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OCT 18 2019

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NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

COONSKIN FEE #603H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

19 November, 2018



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #603H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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

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

Well	COONSKIN FEE #603H				
Well Position	+N/-S	0.0 usft	Northing:	436,151.40 usft	Latitude: 32° 11' 43.773 N
	+E/-W	0.0 usft	Easting:	795,361.10 usft	Longitude: 103° 22' 42.698 W
Position Uncertainty	3.0 usft		Wellhead Elevation:	usft	Ground Level: 3,306.9 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	6/23/2018	6.78	60.04	47,823.39399575

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	179.51	

Survey Program	Date	11/19/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	11,388.2	GYRO-INTERMEDIATE (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
11,565.0	19,681.0	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	0.13	187.16	100.0	-0.1	0.0	0.1	0.13	0.13	0.00	
125.0	0.26	195.39	125.0	-0.2	0.0	0.2	0.53	0.52	32.92	
150.0	0.41	222.36	150.0	-0.3	-0.1	0.3	0.85	0.60	107.88	
175.0	0.27	195.11	175.0	-0.4	-0.2	0.4	0.84	-0.56	-109.00	
200.0	0.25	176.76	200.0	-0.6	-0.2	0.5	0.34	-0.08	-73.40	
225.0	0.22	186.01	225.0	-0.7	-0.2	0.7	0.19	-0.12	37.00	
250.0	0.18	187.76	250.0	-0.7	-0.2	0.7	0.16	-0.16	7.00	



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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)
275.0	0.19	218.72	275.0	-0.8	-0.2	0.8	0.40	0.04	123.84
300.0	0.20	213.08	300.0	-0.9	-0.3	0.9	0.09	0.04	-22.56
325.0	0.27	233.53	325.0	-1.0	-0.4	0.9	0.43	0.28	81.80
350.0	0.24	233.33	350.0	-1.0	-0.4	1.0	0.12	-0.12	-0.80
375.0	0.32	213.25	375.0	-1.1	-0.5	1.1	0.50	0.32	-80.32
400.0	0.40	212.88	400.0	-1.2	-0.6	1.2	0.32	0.32	-1.48
425.0	0.29	205.60	425.0	-1.4	-0.7	1.4	0.47	-0.44	-29.12
450.0	0.30	210.08	450.0	-1.5	-0.8	1.5	0.10	0.04	17.92
475.0	0.26	215.52	475.0	-1.6	-0.8	1.6	0.19	-0.16	21.76
500.0	0.33	222.89	500.0	-1.7	-0.9	1.7	0.32	0.28	29.48
525.0	0.47	234.94	525.0	-1.8	-1.0	1.8	0.65	0.56	48.20
550.0	0.42	222.37	550.0	-1.9	-1.2	1.9	0.44	-0.20	-50.28
575.0	0.43	226.50	575.0	-2.1	-1.3	2.0	0.13	0.04	16.52
600.0	0.50	232.32	600.0	-2.2	-1.5	2.2	0.34	0.28	23.28
625.0	0.43	208.94	625.0	-2.3	-1.6	2.3	0.80	-0.28	-93.52
650.0	0.35	218.19	650.0	-2.5	-1.7	2.5	0.41	-0.32	37.00
675.0	0.43	207.56	675.0	-2.6	-1.8	2.6	0.43	0.32	-42.52
700.0	0.43	214.28	700.0	-2.8	-1.9	2.8	0.20	0.00	26.88
725.0	0.39	199.64	725.0	-2.9	-2.0	2.9	0.45	-0.16	-58.56
750.0	0.41	214.30	750.0	-3.1	-2.0	3.1	0.42	0.08	58.64
775.0	0.44	219.77	775.0	-3.2	-2.1	3.2	0.20	0.12	21.88
800.0	0.45	219.62	800.0	-3.4	-2.3	3.4	0.04	0.04	-0.60
825.0	0.54	228.91	825.0	-3.5	-2.4	3.5	0.48	0.36	37.16
850.0	0.57	221.10	850.0	-3.7	-2.6	3.7	0.33	0.12	-31.24
875.0	0.64	219.20	875.0	-3.9	-2.8	3.9	0.29	0.28	-7.60
900.0	0.59	223.80	900.0	-4.1	-2.9	4.1	0.28	-0.20	18.40
925.0	0.60	217.54	925.0	-4.3	-3.1	4.3	0.26	0.04	-25.04
950.0	0.60	221.04	950.0	-4.5	-3.3	4.5	0.15	0.00	14.00
975.0	0.42	224.53	975.0	-4.7	-3.4	4.7	0.73	-0.72	13.96
1,000.0	0.13	181.14	1,000.0	-4.8	-3.5	4.7	1.35	-1.16	-173.56
1,025.0	0.11	125.79	1,025.0	-4.8	-3.5	4.8	0.45	-0.08	-221.40
1,050.0	0.06	93.73	1,050.0	-4.8	-3.4	4.8	0.27	-0.20	-128.24
1,075.0	0.09	98.83	1,075.0	-4.8	-3.4	4.8	0.12	0.12	20.40
1,100.0	0.03	61.82	1,100.0	-4.8	-3.4	4.8	0.27	-0.24	-148.04
1,125.0	0.10	57.53	1,125.0	-4.8	-3.4	4.8	0.28	0.28	-17.16
1,150.0	0.05	58.49	1,150.0	-4.8	-3.3	4.8	0.20	-0.20	3.84
1,175.0	0.06	61.00	1,175.0	-4.8	-3.3	4.8	0.04	0.04	10.04
1,200.0	0.04	90.37	1,200.0	-4.8	-3.3	4.8	0.13	-0.08	117.48
1,225.0	0.13	60.95	1,225.0	-4.8	-3.3	4.7	0.39	0.36	-117.68
1,250.0	0.10	53.62	1,250.0	-4.7	-3.2	4.7	0.13	-0.12	-29.32
1,275.0	0.08	37.13	1,275.0	-4.7	-3.2	4.7	0.13	-0.08	-65.96
1,300.0	0.07	77.31	1,300.0	-4.7	-3.2	4.7	0.21	-0.04	160.72



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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	0.05	24.97	1,325.0	-4.7	-3.1	4.7	0.22	-0.08	-209.36
1,350.0	0.10	353.57	1,350.0	-4.7	-3.1	4.6	0.25	0.20	-125.60
1,375.0	0.06	342.51	1,375.0	-4.6	-3.1	4.6	0.17	-0.16	-44.24
1,400.0	0.08	353.45	1,400.0	-4.6	-3.1	4.6	0.10	0.08	43.76
1,425.0	0.05	79.39	1,425.0	-4.6	-3.1	4.5	0.37	-0.12	343.76
1,450.0	0.04	57.79	1,450.0	-4.6	-3.1	4.5	0.08	-0.04	-86.40
1,475.0	0.07	26.94	1,475.0	-4.5	-3.1	4.5	0.16	0.12	-123.40
1,500.0	0.05	332.18	1,500.0	-4.5	-3.1	4.5	0.23	-0.08	-219.04
1,525.0	0.11	294.41	1,525.0	-4.5	-3.1	4.5	0.31	0.24	-151.08
1,550.0	0.06	303.43	1,550.0	-4.5	-3.2	4.5	0.21	-0.20	36.08
1,575.0	0.08	281.47	1,575.0	-4.5	-3.2	4.4	0.13	0.08	-87.84
1,600.0	0.11	260.87	1,600.0	-4.5	-3.2	4.4	0.18	0.12	-82.40
1,625.0	0.07	203.23	1,625.0	-4.5	-3.3	4.5	0.37	-0.16	-230.56
1,650.0	0.06	229.43	1,650.0	-4.5	-3.3	4.5	0.12	-0.04	104.80
1,675.0	0.05	165.41	1,675.0	-4.5	-3.3	4.5	0.24	-0.04	-256.08
1,700.0	0.03	137.54	1,700.0	-4.6	-3.3	4.5	0.11	-0.08	-111.48
1,725.0	0.05	90.49	1,725.0	-4.6	-3.3	4.5	0.15	0.08	-188.20
1,750.0	0.14	70.28	1,750.0	-4.5	-3.2	4.5	0.38	0.36	-80.84
1,775.0	0.04	27.71	1,775.0	-4.5	-3.2	4.5	0.46	-0.40	-170.28
1,800.0	0.05	346.32	1,800.0	-4.5	-3.2	4.5	0.13	0.04	-165.56
1,825.0	0.10	311.11	1,825.0	-4.5	-3.2	4.5	0.26	0.20	-140.84
1,850.0	0.09	341.01	1,850.0	-4.5	-3.2	4.4	0.20	-0.04	119.60
1,875.0	0.05	248.26	1,875.0	-4.4	-3.2	4.4	0.42	-0.16	-371.00
1,900.0	0.05	258.01	1,900.0	-4.4	-3.3	4.4	0.03	0.00	39.00
1,925.0	0.06	210.71	1,925.0	-4.5	-3.3	4.4	0.18	0.04	-189.20
1,950.0	0.12	168.34	1,950.0	-4.5	-3.3	4.5	0.34	0.24	-169.48
1,975.0	0.10	180.07	1,975.0	-4.5	-3.3	4.5	0.12	-0.08	46.92
2,000.0	0.03	198.81	2,000.0	-4.6	-3.3	4.5	0.29	-0.28	74.96
2,025.0	0.12	132.32	2,025.0	-4.6	-3.3	4.6	0.45	0.36	-265.96
2,050.0	0.13	156.54	2,050.0	-4.6	-3.2	4.6	0.21	0.04	96.88
2,075.0	0.09	150.39	2,075.0	-4.7	-3.2	4.7	0.17	-0.16	-24.60
2,100.0	0.06	87.28	2,100.0	-4.7	-3.2	4.7	0.33	-0.12	-252.44
2,125.0	0.10	120.81	2,125.0	-4.7	-3.2	4.7	0.24	0.16	134.12
2,150.0	0.10	153.68	2,150.0	-4.7	-3.1	4.7	0.23	0.00	131.48
2,175.0	0.12	121.04	2,175.0	-4.8	-3.1	4.7	0.26	0.08	-130.56
2,200.0	0.11	119.48	2,200.0	-4.8	-3.1	4.8	0.04	-0.04	-6.24
2,225.0	0.10	130.97	2,225.0	-4.8	-3.0	4.8	0.09	-0.04	45.96
2,250.0	0.09	111.48	2,250.0	-4.8	-3.0	4.8	0.13	-0.04	-77.96
2,275.0	0.12	90.14	2,275.0	-4.9	-2.9	4.8	0.20	0.12	-85.36
2,300.0	0.06	90.06	2,300.0	-4.9	-2.9	4.8	0.24	-0.24	-0.32
2,325.0	0.06	73.30	2,325.0	-4.8	-2.9	4.8	0.07	0.00	-67.04
2,350.0	0.11	64.24	2,350.0	-4.8	-2.8	4.8	0.21	0.20	-36.24



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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	0.09	78.79	2,375.0	-4.8	-2.8	4.8	0.13	-0.08	58.20
2,400.0	0.13	74.28	2,400.0	-4.8	-2.8	4.8	0.16	0.16	-18.04
2,425.0	0.08	71.17	2,425.0	-4.8	-2.7	4.8	0.20	-0.20	-12.44
2,450.0	0.08	68.78	2,450.0	-4.8	-2.7	4.8	0.01	0.00	-9.56
2,475.0	0.09	44.61	2,475.0	-4.8	-2.6	4.7	0.15	0.04	-96.68
2,500.0	0.08	36.86	2,500.0	-4.7	-2.6	4.7	0.06	-0.04	-31.00
2,525.0	0.10	48.95	2,525.0	-4.7	-2.6	4.7	0.11	0.08	48.36
2,550.0	0.08	38.36	2,550.0	-4.7	-2.6	4.7	0.10	-0.08	-42.36
2,575.0	0.08	331.39	2,575.0	-4.6	-2.6	4.6	0.35	0.00	-267.88
2,600.0	0.07	306.13	2,600.0	-4.6	-2.6	4.6	0.14	-0.04	-101.04
2,625.0	0.04	329.68	2,625.0	-4.6	-2.6	4.6	0.15	-0.12	94.20
2,650.0	0.04	216.01	2,650.0	-4.6	-2.6	4.6	0.27	0.00	-454.68
2,675.0	0.04	125.43	2,675.0	-4.6	-2.6	4.6	0.23	0.00	-362.32
2,700.0	0.05	231.14	2,700.0	-4.6	-2.6	4.6	0.29	0.04	422.84
2,725.0	0.05	138.89	2,725.0	-4.6	-2.6	4.6	0.29	0.00	-369.00
2,750.0	0.10	120.54	2,750.0	-4.7	-2.6	4.6	0.22	0.20	-73.40
2,775.0	0.09	113.20	2,775.0	-4.7	-2.6	4.7	0.06	-0.04	-29.36
2,800.0	0.04	106.05	2,800.0	-4.7	-2.5	4.7	0.20	-0.20	-28.60
2,825.0	0.09	80.00	2,825.0	-4.7	-2.5	4.7	0.23	0.20	-104.20
2,850.0	0.14	95.36	2,850.0	-4.7	-2.4	4.7	0.23	0.20	61.44
2,875.0	0.13	79.01	2,875.0	-4.7	-2.4	4.7	0.16	-0.04	-65.40
2,900.0	0.04	13.39	2,900.0	-4.7	-2.4	4.7	0.48	-0.36	-262.48
2,925.0	0.03	356.96	2,925.0	-4.7	-2.4	4.6	0.06	-0.04	-65.72
2,950.0	0.06	19.79	2,950.0	-4.6	-2.4	4.6	0.14	0.12	91.32
2,975.0	0.03	12.48	2,975.0	-4.6	-2.3	4.6	0.12	-0.12	-29.24
3,000.0	0.04	312.45	3,000.0	-4.6	-2.4	4.6	0.14	0.04	-240.12
3,025.0	0.04	283.58	3,025.0	-4.6	-2.4	4.6	0.08	0.00	-115.48
3,050.0	0.05	205.78	3,050.0	-4.6	-2.4	4.6	0.23	0.04	-311.20
3,075.0	0.10	132.78	3,075.0	-4.6	-2.4	4.6	0.39	0.20	-292.00
3,100.0	0.12	130.40	3,100.0	-4.7	-2.3	4.6	0.08	0.08	-9.52
3,125.0	0.08	82.70	3,125.0	-4.7	-2.3	4.7	0.36	-0.16	-190.80
3,150.0	0.14	81.50	3,150.0	-4.7	-2.2	4.7	0.24	0.24	-4.80
3,175.0	0.07	105.83	3,175.0	-4.7	-2.2	4.7	0.33	-0.28	97.32
3,200.0	0.12	72.15	3,200.0	-4.7	-2.2	4.7	0.29	0.20	-134.72
3,225.0	0.15	71.49	3,225.0	-4.7	-2.1	4.6	0.12	0.12	-2.64
3,250.0	0.15	75.41	3,250.0	-4.6	-2.0	4.6	0.04	0.00	15.68
3,275.0	0.09	21.90	3,275.0	-4.6	-2.0	4.6	0.48	-0.24	-214.04
3,300.0	0.11	23.49	3,300.0	-4.6	-2.0	4.6	0.08	0.08	6.36
3,325.0	0.13	14.89	3,325.0	-4.5	-2.0	4.5	0.11	0.08	-34.40
3,350.0	0.15	351.83	3,350.0	-4.5	-2.0	4.4	0.24	0.08	-92.24
3,375.0	0.16	343.04	3,375.0	-4.4	-2.0	4.4	0.10	0.04	-35.16
3,400.0	0.11	346.41	3,400.0	-4.3	-2.0	4.3	0.20	-0.20	13.48



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Project:	LEA COUNTY, NM	TVD Reference:	RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
Site:	BULLDOG	MD Reference:	RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
Well:	COONSKIN FEE #603H	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)	Buid Rate (°/100usft)	Turn Rate (°/100usft)	
3,425.0	0.17	332.45	3,425.0	-4.3	-2.0	4.3	0.27	0.24	-55.84	
3,450.0	0.11	337.48	3,450.0	-4.2	-2.0	4.2	0.24	-0.24	20.12	
3,475.0	0.10	252.84	3,475.0	-4.2	-2.1	4.2	0.57	-0.04	-338.56	
3,500.0	0.11	238.40	3,500.0	-4.2	-2.1	4.2	0.11	0.04	-57.76	
3,525.0	0.22	185.10	3,525.0	-4.3	-2.1	4.3	0.71	0.44	-213.20	
3,550.0	0.11	202.76	3,550.0	-4.4	-2.2	4.3	0.48	-0.44	70.64	
3,575.0	0.12	121.79	3,575.0	-4.4	-2.1	4.4	0.60	0.04	-323.88	
3,600.0	0.24	70.41	3,600.0	-4.4	-2.1	4.4	0.76	0.48	-205.52	
3,625.0	0.28	50.56	3,625.0	-4.3	-2.0	4.3	0.39	0.16	-79.40	
3,650.0	0.25	45.71	3,650.0	-4.3	-1.9	4.2	0.15	-0.12	-19.40	
3,675.0	0.25	23.35	3,675.0	-4.2	-1.8	4.2	0.39	0.00	-89.44	
3,700.0	0.27	50.37	3,700.0	-4.1	-1.8	4.1	0.49	0.08	108.08	
3,725.0	0.30	109.68	3,725.0	-4.1	-1.7	4.1	1.13	0.12	237.24	
3,750.0	0.56	138.76	3,750.0	-4.2	-1.5	4.2	1.33	1.04	116.32	
3,775.0	0.77	135.20	3,775.0	-4.4	-1.3	4.4	0.86	0.84	-14.24	
3,800.0	1.07	132.76	3,800.0	-4.7	-1.0	4.7	1.21	1.20	-9.76	
3,825.0	1.13	128.46	3,825.0	-5.0	-0.7	5.0	0.41	0.24	-17.20	
3,850.0	1.20	129.04	3,850.0	-5.3	-0.3	5.3	0.28	0.28	2.32	
3,875.0	1.24	124.64	3,875.0	-5.6	0.2	5.6	0.41	0.16	-17.60	
3,900.0	1.25	122.77	3,899.9	-5.9	0.6	5.9	0.17	0.04	-7.48	
3,925.0	1.43	120.17	3,924.9	-6.2	1.1	6.2	0.76	0.72	-10.40	
3,950.0	1.42	118.74	3,949.9	-6.5	1.7	6.5	0.15	-0.04	-5.72	
3,975.0	1.47	104.96	3,974.9	-6.8	2.2	6.8	1.40	0.20	-55.12	
4,000.0	0.84	104.54	3,999.9	-6.9	2.7	6.9	2.52	-2.52	-1.68	
4,025.0	0.74	93.25	4,024.9	-6.9	3.1	7.0	0.74	-0.40	-45.16	
4,050.0	0.36	35.95	4,049.9	-6.9	3.3	6.9	2.50	-1.52	-229.20	
4,075.0	0.31	357.94	4,074.9	-6.8	3.3	6.8	0.89	-0.20	-152.04	
4,100.0	0.29	347.92	4,099.9	-6.6	3.3	6.7	0.22	-0.08	-40.08	
4,125.0	0.26	342.07	4,124.9	-6.5	3.3	6.5	0.16	-0.12	-23.40	
4,150.0	0.28	340.17	4,149.9	-6.4	3.2	6.4	0.09	0.08	-7.60	
4,175.0	0.27	359.15	4,174.9	-6.3	3.2	6.3	0.36	-0.04	75.92	
4,200.0	0.41	352.75	4,199.9	-6.1	3.2	6.2	0.58	0.56	-25.60	
4,225.0	0.50	346.47	4,224.9	-5.9	3.2	6.0	0.41	0.36	-25.12	
4,250.0	0.50	349.19	4,249.9	-5.7	3.1	5.8	0.09	0.00	10.88	
4,275.0	0.48	346.83	4,274.9	-5.5	3.1	5.5	0.11	-0.08	-9.44	
4,300.0	0.47	4.21	4,299.9	-5.3	3.0	5.3	0.58	-0.04	69.52	
4,325.0	0.58	22.98	4,324.9	-5.1	3.1	5.1	0.81	0.44	75.08	
4,350.0	0.83	34.61	4,349.9	-4.8	3.3	4.9	1.15	1.00	46.52	
4,375.0	0.90	36.07	4,374.9	-4.5	3.5	4.6	0.29	0.28	5.84	
4,400.0	0.95	35.36	4,399.9	-4.2	3.7	4.2	0.21	0.20	-2.84	
4,425.0	0.95	37.90	4,424.9	-3.9	4.0	3.9	0.17	0.00	10.16	
4,450.0	0.94	39.91	4,449.9	-3.5	4.2	3.6	0.14	-0.04	8.04	



Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: COONSKIN FEE #603H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
 TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
 MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
 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	0.95	37.77	4,474.9	-3.2	4.5	3.3	0.15	0.04	-8.56
4,500.0	0.86	36.10	4,499.9	-2.9	4.7	2.9	0.38	-0.36	-6.68
4,525.0	0.88	40.22	4,524.9	-2.6	4.9	2.7	0.26	0.08	16.48
4,550.0	0.92	45.71	4,549.9	-2.3	5.2	2.4	0.38	0.16	21.96
4,575.0	0.98	45.27	4,574.9	-2.0	5.5	2.1	0.24	0.24	-1.76
4,600.0	1.21	51.38	4,599.9	-1.7	5.9	1.8	1.03	0.92	24.44
4,625.0	1.66	58.81	4,624.9	-1.4	6.4	1.4	1.94	1.80	29.72
4,650.0	2.67	59.99	4,649.8	-0.9	7.2	0.9	4.04	4.04	4.72
4,675.0	3.57	62.65	4,674.8	-0.2	8.4	0.3	3.65	3.60	10.64
4,700.0	4.46	64.19	4,699.7	0.5	10.0	-0.5	3.59	3.56	6.16
4,725.0	4.93	64.06	4,724.7	1.4	11.8	-1.3	1.88	1.88	-0.52
4,750.0	5.19	64.35	4,749.6	2.4	13.8	-2.3	1.05	1.04	1.16
4,775.0	5.86	66.45	4,774.5	3.4	16.0	-3.3	2.80	2.68	8.40
4,800.0	6.35	68.45	4,799.3	4.4	18.4	-4.3	2.14	1.96	8.00
4,825.0	6.55	69.39	4,824.2	5.4	21.1	-5.2	0.90	0.80	3.76
4,850.0	6.54	69.32	4,849.0	6.4	23.7	-6.2	0.05	-0.04	-0.28
4,875.0	6.54	69.63	4,873.8	7.4	26.4	-7.2	0.14	0.00	1.24
4,900.0	6.63	68.97	4,898.7	8.4	29.1	-8.2	0.47	0.36	-2.64
4,925.0	6.34	67.28	4,923.5	9.5	31.7	-9.2	1.39	-1.16	-6.76
4,950.0	5.92	66.21	4,948.4	10.5	34.1	-10.3	1.74	-1.68	-4.28
4,975.0	5.19	62.43	4,973.2	11.6	36.3	-11.3	3.26	-2.92	-15.12
5,000.0	4.53	60.73	4,998.1	12.6	38.2	-12.3	2.70	-2.64	-6.80
5,025.0	3.97	56.58	5,023.1	13.6	39.8	-13.2	2.55	-2.24	-16.60
5,050.0	3.51	53.03	5,048.0	14.5	41.1	-14.1	2.06	-1.84	-14.20
5,075.0	3.32	48.49	5,073.0	15.4	42.3	-15.1	1.32	-0.76	-18.16
5,100.0	3.10	43.07	5,097.9	16.4	43.3	-16.0	1.50	-0.88	-21.68
5,125.0	2.80	38.30	5,122.9	17.4	44.1	-17.0	1.55	-1.20	-19.08
5,150.0	2.50	31.84	5,147.9	18.3	44.8	-17.9	1.69	-1.20	-25.84
5,175.0	2.25	28.64	5,172.9	19.2	45.3	-18.8	1.13	-1.00	-12.80
5,200.0	2.27	30.57	5,197.8	20.1	45.8	-19.7	0.31	0.08	7.72
5,225.0	2.24	28.62	5,222.8	20.9	46.3	-20.5	0.33	-0.12	-7.80
5,250.0	2.03	23.81	5,247.8	21.8	46.7	-21.4	1.10	-0.84	-19.24
5,275.0	1.75	20.46	5,272.8	22.5	47.0	-22.1	1.20	-1.12	-13.40
5,300.0	1.54	16.04	5,297.8	23.2	47.2	-22.8	0.98	-0.84	-17.68
5,325.0	1.35	5.58	5,322.8	23.8	47.3	-23.4	1.30	-0.76	-41.84
5,350.0	1.18	0.06	5,347.8	24.4	47.4	-24.0	0.84	-0.68	-22.08
5,375.0	1.15	343.78	5,372.8	24.9	47.3	-24.5	1.32	-0.12	-65.12
5,400.0	1.20	335.24	5,397.8	25.3	47.1	-24.9	0.73	0.20	-34.16
5,425.0	1.32	319.12	5,422.8	25.8	46.8	-25.4	1.49	0.48	-64.48
5,450.0	1.44	304.84	5,447.7	26.2	46.4	-25.8	1.45	0.48	-57.12
5,475.0	1.67	299.32	5,472.7	26.6	45.8	-26.2	1.10	0.92	-22.08
5,500.0	2.00	294.14	5,497.7	26.9	45.1	-26.5	1.48	1.32	-20.72



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #603H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,525.0	2.30	288.10	5,522.7	27.2	44.2	-26.9	1.50	1.20	-24.16
5,550.0	2.32	286.46	5,547.7	27.5	43.2	-27.2	0.28	0.08	-6.56
5,575.0	2.75	283.62	5,572.7	27.8	42.2	-27.5	1.79	1.72	-11.36
5,600.0	2.77	284.52	5,597.6	28.1	41.0	-27.8	0.19	0.08	3.60
5,625.0	3.12	279.89	5,622.6	28.4	39.8	-28.1	1.69	1.40	-18.52
5,650.0	3.48	276.77	5,647.6	28.6	38.3	-28.3	1.61	1.44	-12.48
5,675.0	3.60	275.66	5,672.5	28.8	36.8	-28.5	0.55	0.48	-4.44
5,700.0	3.59	276.72	5,697.5	28.9	35.2	-28.6	0.27	-0.04	4.24
5,725.0	3.56	276.40	5,722.4	29.1	33.7	-28.8	0.14	-0.12	-1.28
5,750.0	3.49	274.71	5,747.4	29.3	32.2	-29.0	0.50	-0.28	-6.76
5,775.0	3.57	275.29	5,772.3	29.4	30.6	-29.1	0.35	0.32	2.32
5,800.0	3.47	273.98	5,797.3	29.5	29.1	-29.3	0.51	-0.40	-5.24
5,825.0	3.51	272.17	5,822.2	29.6	27.6	-29.4	0.47	0.16	-7.24
5,850.0	3.67	269.86	5,847.2	29.6	26.0	-29.4	0.86	0.64	-9.24
5,875.0	3.48	268.24	5,872.1	29.6	24.5	-29.4	0.86	-0.76	-6.48
5,900.0	3.41	268.81	5,897.1	29.6	23.0	-29.4	0.31	-0.28	2.28
5,925.0	3.57	267.11	5,922.0	29.5	21.4	-29.3	0.76	0.64	-6.80
5,950.0	3.42	262.98	5,947.0	29.4	19.9	-29.2	1.17	-0.60	-16.52
5,975.0	3.43	262.49	5,971.9	29.2	18.4	-29.0	0.12	0.04	-1.96
6,000.0	3.36	260.98	5,996.9	29.0	17.0	-28.8	0.45	-0.28	-6.04
6,025.0	3.33	257.77	6,021.9	28.7	15.5	-28.6	0.76	-0.12	-12.84
6,050.0	3.29	254.12	6,046.8	28.4	14.1	-28.2	0.86	-0.16	-14.60
6,075.0	3.26	255.18	6,071.8	28.0	12.8	-27.9	0.27	-0.12	4.24
6,100.0	3.15	255.63	6,096.7	27.6	11.4	-27.5	0.45	-0.44	1.80
6,125.0	3.23	252.57	6,121.7	27.2	10.1	-27.2	0.75	0.32	-12.24
6,150.0	3.16	249.04	6,146.7	26.8	8.8	-26.7	0.84	-0.28	-14.12
6,175.0	3.10	245.69	6,171.6	26.3	7.5	-26.2	0.77	-0.24	-13.40
6,200.0	2.99	243.47	6,196.6	25.7	6.3	-25.6	0.64	-0.44	-8.88
6,225.0	2.98	239.63	6,221.6	25.1	5.1	-25.0	0.80	-0.04	-15.36
6,250.0	2.99	234.98	6,246.5	24.4	4.1	-24.3	0.97	0.04	-18.60
6,275.0	2.96	230.46	6,271.5	23.6	3.0	-23.6	0.95	-0.12	-18.08
6,300.0	3.01	226.05	6,296.4	22.7	2.1	-22.7	0.94	0.20	-17.64
6,325.0	2.94	223.30	6,321.4	21.8	1.1	-21.8	0.64	-0.28	-11.00
6,350.0	2.85	220.95	6,346.4	20.9	0.3	-20.9	0.60	-0.36	-9.40
6,375.0	3.01	218.49	6,371.4	19.9	-0.5	-19.9	0.81	0.64	-9.84
6,400.0	3.11	211.58	6,396.3	18.8	-1.3	-18.8	1.53	0.40	-27.64
6,425.0	3.06	209.42	6,421.3	17.6	-2.0	-17.6	0.51	-0.20	-8.64
6,450.0	3.08	209.08	6,446.2	16.5	-2.6	-16.5	0.11	0.08	-1.36
6,475.0	3.17	204.82	6,471.2	15.2	-3.2	-15.3	1.00	0.36	-17.04
6,500.0	3.24	203.16	6,496.2	14.0	-3.8	-14.0	0.46	0.28	-6.64
6,525.0	3.15	200.40	6,521.1	12.7	-4.3	-12.7	0.71	-0.36	-11.04
6,550.0	3.16	199.29	6,546.1	11.4	-4.8	-11.4	0.25	0.04	-4.44



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #603H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)

MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)

North Reference: Grid

Survey Calculation Method: Minimum Curvature

Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,575.0	3.23	196.60	6,571.1	10.1	-5.2	-10.1	0.66	0.28	-10.76
6,600.0	3.25	191.87	6,596.0	8.7	-5.6	-8.7	1.07	0.08	-18.92
6,625.0	3.27	190.31	6,621.0	7.3	-5.8	-7.3	0.36	0.08	-6.24
6,650.0	3.32	190.03	6,645.9	5.9	-6.1	-5.9	0.21	0.20	-1.12
6,675.0	3.23	189.96	6,670.9	4.5	-6.3	-4.5	0.36	-0.36	-0.28
6,700.0	2.98	188.23	6,695.9	3.1	-6.6	-3.2	1.07	-1.00	-6.92
6,725.0	2.60	186.52	6,720.8	1.9	-6.7	-2.0	1.56	-1.52	-6.84
6,750.0	2.35	187.56	6,745.8	0.9	-6.8	-0.9	1.02	-1.00	4.16
6,775.0	1.91	188.72	6,770.8	-0.1	-7.0	0.0	1.77	-1.76	4.64
6,800.0	1.47	186.17	6,795.8	-0.8	-7.1	0.7	1.79	-1.76	-10.20
6,825.0	1.25	187.75	6,820.8	-1.4	-7.1	1.3	0.89	-0.88	6.32
6,850.0	0.84	185.58	6,845.8	-1.8	-7.2	1.8	1.65	-1.64	-8.68
6,875.0	0.52	180.48	6,870.8	-2.1	-7.2	2.1	1.30	-1.28	-20.40
6,900.0	0.26	169.68	6,895.8	-2.3	-7.2	2.2	1.08	-1.04	-43.20
6,925.0	0.09	195.96	6,920.8	-2.4	-7.2	2.3	0.73	-0.68	105.12
6,950.0	0.06	195.92	6,945.8	-2.4	-7.2	2.3	0.12	-0.12	-0.16
6,975.0	0.10	136.19	6,970.8	-2.4	-7.2	2.4	0.35	0.16	-238.92
7,000.0	0.01	51.33	6,995.8	-2.4	-7.2	2.4	0.40	-0.36	-339.44
7,025.0	0.05	95.43	7,020.8	-2.4	-7.2	2.4	0.17	0.16	176.40
7,050.0	0.07	310.13	7,045.8	-2.4	-7.2	2.4	0.46	0.08	-581.20
7,075.0	0.08	229.96	7,070.8	-2.4	-7.2	2.4	0.39	0.04	-320.68
7,100.0	0.05	190.56	7,095.8	-2.5	-7.2	2.4	0.21	-0.12	-157.60
7,125.0	0.04	294.70	7,120.8	-2.5	-7.2	2.4	0.29	-0.04	416.56
7,150.0	0.09	254.69	7,145.8	-2.5	-7.3	2.4	0.26	0.20	-160.04
7,175.0	0.10	142.94	7,170.8	-2.5	-7.3	2.4	0.63	0.04	-447.00
7,200.0	0.10	78.88	7,195.8	-2.5	-7.2	2.4	0.42	0.00	-256.24
7,225.0	0.09	347.36	7,220.8	-2.5	-7.2	2.4	0.55	-0.04	-366.08
7,250.0	0.08	230.76	7,245.8	-2.5	-7.2	2.4	0.58	-0.04	-466.40
7,275.0	0.13	121.67	7,270.8	-2.5	-7.2	2.4	0.69	0.20	-436.36
7,300.0	0.06	98.88	7,295.8	-2.5	-7.2	2.5	0.31	-0.28	-91.16
7,325.0	0.01	292.74	7,320.8	-2.5	-7.2	2.5	0.28	-0.20	-664.56
7,350.0	0.12	170.69	7,345.8	-2.5	-7.2	2.5	0.50	0.44	-488.20
7,375.0	0.12	102.25	7,370.8	-2.6	-7.1	2.5	0.54	0.00	-273.76
7,400.0	0.04	329.18	7,395.8	-2.6	-7.1	2.5	0.60	-0.32	-532.28
7,425.0	0.06	273.34	7,420.8	-2.6	-7.1	2.5	0.20	0.08	-223.36
7,450.0	0.04	168.61	7,445.8	-2.6	-7.1	2.5	0.32	-0.08	-418.92
7,475.0	0.08	65.70	7,470.8	-2.6	-7.1	2.5	0.39	0.16	-411.64
7,500.0	0.07	107.85	7,495.8	-2.6	-7.1	2.5	0.22	-0.04	168.60
7,525.0	0.03	29.12	7,520.8	-2.6	-7.1	2.5	0.28	-0.16	-314.92
7,550.0	0.09	165.36	7,545.8	-2.6	-7.1	2.5	0.45	0.24	544.96
7,575.0	0.07	115.98	7,570.8	-2.6	-7.1	2.5	0.28	-0.08	-197.52
7,600.0	0.09	75.53	7,595.8	-2.6	-7.0	2.6	0.23	0.08	-161.80



Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well COONSKIN FEE #603H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
Site:	BULLDOG	MD Reference:	RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
Well:	COONSKIN FEE #603H	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)
7,625.0	0.04	25.07	7,620.8	-2.6	-7.0	2.5	0.29	-0.20	-201.84
7,650.0	0.10	235.26	7,645.8	-2.6	-7.0	2.5	0.54	0.24	-599.24
7,675.0	0.07	191.49	7,670.8	-2.6	-7.0	2.6	0.28	-0.12	-175.08
7,700.0	0.08	117.11	7,695.8	-2.7	-7.0	2.6	0.36	0.04	-297.52
7,725.0	0.03	23.95	7,720.8	-2.7	-7.0	2.6	0.35	-0.20	-372.64
7,750.0	0.07	352.32	7,745.8	-2.6	-7.0	2.6	0.19	0.16	-126.52
7,775.0	0.03	248.88	7,770.8	-2.6	-7.0	2.6	0.33	-0.16	-413.76
7,800.0	0.08	140.42	7,795.8	-2.6	-7.0	2.6	0.38	0.20	-433.84
7,825.0	0.19	104.08	7,820.8	-2.7	-7.0	2.6	0.54	0.44	-145.36
7,850.0	0.26	95.50	7,845.8	-2.7	-6.9	2.6	0.31	0.28	-34.32
7,875.0	0.15	92.05	7,870.8	-2.7	-6.8	2.6	0.44	-0.44	-13.80
7,900.0	0.03	13.52	7,895.8	-2.7	-6.7	2.6	0.59	-0.48	-314.12
7,925.0	0.01	218.03	7,920.8	-2.7	-6.7	2.6	0.16	-0.08	-621.96
7,950.0	0.15	107.91	7,945.8	-2.7	-6.7	2.6	0.61	0.56	-440.48
7,975.0	0.11	107.21	7,970.8	-2.7	-6.6	2.6	0.16	-0.16	-2.80
8,000.0	0.12	95.70	7,995.8	-2.7	-6.6	2.7	0.10	0.04	-46.04
8,025.0	0.13	42.50	8,020.8	-2.7	-6.6	2.6	0.45	0.04	-212.80
8,050.0	0.14	12.35	8,045.8	-2.6	-6.5	2.6	0.28	0.04	-120.60
8,075.0	0.04	28.61	8,070.8	-2.6	-6.5	2.5	0.41	-0.40	65.04
8,100.0	0.14	58.74	8,095.8	-2.6	-6.5	2.5	0.43	0.40	120.52
8,125.0	0.17	28.20	8,120.8	-2.5	-6.4	2.5	0.35	0.12	-122.16
8,150.0	0.09	36.38	8,145.8	-2.5	-6.4	2.4	0.33	-0.32	32.72
8,175.0	0.10	73.57	8,170.8	-2.5	-6.4	2.4	0.25	0.04	148.76
8,200.0	0.10	48.48	8,195.8	-2.4	-6.3	2.4	0.17	0.00	-100.36
8,225.0	0.09	31.81	8,220.8	-2.4	-6.3	2.4	0.12	-0.04	-66.68
8,250.0	0.01	276.40	8,245.8	-2.4	-6.3	2.3	0.38	-0.32	-461.64
8,275.0	0.14	58.24	8,270.8	-2.4	-6.3	2.3	0.59	0.52	567.36
8,300.0	0.11	36.80	8,295.8	-2.3	-6.2	2.3	0.22	-0.12	-85.76
8,325.0	0.15	1.72	8,320.8	-2.3	-6.2	2.2	0.35	0.16	-140.32
8,350.0	0.07	15.00	8,345.8	-2.2	-6.2	2.2	0.33	-0.32	53.12
8,375.0	0.14	67.37	8,370.8	-2.2	-6.2	2.2	0.45	0.28	209.48
8,400.0	0.14	20.73	8,395.8	-2.2	-6.2	2.1	0.44	0.00	-186.56
8,425.0	0.09	51.22	8,420.8	-2.1	-6.1	2.1	0.31	-0.20	121.96
8,450.0	0.16	105.22	8,445.8	-2.1	-6.1	2.1	0.52	0.28	216.00
8,475.0	0.12	41.73	8,470.8	-2.1	-6.0	2.1	0.60	-0.16	-253.96
8,500.0	0.05	44.88	8,495.8	-2.1	-6.0	2.0	0.28	-0.28	12.60
8,525.0	0.04	219.20	8,520.8	-2.1	-6.0	2.0	0.36	-0.04	697.28
8,550.0	0.12	123.66	8,545.8	-2.1	-6.0	2.1	0.52	0.32	-382.16
8,575.0	0.07	83.39	8,570.8	-2.1	-5.9	2.1	0.32	-0.20	-161.08
8,600.0	0.04	325.64	8,595.8	-2.1	-5.9	2.1	0.38	-0.12	-471.00
8,625.0	0.05	152.07	8,620.8	-2.1	-5.9	2.1	0.36	0.04	-694.28
8,650.0	0.07	80.77	8,645.8	-2.1	-5.9	2.1	0.29	0.08	-285.20



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #603H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #603H

RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)

RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)

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)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
8,675.0	0.14	56.50	8,670.8	-2.1	-5.9	2.1	0.33	0.28	-97.08
8,700.0	0.06	357.18	8,695.8	-2.1	-5.8	2.0	0.48	-0.32	-237.28
8,725.0	0.01	351.42	8,720.8	-2.1	-5.9	2.0	0.20	-0.20	-23.04
8,750.0	0.09	88.95	8,745.8	-2.1	-5.8	2.0	0.37	0.32	390.12
8,775.0	0.09	54.03	8,770.8	-2.0	-5.8	2.0	0.22	0.00	-139.68
8,800.0	0.11	324.91	8,795.8	-2.0	-5.8	2.0	0.56	0.08	-356.48
8,825.0	0.08	171.18	8,820.8	-2.0	-5.8	2.0	0.74	-0.12	-614.92
8,850.0	0.11	82.24	8,845.8	-2.0	-5.8	2.0	0.54	0.12	-355.76
8,875.0	0.14	59.20	8,870.8	-2.0	-5.7	2.0	0.23	0.12	-92.16
8,900.0	0.17	50.97	8,895.8	-2.0	-5.7	1.9	0.15	0.12	-32.92
8,925.0	0.24	104.68	8,920.8	-2.0	-5.6	1.9	0.78	0.28	214.84
8,950.0	0.30	70.42	8,945.8	-2.0	-5.5	1.9	0.68	0.24	-137.04
8,975.0	0.24	62.67	8,970.8	-1.9	-5.4	1.9	0.28	-0.24	-31.00
9,000.0	0.21	76.52	8,995.8	-1.9	-5.3	1.8	0.25	-0.12	55.40
9,025.0	0.23	98.82	9,020.8	-1.9	-5.2	1.8	0.35	0.08	89.20
9,050.0	0.31	102.72	9,045.8	-1.9	-5.1	1.8	0.33	0.32	15.60
9,075.0	0.22	70.71	9,070.8	-1.9	-5.0	1.8	0.68	-0.36	-128.04
9,100.0	0.19	78.87	9,095.8	-1.9	-4.9	1.8	0.17	-0.12	32.64
9,125.0	0.28	119.65	9,120.8	-1.9	-4.8	1.8	0.74	0.36	163.12
9,150.0	0.30	97.93	9,145.8	-1.9	-4.7	1.9	0.44	0.08	-86.88
9,175.0	0.29	71.49	9,170.8	-1.9	-4.5	1.9	0.54	-0.04	-105.76
9,200.0	0.20	93.34	9,195.8	-1.9	-4.4	1.9	0.51	-0.36	87.40
9,225.0	0.34	119.22	9,220.8	-1.9	-4.3	1.9	0.73	0.56	103.52
9,250.0	0.34	119.44	9,245.8	-2.0	-4.2	2.0	0.01	0.00	0.88
9,275.0	0.31	121.68	9,270.8	-2.1	-4.1	2.0	0.13	-0.12	8.96
9,300.0	0.36	133.79	9,295.8	-2.2	-4.0	2.1	0.35	0.20	48.44
9,325.0	0.35	132.41	9,320.8	-2.3	-3.8	2.2	0.05	-0.04	-5.52
9,350.0	0.36	130.91	9,345.7	-2.4	-3.7	2.4	0.05	0.04	-6.00
9,375.0	0.38	120.18	9,370.7	-2.5	-3.6	2.4	0.29	0.08	-42.92
9,400.0	0.38	118.68	9,395.7	-2.6	-3.5	2.5	0.04	0.00	-6.00
9,425.0	0.46	114.78	9,420.7	-2.6	-3.3	2.6	0.34	0.32	-15.60
9,450.0	0.40	104.38	9,445.7	-2.7	-3.1	2.7	0.39	-0.24	-41.60
9,475.0	0.37	114.80	9,470.7	-2.8	-3.0	2.7	0.30	-0.12	41.68
9,500.0	0.32	109.19	9,495.7	-2.8	-2.8	2.8	0.24	-0.20	-22.44
9,525.0	0.24	119.21	9,520.7	-2.9	-2.7	2.8	0.37	-0.32	40.08
9,550.0	0.43	132.33	9,545.7	-3.0	-2.6	2.9	0.81	0.76	52.48
9,575.0	0.41	113.03	9,570.7	-3.1	-2.4	3.0	0.57	-0.08	-77.20
9,600.0	0.37	118.51	9,595.7	-3.1	-2.3	3.1	0.22	-0.16	21.92
9,625.0	0.33	102.57	9,620.7	-3.2	-2.1	3.2	0.42	-0.16	-63.76
9,650.0	0.34	112.35	9,645.7	-3.2	-2.0	3.2	0.23	0.04	39.12
9,675.0	0.21	123.34	9,670.7	-3.3	-1.9	3.3	0.56	-0.52	43.96
9,700.0	0.19	107.83	9,695.7	-3.3	-1.8	3.3	0.23	-0.08	-62.04



Survey Report

Company: NORTHERN DELAWARE BASIN
 Project: LEA COUNTY, NM
 Site: BULLDOG
 Well: COONSKIN FEE #603H
 Wellbore: OWB
 Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
 TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
 MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
 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)
9,725.0	0.11	120.28	9,720.7	-3.3	-1.8	3.3	0.34	-0.32	49.80
9,750.0	0.14	88.51	9,745.7	-3.3	-1.7	3.3	0.30	0.12	-127.08
9,775.0	0.14	72.26	9,770.7	-3.3	-1.7	3.3	0.16	0.00	-65.00
9,800.0	0.08	74.59	9,795.7	-3.3	-1.6	3.3	0.24	-0.24	9.32
9,825.0	0.14	78.02	9,820.7	-3.3	-1.6	3.3	0.24	0.24	13.72
9,850.0	0.12	30.17	9,845.7	-3.3	-1.5	3.3	0.43	-0.08	-191.40
9,875.0	0.13	341.27	9,870.7	-3.2	-1.5	3.2	0.42	0.04	-195.60
9,900.0	0.15	340.23	9,895.7	-3.2	-1.5	3.2	0.08	0.08	-4.16
9,925.0	0.18	321.38	9,920.7	-3.1	-1.6	3.1	0.25	0.12	-75.40
9,950.0	0.15	315.46	9,945.7	-3.1	-1.6	3.0	0.14	-0.12	-23.68
9,975.0	0.08	309.59	9,970.7	-3.0	-1.7	3.0	0.28	-0.28	-23.48
10,000.0	0.10	342.37	9,995.7	-3.0	-1.7	3.0	0.22	0.08	131.12
10,025.0	0.19	276.13	10,020.7	-3.0	-1.7	3.0	0.70	0.36	-264.96
10,050.0	0.20	288.16	10,045.7	-3.0	-1.8	2.9	0.17	0.04	48.12
10,075.0	0.26	284.91	10,070.7	-2.9	-1.9	2.9	0.25	0.24	-13.00
10,100.0	0.29	258.38	10,095.7	-2.9	-2.0	2.9	0.52	0.12	-106.12
10,125.0	0.34	245.59	10,120.7	-3.0	-2.1	2.9	0.34	0.20	-51.16
10,150.0	0.39	212.36	10,145.7	-3.1	-2.3	3.0	0.86	0.20	-132.92
10,175.0	0.58	214.69	10,170.7	-3.2	-2.4	3.2	0.76	0.76	9.32
10,200.0	0.57	196.09	10,195.7	-3.5	-2.5	3.4	0.74	-0.04	-74.40
10,225.0	0.69	180.12	10,220.7	-3.7	-2.5	3.7	0.85	0.48	-63.88
10,250.0	0.76	168.70	10,245.7	-4.1	-2.5	4.0	0.64	0.28	-45.68
10,275.0	0.94	166.45	10,270.7	-4.4	-2.4	4.4	0.73	0.72	-9.00
10,300.0	0.89	157.98	10,295.7	-4.8	-2.3	4.8	0.58	-0.20	-33.88
10,325.0	0.96	163.60	10,320.7	-5.2	-2.2	5.2	0.46	0.28	22.48
10,350.0	0.99	156.48	10,345.7	-5.6	-2.0	5.6	0.50	0.12	-28.48
10,375.0	1.06	165.93	10,370.7	-6.0	-1.9	6.0	0.73	0.28	37.80
10,400.0	1.08	161.91	10,395.7	-6.4	-1.7	6.4	0.31	0.08	-16.08
10,425.0	1.11	151.87	10,420.7	-6.9	-1.5	6.9	0.78	0.12	-40.16
10,450.0	1.13	159.50	10,445.7	-7.3	-1.3	7.3	0.60	0.08	30.52
10,475.0	1.07	163.21	10,470.7	-7.8	-1.2	7.8	0.37	-0.24	14.84
10,500.0	1.02	158.85	10,495.7	-8.2	-1.0	8.2	0.38	-0.20	-17.44
10,525.0	0.96	159.00	10,520.7	-8.6	-0.9	8.6	0.24	-0.24	0.60
10,550.0	0.80	152.08	10,545.7	-9.0	-0.7	9.0	0.77	-0.64	-27.68
10,575.0	0.70	161.69	10,570.7	-9.3	-0.6	9.3	0.64	-0.40	38.44
10,600.0	0.59	163.20	10,595.7	-9.5	-0.5	9.5	0.45	-0.44	6.04
10,625.0	0.50	167.66	10,620.7	-9.8	-0.5	9.8	0.40	-0.36	17.84
10,650.0	0.47	167.82	10,645.7	-10.0	-0.4	10.0	0.12	-0.12	0.64
10,675.0	0.51	180.95	10,670.7	-10.2	-0.4	10.2	0.48	0.16	52.52
10,700.0	0.36	184.48	10,695.7	-10.4	-0.4	10.4	0.61	-0.60	14.12
10,725.0	0.54	182.05	10,720.7	-10.6	-0.4	10.6	0.72	0.72	-9.72
10,750.0	0.53	175.51	10,745.7	-10.8	-0.4	10.8	0.25	-0.04	-26.16



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #603H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,775.0	0.60	171.62	10,770.7	-11.0	-0.4	11.0	0.32	0.28	-15.56
10,800.0	0.50	173.01	10,795.7	-11.3	-0.3	11.3	0.40	-0.40	5.56
10,825.0	0.31	166.93	10,820.7	-11.5	-0.3	11.5	0.78	-0.76	-24.32
10,850.0	0.26	143.30	10,845.7	-11.6	-0.3	11.6	0.51	-0.20	-94.52
10,875.0	0.25	93.50	10,870.7	-11.6	-0.2	11.6	0.86	-0.04	-199.20
10,900.0	0.27	90.93	10,895.7	-11.6	-0.1	11.6	0.09	0.08	-10.28
10,925.0	0.25	93.48	10,920.7	-11.6	0.0	11.6	0.09	-0.08	10.20
10,950.0	0.34	54.22	10,945.7	-11.6	0.2	11.6	0.86	0.36	-157.04
10,975.0	0.30	54.94	10,970.7	-11.5	0.3	11.5	0.16	-0.16	2.88
11,000.0	0.22	67.33	10,995.7	-11.4	0.4	11.4	0.39	-0.32	49.56
11,025.0	0.37	21.81	11,020.7	-11.4	0.4	11.4	1.07	0.60	-182.08
11,050.0	0.65	4.14	11,045.7	-11.1	0.5	11.1	1.27	1.12	-70.68
11,075.0	0.84	352.19	11,070.7	-10.8	0.5	10.8	0.98	0.76	-47.80
11,100.0	1.13	344.01	11,095.7	-10.4	0.4	10.4	1.29	1.16	-32.72
11,125.0	1.33	343.94	11,120.7	-9.9	0.2	9.9	0.80	0.80	-0.28
11,150.0	1.54	342.99	11,145.7	-9.3	0.1	9.3	0.85	0.84	-3.80
11,175.0	1.86	345.23	11,170.6	-8.6	-0.1	8.6	1.31	1.28	8.96
11,200.0	2.13	343.56	11,195.6	-7.7	-0.4	7.7	1.10	1.08	-6.68
11,225.0	2.42	343.24	11,220.6	-6.8	-0.7	6.8	1.16	1.16	-1.28
11,250.0	2.52	345.59	11,245.6	-5.7	-1.0	5.7	0.57	0.40	9.40
11,275.0	2.51	344.95	11,270.6	-4.7	-1.2	4.7	0.12	-0.04	-2.56
11,300.0	2.64	346.40	11,295.5	-3.6	-1.5	3.6	0.58	0.52	5.80
11,325.0	2.54	351.08	11,320.5	-2.5	-1.7	2.5	0.94	-0.40	18.72
11,350.0	2.07	359.86	11,345.5	-1.5	-1.8	1.5	2.35	-1.88	35.12
11,375.0	1.40	18.86	11,370.5	-0.7	-1.7	0.7	3.50	-2.68	76.00
11,388.2	1.23	27.53	11,383.7	-0.5	-1.6	0.5	1.98	-1.29	65.73
11,565.0	1.30	31.09	11,560.4	2.9	0.3	-2.9	0.06	0.04	2.01
11,660.0	1.19	35.45	11,655.4	4.7	1.4	-4.6	0.15	-0.12	4.59
11,691.0	1.63	152.87	11,686.4	4.5	1.8	-4.5	7.81	1.42	378.77
11,722.0	7.03	169.53	11,717.3	2.3	2.4	-2.3	17.70	17.42	53.74
11,754.0	11.51	177.35	11,748.9	-2.8	2.9	2.9	14.51	14.00	24.44
11,785.0	16.05	179.70	11,779.0	-10.2	3.0	10.2	14.75	14.65	7.58
11,817.0	19.47	179.49	11,809.5	-20.0	3.1	20.0	10.69	10.69	-0.66
11,848.0	21.79	178.68	11,838.5	-30.9	3.3	30.9	7.54	7.48	-2.61
11,880.0	23.26	178.61	11,868.0	-43.2	3.6	43.2	4.59	4.59	-0.22
11,911.0	25.76	172.35	11,896.2	-56.0	4.6	56.0	11.62	8.06	-20.19
11,942.0	28.89	181.78	11,923.8	-70.1	5.3	70.2	17.20	10.10	30.42
11,974.0	34.35	183.28	11,951.0	-86.9	4.5	86.9	17.24	17.06	4.69
12,005.0	36.36	180.27	11,976.3	-104.8	4.0	104.8	8.58	6.48	-9.71
12,037.0	36.44	180.17	12,002.1	-123.8	3.9	123.8	0.31	0.25	-0.31
12,068.0	38.13	177.71	12,026.7	-142.6	4.3	142.6	7.27	5.45	-7.94
12,100.0	40.12	176.56	12,051.5	-162.7	5.3	162.8	6.62	6.22	-3.59



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #603H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
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)
12,131.0	41.88	175.84	12,074.9	-183.0	6.6	183.1	5.88	5.68	-2.32
12,162.0	44.69	175.18	12,097.5	-204.2	8.3	204.3	9.18	9.06	-2.13
12,194.0	49.90	176.92	12,119.2	-227.7	9.9	227.7	16.76	16.28	5.44
12,225.0	53.81	179.05	12,138.3	-252.0	10.7	252.1	13.72	12.61	6.87
12,257.0	58.12	179.07	12,156.3	-278.5	11.2	278.6	13.47	13.47	0.06
12,288.0	61.17	178.38	12,171.9	-305.3	11.8	305.4	10.02	9.84	-2.23
12,319.0	63.45	177.96	12,186.3	-332.7	12.7	332.8	7.45	7.35	-1.35
12,350.0	65.65	177.67	12,199.6	-360.7	13.7	360.8	7.15	7.10	-0.94
12,382.0	67.89	179.60	12,212.3	-390.1	14.4	390.2	8.93	7.00	6.03
12,413.0	70.46	179.89	12,223.3	-419.0	14.6	419.1	8.34	8.29	0.94
12,445.0	73.28	181.42	12,233.2	-449.4	14.2	449.5	9.91	8.81	4.78
12,476.0	75.54	182.03	12,241.6	-479.3	13.3	479.4	7.53	7.29	1.97
12,508.0	77.35	181.93	12,249.1	-510.4	12.2	510.5	5.66	5.66	-0.31
12,539.0	81.00	182.79	12,254.9	-540.8	11.0	540.9	12.09	11.77	2.77
12,602.0	88.19	182.45	12,260.8	-603.4	8.1	603.5	11.43	11.41	-0.54
12,698.0	88.27	182.32	12,263.8	-699.3	4.1	699.3	0.16	0.08	-0.14
12,793.0	88.68	182.07	12,266.3	-794.2	0.5	794.1	0.51	0.43	-0.26
12,887.0	91.07	184.25	12,266.5	-888.0	-4.7	887.9	3.44	2.54	2.32
12,982.0	89.02	181.37	12,266.4	-982.9	-9.4	982.8	3.72	-2.16	-3.03
13,077.0	88.58	178.22	12,268.4	-1,077.9	-9.0	1,077.7	3.35	-0.46	-3.32
13,171.0	89.70	179.70	12,269.9	-1,171.8	-7.3	1,171.7	1.97	1.19	1.57
13,265.0	89.24	179.08	12,270.7	-1,265.8	-6.3	1,265.7	0.82	-0.49	-0.66
13,359.0	89.78	178.64	12,271.5	-1,359.8	-4.4	1,359.7	0.74	0.57	-0.47
13,454.0	87.91	177.33	12,273.4	-1,454.7	-1.1	1,454.6	2.40	-1.97	-1.38
13,548.0	86.23	176.38	12,278.2	-1,548.4	4.0	1,548.4	2.05	-1.79	-1.01
13,642.0	85.85	176.55	12,284.7	-1,642.0	9.8	1,642.1	0.44	-0.40	0.18
13,737.0	86.91	177.19	12,290.7	-1,736.7	15.0	1,736.8	1.30	1.12	0.67
13,831.0	87.65	180.14	12,295.2	-1,830.6	17.2	1,830.6	3.23	0.79	3.14
13,925.0	88.59	177.01	12,298.3	-1,924.5	19.5	1,924.6	3.47	1.00	-3.33
14,020.0	89.13	179.93	12,300.2	-2,019.4	22.1	2,019.5	3.13	0.57	3.07
14,116.0	86.82	178.77	12,303.6	-2,115.3	23.1	2,115.5	2.69	-2.41	-1.21
14,210.0	87.54	179.26	12,308.2	-2,209.2	24.8	2,209.3	0.93	0.77	0.52
14,303.0	90.61	179.68	12,309.7	-2,302.2	25.6	2,302.3	3.33	3.30	0.45
14,397.0	88.44	180.61	12,310.5	-2,396.2	25.4	2,396.3	2.51	-2.31	0.99
14,492.0	89.42	180.18	12,312.2	-2,491.1	24.7	2,491.3	1.13	1.03	-0.45
14,586.0	91.15	178.84	12,311.8	-2,585.1	25.5	2,585.3	2.33	1.84	-1.43
14,680.0	87.73	180.14	12,312.7	-2,679.1	26.4	2,679.2	3.89	-3.64	1.38
14,774.0	88.22	178.99	12,316.0	-2,773.0	27.1	2,773.2	1.33	0.52	-1.22
14,869.0	89.24	179.38	12,318.1	-2,868.0	28.4	2,868.1	1.15	1.07	0.41
14,963.0	89.85	179.12	12,318.9	-2,962.0	29.7	2,962.1	0.71	0.65	-0.28
15,058.0	89.82	176.94	12,319.1	-3,056.9	32.9	3,057.1	2.29	-0.03	-2.29
15,153.0	89.14	178.72	12,320.0	-3,151.9	36.5	3,152.1	2.01	-0.72	1.87



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #603H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #603H
TVD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
MD Reference: RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
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)
15,247.0	89.59	181.79	12,321.0	-3,245.8	36.1	3,246.0	3.30	0.48	3.27
15,342.0	88.41	181.58	12,322.7	-3,340.8	33.3	3,340.9	1.26	-1.24	-0.22
15,436.0	90.96	183.07	12,323.2	-3,434.7	29.5	3,434.8	3.14	2.71	1.59
15,530.0	85.85	180.12	12,325.8	-3,528.6	26.9	3,528.7	6.28	-5.44	-3.14
15,624.0	84.73	179.32	12,333.6	-3,622.3	27.3	3,622.4	1.46	-1.19	-0.85
15,719.0	88.88	178.87	12,338.8	-3,717.1	28.8	3,717.2	4.39	4.37	-0.47
15,813.0	89.51	182.16	12,340.2	-3,811.1	28.0	3,811.2	3.56	0.67	3.50
15,908.0	86.76	181.13	12,343.3	-3,906.0	25.3	3,906.0	3.09	-2.89	-1.08
16,002.0	87.65	178.25	12,347.8	-3,999.8	25.8	3,999.9	3.20	0.95	-3.06
16,097.0	88.28	174.39	12,351.2	-4,094.6	31.9	4,094.7	4.11	0.66	-4.06
16,191.0	89.33	174.07	12,353.2	-4,188.1	41.3	4,188.3	1.17	1.12	-0.34
16,286.0	89.92	176.20	12,353.8	-4,282.7	49.4	4,283.0	2.33	0.62	2.24
16,381.0	88.88	177.78	12,354.8	-4,377.6	54.4	4,377.9	1.99	-1.09	1.66
16,475.0	87.60	182.89	12,357.7	-4,471.5	53.8	4,471.8	5.60	-1.36	5.44
16,569.0	89.36	184.67	12,360.2	-4,565.2	47.6	4,565.5	2.66	1.87	1.89
16,664.0	88.96	185.64	12,361.6	-4,659.8	39.1	4,660.0	1.10	-0.42	1.02
16,758.0	86.56	184.15	12,365.2	-4,753.4	31.1	4,753.5	3.00	-2.55	-1.59
16,853.0	86.03	181.19	12,371.4	-4,848.1	26.7	4,848.2	3.16	-0.56	-3.12
16,948.0	85.75	181.10	12,378.2	-4,942.8	24.8	4,942.9	0.31	-0.29	-0.09
17,043.0	88.65	182.23	12,382.8	-5,037.7	22.0	5,037.7	3.28	3.05	1.19
17,137.0	88.91	181.63	12,384.8	-5,131.6	18.8	5,131.6	0.70	0.28	-0.64
17,232.0	89.84	180.11	12,385.9	-5,226.6	17.4	5,226.5	1.88	0.98	-1.60
17,326.0	88.96	179.04	12,386.9	-5,320.6	18.1	5,320.5	1.47	-0.94	-1.14
17,420.0	91.27	179.05	12,386.7	-5,414.6	19.7	5,414.5	2.46	2.46	0.01
17,515.0	90.13	178.04	12,385.5	-5,509.5	22.1	5,509.5	1.60	-1.20	-1.06
17,609.0	88.94	177.80	12,386.3	-5,603.5	25.5	5,603.5	1.29	-1.27	-0.26
17,704.0	89.59	178.46	12,387.5	-5,698.4	28.6	5,698.4	0.98	0.68	0.69
17,798.0	92.40	178.83	12,385.9	-5,792.3	30.8	5,792.4	3.02	2.99	0.39
17,893.0	86.23	176.71	12,387.0	-5,887.2	34.5	5,887.3	6.87	-6.49	-2.23
17,987.0	88.53	179.13	12,391.3	-5,981.0	37.9	5,981.1	3.55	2.45	2.57
18,082.0	87.93	179.66	12,394.2	-6,076.0	38.9	6,076.1	0.84	-0.63	0.56
18,177.0	90.04	180.25	12,395.9	-6,171.0	39.0	6,171.1	2.31	2.22	0.62
18,271.0	87.42	179.00	12,398.0	-6,264.9	39.6	6,265.0	3.09	-2.79	-1.33
18,366.0	84.67	178.14	12,404.5	-6,359.7	42.0	6,359.8	3.03	-2.89	-0.91
18,461.0	85.13	177.78	12,413.0	-6,454.2	45.3	6,454.4	0.61	0.48	-0.38
18,556.0	83.79	178.26	12,422.2	-6,548.7	48.6	6,548.9	1.50	-1.41	0.51
18,651.0	83.35	177.84	12,432.8	-6,643.1	51.8	6,643.3	0.64	-0.46	-0.44
18,745.0	83.31	177.67	12,443.7	-6,736.4	55.5	6,736.6	0.18	-0.04	-0.18
18,840.0	86.34	177.01	12,452.3	-6,830.9	59.9	6,831.1	3.26	3.19	-0.69
18,934.0	88.64	178.63	12,456.4	-6,924.7	63.4	6,925.0	2.99	2.45	1.72
19,028.0	89.01	180.14	12,458.3	-7,018.7	64.4	7,019.0	1.65	0.39	1.61
19,123.0	90.32	182.43	12,458.9	-7,113.6	62.3	7,113.9	2.78	1.38	2.41



Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well COONSKIN FEE #603H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
Site:	BULLDOG	MD Reference:	RKB=3306.9+30 @ 3336.9usft (SCANDRILL QUEST)
Well:	COONSKIN FEE #603H	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)
19,217.0	88.47	182.27	12,459.9	-7,207.5	58.5	7,207.8	1.98	-1.97	-0.17
19,312.0	87.60	180.77	12,463.1	-7,302.5	55.9	7,302.7	1.82	-0.92	-1.58
19,407.0	89.44	182.77	12,465.6	-7,397.4	53.0	7,397.6	2.86	1.94	2.11
19,501.0	87.94	183.22	12,467.7	-7,491.2	48.1	7,491.3	1.67	-1.60	0.48
19,596.0	90.64	184.26	12,468.9	-7,586.0	41.9	7,586.1	3.05	2.84	1.09
19,634.0	90.89	184.02	12,468.4	-7,623.9	39.2	7,623.9	0.91	0.66	-0.63
19,681.0	90.89	184.02	12,467.7	-7,670.8	35.9	7,670.8	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____

Fascinator Federal Com #603H

<u>Perfs</u>	<u>7 1/2% Acid (Gal)</u>	<u>Sand (#)</u>	<u>Fluid (Gal)</u>
1	3024	405293	462546
2	1512	404447	412944
3	1512	402211	363426
4	1512	398599	356370
5	1512	400929	414288
6	1512	409685	374766
7	1512	396085	363846
8	1512	400757	353262
9	1512	389213	354186
10	1512	398161	332094
11	1512	399427	351582
12	1512	395067	323526
13	1512	405252	384930
14	1512	412497	363510
15	1512	395284	319452
16	1512	417605	364266
17	1512	404145	338646
18	1512	424081	355782
19	1512	409016	350406
20	1512	404664	354690
21	1512	405293	339360
22	1512	404447	347298
23	1512	402211	350070
24	1512	398599	354900
25	1512	400929	345870
26	1512	409685	353766
27	1512	396085	383208
28	1512	400757	356160
29	1512	389213	339654
30	1512	398161	349524
31	1512	399427	418320
32	1512	395067	370230
33	1512	405252	335706
34	1512	412497	346248
35	1512	395284	342342
36	1512	417605	496356
37	1512	404145	331044
38	1512	424081	389130
39	1512	409016	363132
40	1512	404664	351792
41	1512	401409	337932
42	1512	398845	333816
43	1512	396425	334824
44	1512	392100	339024
45	1512	403095	331002
46	1512	381734	336420
47	1512	401880	339150
48	1512	386119	345744
Totals	71064	19,306,443	14,558,628

		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots
From Bottom to Top	22,340	12	5	22,159	25	5	21,952	34	5	21,764	24	5	21,566	25	5	
	22,328	20	5	22,135	25	5	21,937	25	5	21,739	23	5	21,546	29	5	
	22,308	25	4	22,110	25	4	21,912	29	4	21,716	26	4	21,517	25	4	
	22,283	25	4	22,085	29	4	21,883	20	4	21,690	25	4	21,492	25	4	
	22,258	25	4	22,056	20	4	21,863		4	21,665	25	4	21,467	25	4	
	22,233	24	4	22,036	25	4	21,838	25	4	21,640	25	4	21,442	24	4	
	22,209	25	3	22,011	25	3	21,813	25	3	21,615	24	3	21,418	25	3	
	22,184		3	21,986		3	21,788		3	21,591		3	21,393		3	
Plug to Plug		74	32	Plug to Plug	87	32	Plug to Plug	82	32	Plug to Plug	86	32	Plug to Plug	86	32	
Frac Plug		22,357	Total Shots	Frac Plug	22,172	Total Shots	Frac Plug	21,965	Total Shots	Frac Plug	21,776	Total Shots	Frac Plug	21,578	Total Shots	

		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots
From Bottom to Top	21,362	31	5	21,171	27	5	20,973	25	5	20,775	23	5	20,577	25	5	
	21,344	25	5	21,146	25	5	20,948	25	5	20,750	24	5	20,553	25	5	
	21,319	25	4	21,121	25	4	20,923	24	4	20,726	25	4	20,528	25	4	
	21,294	25	4	21,096	24	4	20,899	25	4	20,701	25	4	20,503	25	4	
	21,269	24	4	21,072	25	4	20,874	25	4	20,676	25	4	20,478	28	4	
	21,245	25	4	21,047	21	4	20,849	25	4	20,651	24	4	20,450	21	4	
	21,220	22	3	21,026	28	3	20,824	26	3	20,627	25	3	20,429	25	3	
	21,198		3	20,998		3	20,798		3	20,602		3	20,404		3	
Plug to Plug		87	32	Plug to Plug	87	32	Plug to Plug	86	32	Plug to Plug	86	32	Plug to Plug	90	32	
Frac Plug		21,381	Total Shots	Frac Plug	21,183	Total Shots	Frac Plug	20,985	Total Shots	Frac Plug	20,787	Total Shots	Frac Plug	20,593	Total Shots	

		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots
From Bottom to Top	20,380	24	5	20,175	32	5	19,984	25	5	19,740	71	5	19,589	24	5	
	20,355	25	5	20,157	25	5	19,959	24	5	19,720	20	5	19,564	23	5	
	20,330	25	4	20,132	24	4	19,935	25	4	19,700	20	4	19,541	27	4	
	20,305	21	4	20,108	25	4	19,910	28	4	19,680	20	4	19,514	24	4	
	20,284	28	4	20,083	25	4	19,882	22	4	19,660	20	4	19,490	25	4	
	20,256	25	4	20,058	24	4	19,860	24	4	19,640	20	4	19,465	25	4	
	20,231	24	3	20,034	25	3	19,836	25	3	19,620	7	3	19,440	24	3	
	20,207		3	20,009		3	19,811		3	19,613		3	19,416		3	
Plug to Plug		87	32	Plug to Plug	76	32	Plug to Plug	86	32	Plug to Plug	68	32	Plug to Plug	87	32	
Frac Plug		20,392	Total Shots	Frac Plug	20,184	Total Shots	Frac Plug	19,996	Total Shots	Frac Plug	19,748	Total Shots	Frac Plug	19,601	Total Shots	

		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots
From Bottom to Top	19,391	25	5	19,193	25	5	18,988	32	5	18,794	28	5	18,600	28	5	
	19,368	27	5	19,168	22	5	18,971	25	5	18,773	25	5	18,575	25	5	
	19,341	24	4	19,146	27	4	18,946	26	4	18,748	25	4	18,550	24	4	
	19,317	25	4	19,119	25	4	18,920	24	4	18,723	24	4	18,526	25	4	
	19,292	25	4	19,094	24	4	18,896	24	4	18,699	25	4	18,501	25	4	
	19,267	24	4	19,070	25	4	18,872	25	4	18,674	25	4	18,476	20	4	
	19,243	25	3	19,045	25	3	18,847	25	3	18,649	21	3	18,456	29	3	
	19,218		3	19,020		3	18,822		3	18,628		3	18,427		3	
Plug to Plug		83	32	Plug to Plug	86	32	Plug to Plug	80	32	Plug to Plug	87	32	Plug to Plug	86	32	
Frac Plug		19,400	Total Shots	Frac Plug	19,205	Total Shots	Frac Plug	19,000	Total Shots	Frac Plug	18,810	Total Shots	Frac Plug	18,612	Total Shots	

		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots
From Bottom to Top	18,402	25	5	18,204	25	5	18,000	31	5	17,809	25	5	17,611	27	5	
	18,377	24	5	18,180	25	5	17,985	28	5	17,784	28	5	17,586	24	5	
	18,353	25	4	18,155	25	4	17,957	27	4	17,756	21	4	17,562	25	4	
	18,328	25	4	18,130	24	4	17,930	22	4	17,735	25	4	17,537	29	4	
	18,303	27	4	18,106	25	4	17,908	25	4	17,710	25	4	17,508	20	4	
	18,276	22	4	18,081	25	4	17,883	25	4	17,685	24	4	17,488	25	4	
	18,254	25	3	18,056	25	3	17,858	24	3	17,661	23	3	17,463	25	3	
	18,229		3	18,031		3	17,834		3	17,638		3	17,438		3	
Plug to Plug		88	32	Plug to Plug	87	32	Plug to Plug	82	32	Plug to Plug	86	32	Plug to Plug	87	32	
Frac Plug		18,416	Total Shots	Frac Plug	18,217	Total Shots	Frac Plug	18,012	Total Shots	Frac Plug	17,821	Total Shots	Frac Plug	17,624	Total Shots	

		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots		Distance Between Perfs		Shots
From Bottom to Top	17,407	31	5	17,216	24	5	17,014	29	5	16,814	31	5	16,620	28	5	
	17,389	25	5	17,191	29	5	16,987	19	5	16,795	25	5	16,594	21	5	
	17,364	30	4	17,162	20	4	16,968	24	4	16,770	24	4	16,573	25	4	
	17,334	19	4	17,142	25	4	16,944	25	4	16,746	25	4	16,548	24	4	
	17,315	25	4	17,117	25	4	16,919	25	4	16,721	24	4	16,524	25	4	
	17,290	25	4	17,092	25	4	16,894	24	4	16,697	25	4	16,499	25	4	
	17,265	25	3	17,067	24	3	16,870	25	3	16,672	24	3	16,474	25	3	
	17,240		3	17,043		3	16,845		3	16,648		3	16,449		3	
Plug to Plug		86	32	Plug to Plug	86	32	Plug to Plug	82	32	Plug to Plug	87	32	Plug to Plug	84	32	
Frac Plug		17,420	Total Shots	Frac Plug	17,228	Total Shots	Frac Plug	17,026	Total Shots	Frac Plug	16,833	Total Shots	Frac Plug	16,632	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
	16,418	31	5	16,224	28	5	16,024	30	5	15,831	25	5	15,608	50	5
	16,400	25	5	16,198	21	5	16,004	24	5	15,803	21	5	15,589	23	5
	16,375	24	4	16,177	24	4	15,980	25	4	15,782	25	4	15,566	22	4
	16,351	25	4	16,153	25	4	15,955	25	4	15,757	24	4	15,544	23	4
	16,326	25	4	16,128	25	4	15,930	24	4	15,733	25	4	15,521	22	4
	16,301	25	4	16,103	24	4	15,906	25	4	15,708	25	4	15,499	23	4
	16,276	24	3	16,079	25	3	15,881	25	3	15,683	25	3	15,476	18	3
	16,252		3	16,054		3	15,856		3	15,658		3	15,458		3
	Plug to Plug	86	32	Plug to Plug	83	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	74	32
	Frac Plug	16,437	Total Shots	Frac Plug	16,236	Total Shots	Frac Plug	16,042	Total Shots	Frac Plug	15,844	Total Shots	Frac Plug	15,618	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
	15,436	22	5	15,238	25	5	15,040	25	5	14,833	34	5	14,645	25	5
	15,411	24	5	15,213	24	5	15,016	25	5	14,818	25	5	14,620	24	5
	15,387	25	4	15,189	25	4	14,991	25	4	14,793	24	4	14,596	25	4
	15,362	25	4	15,164	25	4	14,966	22	4	14,769	25	4	14,571	22	4
	15,337	25	4	15,139	21	4	14,944	27	4	14,744	29	4	14,549	28	4
	15,312	22	4	15,118	28	4	14,917	25	4	14,715	21	4	14,521	24	4
	15,290	27	3	15,090	25	3	14,892	25	3	14,694	24	3	14,497	25	3
	15,263		3	15,065		3	14,867		3	14,670		3	14,472		3
	Plug to Plug	86	32	Plug to Plug	87	32	Plug to Plug	87	32	Plug to Plug	75	32	Plug to Plug	86	32
	Frac Plug	15,448	Total Shots	Frac Plug	15,251	Total Shots	Frac Plug	15,053	Total Shots	Frac Plug	14,844	Total Shots	Frac Plug	14,657	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
	14,437	35	5	14,249	25	5	14,042	34	5	13,854	25	5	13,652	29	5
	14,423	25	5	14,225	25	5	14,027	25	5	13,829	28	5	13,634	27	5
	14,398	25	4	14,200	25	4	14,002	24	4	13,801	21	4	13,607	25	4
	14,373	25	4	14,175	28	4	13,978	25	4	13,780	25	4	13,582	25	4
	14,348	26	4	14,147	21	4	13,953	25	4	13,755	25	4	13,557	24	4
	14,322	23	4	14,126	25	4	13,928	25	4	13,730	24	4	13,533	25	4
	14,299	25	3	14,101	25	3	13,903	24	3	13,706	25	3	13,508	25	3
	14,274		3	14,076		3	13,879		3	13,681		3	13,483		3
	Plug to Plug	77	32	Plug to Plug	85	32	Plug to Plug	76	32	Plug to Plug	86	32	Plug to Plug	82	32
	Frac Plug	14,450	Total Shots	Frac Plug	14,260	Total Shots	Frac Plug	14,054	Total Shots	Frac Plug	13,866	Total Shots	Frac Plug	13,664	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
	13,460	23	5	13,258	27	5	13,065	23	5		12893			0	
	13,434	28	5	13,240	29	5	13,038	27	5						
	13,406	22	4	13,211	26	4	13,011	22	4						
	13,384	24	4	13,185	23	4	12,989	25	4						
	13,360	25	4	13,162	25	4	12,964	25	4						
	13,335	25	4	13,137	25	4	12,939	24	4						
	13,310	25	3	13,112	24	3	12,915	22	3						
	13,285		3	13,088		3	12,893		3						
	Plug to Plug	87	32	Plug to Plug	83	32	Plug to Plug	86	32	Plug to Plug	0	0	Plug to Plug	0	0
	Frac Plug	13,471	Total Shots	Frac Plug	13,268	Total Shots	Frac Plug	13,075	Total Shots	Frac Plug		Total Shots	Frac Plug		Total Shots