	3.03	0.39	3.01
14,284.0	91.35	183.69	12,268.8	-2,372.7	275.7	2,383.5	2.64	-0.16	2.63
14,379.0	86.76	180.92	12,270.3	-2,467.6	271.9	2,478.1	5.64	-4.83	-2.92
14,473.0	86.26	179.76	12,276.1	-2,561.4	271.4	2,571.8	1.34	-0.53	-1.23
14,568.0	90.84	180.33	12,278.5	-2,656.4	271.3	2,666.6	4.86	4.82	0.60

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #601H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #601H

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

Grid

Minimum Curvature

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)
14,663.0	87.02	179.21	12,280.2	-2,751.3	271.7	2,761.5	4.19	-4.02	-1.18
14,758.0	88.89	180.80	12,283.6	-2,846.3	271.7	2,856.3	2.58	1.97	1.67
14,852.0	88.13	180.59	12,286.1	-2,940.2	270.5	2,950.1	0.84	-0.81	-0.22
14,947.0	87.93	180.90	12,289.3	-3,035.2	269.3	3,044.8	0.39	-0.21	0.33
15,042.0	86.26	179.27	12,294.1	-3,130.0	269.1	3,139.6	2.45	-1.76	-1.72
15,137.0	84.67	179.03	12,301.7	-3,224.7	270.5	3,234.2	1.69	-1.67	-0.25
15,231.0	82.95	177.61	12,311.8	-3,318.1	273.3	3,327.6	2.37	-1.83	-1.51
15,326.0	87.47	175.82	12,319.7	-3,412.6	278.7	3,422.3	5.11	4.76	-1.88
15,421.0	90.84	176.56	12,321.1	-3,507.4	285.0	3,517.2	3.63	3.55	0.78
15,516.0	88.81	179.08	12,321.4	-3,602.3	288.6	3,612.2	3.41	-2.14	2.65
15,611.0	88.77	181.61	12,323.4	-3,697.3	288.1	3,707.0	2.66	-0.04	2.66
15,705.0	88.31	183.29	12,325.8	-3,791.1	284.0	3,800.6	1.85	-0.49	1.79
15,800.0	89.02	184.46	12,328.0	-3,885.9	277.6	3,894.9	1.44	0.75	1.23
15,895.0	86.23	180.41	12,332.0	-3,980.7	273.6	3,989.4	5.17	-2.94	-4.26
15,989.0	87.20	180.46	12,337.4	-4,074.5	272.9	4,083.1	1.03	1.03	0.05
16,084.0	86.27	179.01	12,342.8	-4,169.4	273.3	4,177.8	1.81	-0.98	-1.53
16,178.0	87.42	179.46	12,347.9	-4,263.2	274.6	4,271.6	1.31	1.22	0.48
16,273.0	87.68	178.31	12,352.0	-4,358.1	276.4	4,366.5	1.24	0.27	-1.21
16,368.0	88.54	178.78	12,355.1	-4,453.0	278.8	4,461.4	1.03	0.91	0.49
16,463.0	87.39	178.73	12,358.5	-4,548.0	280.9	4,556.3	1.21	-1.21	-0.05
16,559.0	86.83	178.59	12,363.3	-4,643.8	283.1	4,652.2	0.60	-0.58	-0.15
16,654.0	86.20	177.79	12,369.1	-4,738.6	286.1	4,747.0	1.07	-0.66	-0.84
16,749.0	89.93	178.16	12,372.3	-4,833.4	289.5	4,841.9	3.95	3.93	0.39
16,844.0	90.25	178.53	12,372.2	-4,928.4	292.2	4,936.9	0.51	0.34	0.39
16,939.0	90.90	179.18	12,371.2	-5,023.4	294.1	5,031.8	0.97	0.68	0.68
17,034.0	89.98	179.34	12,370.5	-5,118.4	295.3	5,126.7	0.98	-0.97	0.17
17,128.0	87.77	179.79	12,372.3	-5,212.3	296.1	5,220.6	2.40	-2.35	0.48
17,223.0	87.42	180.74	12,376.3	-5,307.3	295.6	5,315.4	1.06	-0.37	1.00
17,318.0	88.40	180.81	12,379.8	-5,402.2	294.3	5,410.1	1.03	1.03	0.07
17,413.0	86.40	180.11	12,384.1	-5,497.1	293.6	5,504.9	2.23	-2.11	-0.74
17,508.0	87.31	180.36	12,389.3	-5,591.9	293.2	5,599.6	0.99	0.96	0.26
17,603.0	87.23	180.15	12,393.8	-5,686.8	292.8	5,694.4	0.24	-0.08	-0.22
17,697.0	86.22	179.83	12,399.2	-5,780.7	292.8	5,788.1	1.13	-1.07	-0.34
17,793.0	87.64	179.31	12,404.3	-5,876.5	293.5	5,883.9	1.57	1.48	-0.54
17,889.0	89.72	179.87	12,406.6	-5,972.5	294.2	5,979.7	2.24	2.17	0.58
17,984.0	85.61	176.87	12,410.4	-6,067.3	296.9	6,074.6	5.35	-4.33	-3.16
18,079.0	83.15	175.27	12,419.7	-6,161.7	303.4	6,169.1	3.08	-2.59	-1.68
18,174.0	85.54	175.25	12,429.1	-6,255.9	311.2	6,263.6	2.52	2.52	-0.02
18,269.0	87.10	176.48	12,435.2	-6,350.4	318.0	6,358.4	2.09	1.64	1.29
18,364.0	92.70	178.85	12,435.4	-6,445.3	321.9	6,453.3	6.40	5.89	2.49
18,460.0	86.26	179.51	12,436.2	-6,541.2	323.2	6,549.2	6.74	-6.71	0.69
18,555.0	87.88	179.69	12,441.1	-6,636.1	323.9	6,644.0	1.72	1.71	0.19

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #601H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #601H

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

RKB=3316.4+25 @ 3341.4usft (PRECISION 595)

Grid

Minimum Curvature

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)
18,650.0	90.70	179.97	12,442.3	-6,731.1	324.2	6,738.9	2.98	2.97	0.29
18,745.0	91.87	180.61	12,440.1	-6,826.1	323.7	6,833.7	1.40	1.23	0.67
18,840.0	90.65	180.49	12,438.0	-6,921.0	322.8	6,928.5	1.29	-1.28	-0.13
18,935.0	92.80	179.80	12,435.2	-7,016.0	322.6	7,023.3	2.38	2.26	-0.73
19,030.0	89.44	179.05	12,433.3	-7,110.9	323.5	7,118.2	3.62	-3.54	-0.79
19,125.0	89.59	180.31	12,434.1	-7,205.9	324.0	7,213.1	1.34	0.16	1.33
19,219.0	92.10	181.80	12,432.7	-7,299.9	322.3	7,306.9	3.11	2.67	1.59
19,314.0	87.71	181.79	12,432.9	-7,394.8	319.3	7,401.5	4.62	-4.62	-0.01
19,409.0	85.52	181.76	12,438.5	-7,489.6	316.4	7,496.1	2.31	-2.31	-0.03
19,458.7	86.05	181.73	12,442.2	-7,539.2	314.9	7,545.5	1.07	1.07	-0.05
LTP @ 19458.7' MD, 2310' FNL, 1731' FWL									
19,504.0	86.54	181.71	12,445.1	-7,584.3	313.5	7,590.5	1.07	1.07	-0.05
19,579.5	86.54	181.71	12,449.6	-7,659.7	311.3	7,665.7	0.00	0.00	0.00
PBHL-Coonskin Fee #601H									
19,582.0	86.54	181.71	12,449.8	-7,662.2	311.2	7,668.1	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
12,136.0	12,065.7	-277.8	250.7	FTP @ 12136.0' MD, 330' FNL, 1728' FWL
19,458.7	12,442.2	-7,539.2	314.9	LTP @ 19458.7' MD, 2310' FNL, 1731' FWL

Checked By: _____ Approved By: _____ Date: _____