

NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

COONSKIN FEE #701H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

03 December, 2018

HOBBS OCD
JUL 19 2019
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Survey Report

Company: NORTHERN DELAWARE BASIN	Local Co-ordinate Reference: Well COONSKIN FEE #701H
Project: LEA COUNTY, NM	TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
Site: BULLDOG	MD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
Well: COONSKIN FEE #701H	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)	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 #701H					
Well Position	+N-S	0.0 usft	Northing:	436,158.90 usft	Latitude:	32° 11' 43.773 N
	+E-W	0.0 usft	Easting:	796,201.00 usft	Longitude:	103° 22' 32.924 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,315.9 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	WMM2015	6/23/2018	(°)	(°)	(nT)
			6.78	60.04	47,823.63962229

Design	ACTUAL WELLPATH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	28.78	

Survey Program	Date	11/30/2018			
From	To	Survey (Wellbore)	Tool Name	Description	
100.0	11,457.2	GYRO (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
11,630.0	19,795.0	MWD-CURVE/LATERAL (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.92	309.78	100.0	0.5	-0.6	0.2	0.92	0.92	0.00
125.0	0.96	302.80	125.0	0.8	-0.9	0.2	0.48	0.16	-27.84
150.0	0.95	301.61	150.0	1.0	-1.3	0.2	0.09	-0.04	-4.76
175.0	0.91	301.19	175.0	1.2	-1.6	0.2	0.16	-0.16	-1.68
200.0	0.91	303.13	200.0	1.4	-2.0	0.3	0.12	0.00	7.76
225.0	0.82	310.94	225.0	1.6	-2.3	0.3	0.59	-0.36	31.24
250.0	0.89	314.94	250.0	1.9	-2.6	0.4	0.37	0.28	16.00

Survey Report

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Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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	1.10	303.91	275.0	2.2	-2.9	0.5	1.13	0.84	-44.12
300.0	1.22	303.11	300.0	2.4	-3.3	0.5	0.48	0.48	-3.20
325.0	1.44	297.48	325.0	2.7	-3.8	0.5	1.02	0.88	-22.52
350.0	1.50	300.19	350.0	3.0	-4.4	0.5	0.37	0.24	10.84
375.0	1.64	293.19	374.9	3.3	-5.0	0.5	0.95	0.56	-28.00
400.0	1.75	294.70	399.9	3.6	-5.7	0.5	0.47	0.44	6.04
425.0	1.47	307.64	424.9	4.0	-6.3	0.5	1.83	-1.12	51.76
450.0	1.34	314.77	449.9	4.4	-6.7	0.6	0.87	-0.52	28.52
475.0	1.20	329.01	474.9	4.8	-7.1	0.8	1.38	-0.56	56.96
500.0	0.95	354.16	499.9	5.3	-7.2	1.1	2.11	-1.00	100.60
525.0	0.97	1.41	524.9	5.7	-7.2	1.5	0.49	0.08	29.00
550.0	1.05	38.02	549.9	6.1	-7.1	1.9	2.56	0.32	146.44
575.0	1.12	52.15	574.9	6.4	-6.8	2.3	1.10	0.28	56.52
600.0	1.42	69.99	599.9	6.7	-6.3	2.8	1.97	1.20	71.36
625.0	1.50	71.63	624.9	6.9	-5.7	3.3	0.36	0.32	6.56
650.0	1.73	80.75	649.9	7.0	-5.0	3.8	1.38	0.92	36.48
675.0	1.80	84.96	674.9	7.1	-4.2	4.2	0.59	0.28	16.84
700.0	2.03	89.76	699.8	7.2	-3.4	4.6	1.12	0.92	19.20
725.0	2.04	95.36	724.8	7.1	-2.5	5.0	0.80	0.04	22.40
750.0	2.01	99.82	749.8	7.0	-1.6	5.3	0.64	-0.12	17.84
775.0	2.08	107.09	774.8	6.8	-0.8	5.6	1.07	0.28	29.08
800.0	2.00	112.00	799.8	6.5	0.1	5.7	0.77	-0.32	19.64
825.0	2.07	116.05	824.8	6.1	0.9	5.8	0.64	0.28	16.20
850.0	2.07	119.31	849.7	5.7	1.7	5.8	0.47	0.00	13.04
875.0	2.07	120.20	874.7	5.3	2.5	5.8	0.13	0.00	3.56
900.0	2.00	120.33	899.7	4.8	3.2	5.8	0.28	-0.28	0.52
925.0	2.00	125.16	924.7	4.3	4.0	5.7	0.67	0.00	19.32
950.0	1.94	125.47	949.7	3.8	4.7	5.6	0.24	-0.24	1.24
975.0	1.80	125.68	974.7	3.4	5.3	5.5	0.56	-0.56	0.84
1,000.0	1.45	131.80	999.7	2.9	5.9	5.4	1.56	-1.40	24.48
1,025.0	1.39	134.42	1,024.7	2.5	6.3	5.3	0.35	-0.24	10.48
1,050.0	1.24	135.99	1,049.6	2.1	6.7	5.1	0.62	-0.60	6.28
1,075.0	1.19	136.73	1,074.6	1.7	7.1	4.9	0.21	-0.20	2.96
1,100.0	1.28	131.87	1,099.6	1.3	7.5	4.8	0.55	0.36	-19.44
1,125.0	1.07	130.95	1,124.6	1.0	7.9	4.7	0.84	-0.84	-3.68
1,150.0	0.52	115.70	1,149.6	0.8	8.2	4.6	2.34	-2.20	-61.00
1,175.0	0.34	15.05	1,174.6	0.8	8.3	4.7	2.69	-0.72	-402.60
1,200.0	0.51	352.56	1,199.6	1.0	8.3	4.9	0.94	0.68	-89.96
1,225.0	0.77	343.68	1,224.6	1.3	8.2	5.1	1.11	1.04	-35.52
1,250.0	0.81	348.13	1,249.6	1.6	8.1	5.3	0.29	0.16	17.80
1,275.0	0.81	337.28	1,274.6	1.9	8.0	5.6	0.61	0.00	-43.40
1,300.0	0.80	349.02	1,299.6	2.3	7.9	5.8	0.68	-0.04	46.96

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Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #701H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #701H

RKB=3315.9+25 @ 3340.9usft (PRECISION 595)

RKB=3315.9+25 @ 3340.9usft (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)
1,325.0	0.84	347.30	1,324.6	2.6	7.9	6.1	0.19	0.16	-6.88
1,350.0	0.91	344.36	1,349.6	3.0	7.8	6.4	0.33	0.28	-11.76
1,375.0	0.92	355.10	1,374.6	3.4	7.7	6.7	0.69	0.04	42.96
1,400.0	1.07	357.00	1,399.6	3.8	7.7	7.0	0.61	0.60	7.60
1,425.0	1.19	358.36	1,424.6	4.3	7.6	7.5	0.49	0.48	5.44
1,450.0	1.25	353.71	1,449.6	4.9	7.6	7.9	0.46	0.24	-18.60
1,475.0	1.29	353.67	1,474.6	5.4	7.5	8.4	0.16	0.16	-0.16
1,500.0	1.40	353.76	1,499.6	6.0	7.5	8.8	0.44	0.44	0.36
1,525.0	1.44	349.88	1,524.6	6.6	7.4	9.3	0.42	0.16	-15.52
1,550.0	1.36	352.09	1,549.6	7.2	7.3	9.8	0.39	-0.32	8.84
1,575.0	1.36	351.07	1,574.6	7.8	7.2	10.3	0.10	0.00	-4.08
1,600.0	1.30	348.44	1,599.6	8.4	7.1	10.7	0.34	-0.24	-10.52
1,625.0	1.08	328.67	1,624.5	8.8	6.9	11.1	1.85	-0.88	-79.08
1,650.0	0.94	305.11	1,649.5	9.2	6.6	11.2	1.74	-0.56	-94.24
1,675.0	0.86	294.04	1,674.5	9.4	6.3	11.2	0.76	-0.32	-44.28
1,700.0	0.96	292.08	1,699.5	9.5	5.9	11.2	0.42	0.40	-7.84
1,725.0	1.07	293.20	1,724.5	9.7	5.5	11.1	0.45	0.44	4.48
1,750.0	1.01	296.73	1,749.5	9.9	5.1	11.1	0.35	-0.24	14.12
1,775.0	1.05	297.68	1,774.5	10.1	4.7	11.1	0.17	0.16	3.80
1,800.0	1.07	302.56	1,799.5	10.3	4.3	11.1	0.37	0.08	19.52
1,825.0	1.08	301.89	1,824.5	10.6	3.9	11.1	0.06	0.04	-2.68
1,850.0	1.10	301.58	1,849.5	10.8	3.5	11.2	0.08	0.08	-1.24
1,875.0	1.07	300.78	1,874.5	11.1	3.1	11.2	0.13	-0.12	-3.20
1,900.0	1.04	296.66	1,899.5	11.3	2.7	11.2	0.33	-0.12	-16.48
1,925.0	0.93	304.69	1,924.5	11.5	2.3	11.2	0.71	-0.44	32.12
1,950.0	1.00	302.07	1,949.5	11.7	2.0	11.2	0.33	0.28	-10.48
1,975.0	0.90	313.90	1,974.5	12.0	1.7	11.3	0.88	-0.40	47.32
2,000.0	0.91	319.27	1,999.5	12.3	1.4	11.4	0.34	0.04	21.48
2,025.0	1.01	317.33	2,024.5	12.6	1.1	11.6	0.42	0.40	-7.76
2,050.0	0.86	324.98	2,049.5	12.9	0.8	11.7	0.78	-0.60	30.60
2,075.0	0.90	329.33	2,074.5	13.2	0.6	11.9	0.31	0.16	17.40
2,100.0	0.91	333.91	2,099.5	13.6	0.5	12.1	0.29	0.04	18.32
2,125.0	0.88	342.20	2,124.5	13.9	0.3	12.3	0.53	-0.12	33.16
2,150.0	0.93	343.41	2,149.5	14.3	0.2	12.6	0.21	0.20	4.84
2,175.0	0.90	350.03	2,174.5	14.7	0.1	12.9	0.44	-0.12	26.48
2,200.0	0.90	352.05	2,199.5	15.1	0.0	13.2	0.13	0.00	8.08
2,225.0	0.82	0.98	2,224.5	15.4	0.0	13.5	0.62	-0.32	35.72
2,250.0	0.66	11.81	2,249.5	15.8	0.0	13.8	0.85	-0.64	43.32
2,275.0	0.62	38.15	2,274.5	16.0	0.2	14.1	1.18	-0.16	105.36
2,300.0	0.64	59.46	2,299.5	16.2	0.4	14.4	0.94	0.08	85.24
2,325.0	0.66	60.76	2,324.5	16.3	0.6	14.6	0.10	0.08	5.20
2,350.0	0.86	70.78	2,349.5	16.5	0.9	14.9	0.96	0.80	40.08

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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)	
2,375.0	0.72	65.81	2,374.5	16.6	1.2	15.1	0.62	-0.56	-19.88	
2,400.0	0.89	74.69	2,399.4	16.7	1.6	15.4	0.84	0.68	35.52	
2,425.0	1.49	82.61	2,424.4	16.8	2.1	15.7	2.48	2.40	31.68	
2,450.0	1.14	80.09	2,449.4	16.9	2.6	16.1	1.42	-1.40	-10.08	
2,475.0	1.19	81.87	2,474.4	17.0	3.1	16.4	0.25	0.20	7.12	
2,500.0	1.36	83.99	2,499.4	17.0	3.7	16.7	0.71	0.68	8.48	
2,525.0	1.66	86.63	2,524.4	17.1	4.3	17.1	1.23	1.20	10.56	
2,550.0	1.85	85.66	2,549.4	17.1	5.1	17.5	0.77	0.76	-3.88	
2,575.0	1.85	83.95	2,574.4	17.2	5.9	17.9	0.22	0.00	-6.84	
2,600.0	1.88	87.97	2,599.4	17.3	6.7	18.4	0.54	0.12	16.08	
2,625.0	2.04	107.23	2,624.4	17.1	7.6	18.7	2.70	0.64	77.04	
2,650.0	2.14	108.79	2,649.3	16.9	8.4	18.8	0.46	0.40	6.24	
2,675.0	2.31	112.00	2,674.3	16.5	9.3	19.0	0.84	0.68	12.84	
2,700.0	2.30	111.14	2,699.3	16.2	10.3	19.1	0.14	-0.04	-3.44	
2,725.0	2.34	109.91	2,724.3	15.8	11.2	19.3	0.26	0.16	-4.92	
2,750.0	2.41	111.50	2,749.3	15.4	12.2	19.4	0.38	0.28	6.36	
2,775.0	2.43	112.03	2,774.2	15.0	13.2	19.5	0.12	0.08	2.12	
2,800.0	1.70	109.82	2,799.2	14.7	14.0	19.6	2.94	-2.92	-8.84	
2,825.0	1.50	109.33	2,824.2	14.5	14.7	19.8	0.80	-0.80	-1.96	
2,850.0	1.48	109.64	2,849.2	14.3	15.3	19.9	0.09	-0.08	1.24	
2,875.0	1.55	115.80	2,874.2	14.0	15.9	19.9	0.71	0.28	24.64	
2,900.0	1.84	136.89	2,899.2	13.6	16.5	19.8	2.73	1.16	84.36	
2,925.0	2.00	139.86	2,924.2	12.9	17.0	19.5	0.75	0.64	11.88	
2,950.0	2.17	144.53	2,949.2	12.2	17.6	19.2	0.96	0.68	18.68	
2,975.0	2.27	142.79	2,974.1	11.4	18.2	18.8	0.48	0.40	-6.96	
3,000.0	2.29	142.84	2,999.1	10.7	18.8	18.4	0.08	0.08	0.20	
3,025.0	2.23	142.92	3,024.1	9.9	19.3	18.0	0.24	-0.24	0.32	
3,050.0	2.11	148.48	3,049.1	9.1	19.9	17.5	0.97	-0.48	22.24	
3,075.0	2.39	164.61	3,074.1	8.2	20.3	16.9	2.76	1.12	64.52	
3,100.0	2.47	167.48	3,099.0	7.2	20.5	16.2	0.58	0.32	11.48	
3,125.0	2.52	166.16	3,124.0	6.1	20.8	15.3	0.30	0.20	-5.28	
3,150.0	1.97	180.03	3,149.0	5.1	20.9	14.6	3.08	-2.20	55.48	
3,175.0	1.53	200.48	3,174.0	4.4	20.8	13.9	3.03	-1.76	81.80	
3,200.0	1.35	207.94	3,199.0	3.8	20.5	13.2	1.04	-0.72	29.84	
3,225.0	1.24	209.34	3,224.0	3.3	20.3	12.7	0.46	-0.44	5.60	
3,250.0	1.20	218.09	3,249.0	2.9	20.0	12.1	0.76	-0.16	35.00	
3,275.0	1.26	209.97	3,274.0	2.4	19.7	11.6	0.74	0.24	-32.48	
3,300.0	1.15	216.77	3,299.0	2.0	19.4	11.1	0.72	-0.44	27.20	
3,325.0	1.21	219.50	3,324.0	1.6	19.1	10.6	0.33	0.24	10.92	
3,350.0	1.32	220.84	3,348.9	1.2	18.7	10.0	0.46	0.44	5.36	
3,375.0	1.44	226.17	3,373.9	0.7	18.3	9.5	0.70	0.48	21.32	
3,400.0	1.53	230.90	3,398.9	0.3	17.8	8.8	0.61	0.36	18.92	

Survey Report

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Project: LEA COUNTY, NM
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Well: COONSKIN FEE #701H
Wellbore: OWB
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Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,425.0	1.54	229.72	3,423.9	-0.1	17.3	8.2	0.13	0.04	-4.72
3,450.0	1.48	231.81	3,448.9	-0.5	16.8	7.6	0.33	-0.24	8.36
3,475.0	1.48	240.16	3,473.9	-0.9	16.2	7.0	0.86	0.00	33.40
3,500.0	1.53	242.77	3,498.9	-1.2	15.7	6.5	0.34	0.20	10.44
3,525.0	0.86	270.31	3,523.9	-1.4	15.2	6.1	3.46	-2.68	110.16
3,550.0	0.72	280.79	3,548.9	-1.3	14.8	6.0	0.80	-0.56	41.92
3,575.0	0.80	290.23	3,573.9	-1.2	14.5	5.9	0.59	0.32	37.76
3,600.0	0.93	286.72	3,598.9	-1.1	14.2	5.8	0.56	0.52	-14.04
3,625.0	1.03	282.76	3,623.9	-1.0	13.7	5.7	0.48	0.40	-15.84
3,650.0	1.15	279.43	3,648.9	-0.9	13.3	5.6	0.54	0.48	-13.32
3,675.0	1.23	274.73	3,673.9	-0.9	12.8	5.4	0.50	0.32	-18.80
3,700.0	1.33	272.09	3,698.9	-0.8	12.2	5.2	0.46	0.40	-10.56
3,725.0	1.40	269.99	3,723.9	-0.8	11.6	4.9	0.34	0.28	-8.40
3,750.0	1.68	268.00	3,748.8	-0.8	10.9	4.5	1.14	1.12	-7.96
3,775.0	1.71	263.68	3,773.8	-0.9	10.2	4.1	0.52	0.12	-17.28
3,800.0	1.54	253.50	3,798.8	-1.0	9.5	3.7	1.34	-0.68	-40.72
3,825.0	1.37	247.60	3,823.8	-1.2	8.9	3.2	0.91	-0.68	-23.60
3,850.0	1.20	236.45	3,848.8	-1.5	8.4	2.8	1.21	-0.68	-44.60
3,875.0	0.86	211.33	3,873.8	-1.8	8.1	2.3	2.23	-1.36	-100.48
3,900.0	0.91	171.99	3,898.8	-2.1	8.0	2.0	2.39	0.20	-157.36
3,925.0	1.06	169.51	3,923.8	-2.6	8.1	1.7	0.62	0.60	-9.92
3,950.0	1.14	170.87	3,948.8	-3.0	8.2	1.3	0.34	0.32	5.44
3,975.0	1.49	163.99	3,973.8	-3.6	8.3	0.8	1.53	1.40	-27.52
4,000.0	1.55	182.09	3,998.8	-4.2	8.4	0.3	1.93	0.24	72.40
4,025.0	1.96	196.88	4,023.8	-5.0	8.3	-0.4	2.43	1.64	59.16
4,050.0	1.87	198.11	4,048.8	-5.8	8.0	-1.2	0.40	-0.36	4.92
4,075.0	2.01	202.85	4,073.7	-6.6	7.7	-2.1	0.85	0.56	18.96
4,100.0	2.04	210.18	4,098.7	-7.4	7.3	-2.9	1.04	0.12	29.32
4,125.0	1.66	225.75	4,123.7	-8.0	6.8	-3.7	2.51	-1.52	62.28
4,150.0	1.31	257.11	4,148.7	-8.3	6.3	-4.3	3.48	-1.40	125.44
4,175.0	1.25	268.06	4,173.7	-8.4	5.7	-4.6	1.01	-0.24	43.80
4,200.0	1.11	292.61	4,198.7	-8.3	5.2	-4.8	2.08	-0.56	98.20
4,225.0	1.04	302.10	4,223.7	-8.1	4.8	-4.8	0.76	-0.28	37.96
4,250.0	1.20	332.64	4,248.7	-7.7	4.5	-4.6	2.44	0.64	122.16
4,275.0	1.41	345.34	4,273.7	-7.2	4.3	-4.2	1.42	0.84	50.80
4,300.0	1.77	354.81	4,298.7	-6.5	4.2	-3.7	1.78	1.44	37.88
4,325.0	2.16	5.21	4,323.7	-5.7	4.2	-3.0	2.11	1.56	41.60
4,350.0	2.67	12.86	4,348.6	-4.6	4.4	-2.0	2.41	2.04	30.60
4,375.0	3.50	21.35	4,373.6	-3.4	4.8	-0.6	3.78	3.32	33.96
4,400.0	3.74	20.16	4,398.5	-1.9	5.4	0.9	1.01	0.96	-4.76
4,425.0	4.43	27.29	4,423.5	-0.3	6.1	2.7	3.42	2.76	28.52
4,450.0	4.50	29.19	4,448.4	1.4	7.0	4.6	0.65	0.28	7.60

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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	4.65	31.36	4,473.3	3.2	8.0	6.6	0.92	0.60	8.68
4,500.0	4.13	34.28	4,498.3	4.8	9.0	8.5	2.26	-2.08	11.68
4,525.0	3.86	39.06	4,523.2	6.2	10.1	10.3	1.71	-1.08	19.12
4,550.0	3.91	39.59	4,548.1	7.5	11.1	11.9	0.25	0.20	2.12
4,575.0	3.79	41.27	4,573.1	8.8	12.2	13.6	0.66	-0.48	6.72
4,600.0	3.40	41.82	4,598.0	9.9	13.3	15.1	1.57	-1.56	2.20
4,625.0	3.34	42.91	4,623.0	11.0	14.3	16.5	0.35	-0.24	4.36
4,650.0	3.16	42.78	4,647.9	12.1	15.2	17.9	0.72	-0.72	-0.52
4,675.0	2.96	41.56	4,672.9	13.1	16.1	19.2	0.84	-0.80	-4.88
4,700.0	2.40	32.18	4,697.9	14.0	16.8	20.4	2.84	-2.24	-37.52
4,725.0	2.14	25.93	4,722.9	14.8	17.3	21.3	1.43	-1.04	-25.00
4,750.0	2.08	27.34	4,747.8	15.7	17.7	22.3	0.32	-0.24	5.64
4,775.0	1.45	16.22	4,772.8	16.4	18.0	23.0	2.86	-2.52	-44.48
4,800.0	0.77	313.49	4,797.8	16.8	18.0	23.4	5.17	-2.72	-250.92
4,825.0	1.28	277.57	4,822.8	16.9	17.6	23.3	3.19	2.04	-143.68
4,850.0	1.56	270.21	4,847.8	17.0	17.0	23.1	1.33	1.12	-28.44
4,875.0	1.68	271.49	4,872.8	17.0	16.3	22.7	0.50	0.48	5.12
4,900.0	1.81	270.81	4,897.8	17.0	15.5	22.4	0.53	0.52	-2.72
4,925.0	1.66	270.31	4,922.8	17.0	14.8	22.0	0.60	-0.60	-2.00
4,950.0	1.24	267.54	4,947.8	17.0	14.1	21.7	1.70	-1.68	-11.08
4,975.0	0.20	293.69	4,972.8	17.0	13.8	21.6	4.26	-4.16	104.60
5,000.0	0.25	281.30	4,997.8	17.0	13.7	21.5	0.28	0.20	-49.56
5,025.0	0.24	262.02	5,022.8	17.0	13.6	21.5	0.33	-0.04	-77.12
5,050.0	0.15	245.13	5,047.8	17.0	13.5	21.4	0.42	-0.36	-67.56
5,075.0	0.15	287.76	5,072.8	17.0	13.5	21.4	0.44	0.00	170.52
5,100.0	0.25	225.37	5,097.8	17.0	13.4	21.3	0.90	0.40	-249.56
5,125.0	0.45	181.31	5,122.8	16.9	13.4	21.2	1.29	0.80	-176.24
5,150.0	0.97	168.92	5,147.8	16.5	13.4	20.9	2.16	2.08	-49.56
5,175.0	1.06	170.28	5,172.8	16.1	13.5	20.6	0.37	0.36	5.44
5,200.0	0.97	176.42	5,197.8	15.7	13.5	20.2	0.56	-0.36	24.56
5,225.0	0.97	175.77	5,222.8	15.2	13.6	19.9	0.04	0.00	-2.60
5,250.0	1.01	171.82	5,247.8	14.8	13.6	19.5	0.32	0.16	-15.80
5,275.0	0.95	170.58	5,272.8	14.4	13.7	19.2	0.25	-0.24	-4.96
5,300.0	0.86	175.40	5,297.8	14.0	13.7	18.9	0.47	-0.36	19.28
5,325.0	0.88	187.62	5,322.7	13.6	13.7	18.5	0.75	0.08	48.88
5,350.0	1.01	206.66	5,347.7	13.2	13.6	18.1	1.35	0.52	76.16
5,375.0	1.41	225.76	5,372.7	12.8	13.3	17.6	2.25	1.60	76.40
5,400.0	1.34	225.21	5,397.7	12.4	12.8	17.1	0.28	-0.28	-2.20
5,425.0	1.34	221.53	5,422.7	12.0	12.4	16.5	0.34	0.00	-14.72
5,450.0	1.37	221.96	5,447.7	11.5	12.0	15.9	0.13	0.12	1.72
5,475.0	1.31	221.90	5,472.7	11.1	11.6	15.3	0.24	-0.24	-0.24
5,500.0	1.25	223.36	5,497.7	10.7	11.3	14.8	0.27	-0.24	5.84

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #701H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #701H

RKB=3315.9+25 @ 3340.9usft (PRECISION 595)

RKB=3315.9+25 @ 3340.9usft (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	1.58	230.11	5,522.7	10.3	10.8	14.2	1.40	1.24	27.00
5,550.0	1.57	224.16	5,547.7	9.8	10.3	13.6	0.65	0.04	-23.80
5,575.0	1.54	220.33	5,572.7	9.3	9.9	12.9	0.43	-0.12	-15.32
5,600.0	1.52	217.72	5,597.7	8.8	9.4	12.3	0.29	-0.08	-10.44
5,625.0	1.55	220.56	5,622.7	8.3	9.0	11.6	0.33	0.12	11.36
5,650.0	1.53	219.85	5,647.7	7.8	8.6	10.9	0.11	-0.08	-2.84
5,675.0	1.58	214.81	5,672.6	7.2	8.2	10.3	0.58	0.20	-20.16
5,700.0	1.51	212.92	5,697.6	6.7	7.8	9.6	0.35	-0.28	-7.56
5,725.0	1.62	217.13	5,722.6	6.1	7.4	8.9	0.64	0.44	16.84
5,750.0	1.60	213.80	5,747.6	5.5	7.0	8.2	0.38	-0.08	-13.32
5,775.0	1.46	213.72	5,772.6	5.0	6.6	7.6	0.56	-0.56	-0.32
5,800.0	1.50	212.29	5,797.6	4.4	6.3	6.9	0.22	0.16	-5.72
5,825.0	1.47	216.40	5,822.6	3.9	5.9	6.3	0.44	-0.12	16.44
5,850.0	1.58	216.67	5,847.6	3.4	5.5	5.6	0.44	0.44	1.08
5,875.0	1.56	217.46	5,872.6	2.8	5.1	4.9	0.12	-0.08	3.16
5,900.0	1.70	217.50	5,897.6	2.3	4.7	4.2	0.56	0.56	0.16
5,925.0	1.67	215.51	5,922.5	1.7	4.2	3.5	0.26	-0.12	-7.96
5,950.0	1.83	217.65	5,947.5	1.1	3.8	2.7	0.69	0.64	8.56
5,975.0	1.53	215.55	5,972.5	0.5	3.3	2.0	1.22	-1.20	-8.40
6,000.0	1.59	214.20	5,997.5	-0.1	3.0	1.3	0.28	0.24	-5.40
6,025.0	1.62	216.32	6,022.5	-0.7	2.6	0.6	0.27	0.12	8.48
6,050.0	1.68	216.89	6,047.5	-1.2	2.1	-0.1	0.25	0.24	2.28
6,075.0	1.51	216.06	6,072.5	-1.8	1.7	-0.8	0.69	-0.68	-3.32
6,100.0	1.42	230.16	6,097.5	-2.3	1.3	-1.4	1.48	-0.36	56.40
6,125.0	1.26	268.55	6,122.5	-2.5	0.8	-1.8	3.58	-0.64	153.56
6,150.0	1.44	289.81	6,147.5	-2.4	0.2	-2.0	2.11	0.72	85.04
6,175.0	1.42	289.66	6,172.5	-2.2	-0.4	-2.1	0.08	-0.08	-0.60
6,200.0	1.37	285.60	6,197.5	-2.0	-1.0	-2.2	0.44	-0.20	-16.24
6,225.0	1.41	293.13	6,222.4	-1.8	-1.5	-2.3	0.75	0.16	30.12
6,250.0	1.46	291.64	6,247.4	-1.5	-2.1	-2.4	0.25	0.20	-5.96
6,275.0	1.36	291.76	6,272.4	-1.3	-2.7	-2.4	0.40	-0.40	0.48
6,300.0	1.41	292.29	6,297.4	-1.1	-3.3	-2.5	0.21	0.20	2.12
6,325.0	1.22	297.38	6,322.4	-0.8	-3.8	-2.6	0.89	-0.76	20.36
6,350.0	1.35	295.64	6,347.4	-0.6	-4.3	-2.6	0.54	0.52	-6.96
6,375.0	1.09	296.65	6,372.4	-0.4	-4.8	-2.6	1.04	-1.04	4.04
6,400.0	0.50	20.16	6,397.4	-0.1	-4.9	-2.5	4.59	-2.36	334.04
6,425.0	0.81	49.66	6,422.4	0.1	-4.8	-2.2	1.79	1.24	118.00
6,450.0	0.86	57.51	6,447.4	0.3	-4.5	-1.9	0.50	0.20	31.40
6,475.0	0.79	54.19	6,472.4	0.5	-4.2	-1.6	0.34	-0.28	-13.28
6,500.0	0.91	60.43	6,497.4	0.7	-3.9	-1.3	0.61	0.48	24.96
6,525.0	0.81	50.42	6,522.4	0.9	-3.5	-0.9	0.72	-0.40	-40.04
6,550.0	0.82	63.56	6,547.4	1.1	-3.2	-0.6	0.75	0.04	52.56

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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)
6,575.0	0.91	58.81	6,572.4	1.3	-2.9	-0.3	0.46	0.36	-19.00
6,600.0	0.79	58.99	6,597.4	1.5	-2.6	0.0	0.48	-0.48	0.72
6,625.0	0.85	66.52	6,622.4	1.6	-2.3	0.3	0.49	0.24	30.12
6,650.0	1.00	57.07	6,647.4	1.8	-1.9	0.7	0.85	0.60	-37.80
6,675.0	0.91	60.16	6,672.4	2.0	-1.6	1.0	0.41	-0.36	12.36
6,700.0	0.78	59.46	6,697.4	2.2	-1.3	1.3	0.52	-0.52	-2.80
6,725.0	0.91	57.58	6,722.4	2.4	-0.9	1.7	0.53	0.52	-7.60
6,750.0	0.85	58.39	6,747.4	2.6	-0.6	2.0	0.25	-0.24	3.32
6,775.0	0.87	58.48	6,772.4	2.8	-0.3	2.3	0.08	0.08	0.36
6,800.0	0.88	62.33	6,797.4	3.0	0.0	2.6	0.24	0.04	15.40
6,825.0	0.92	66.69	6,822.4	3.2	0.4	3.0	0.32	0.16	17.44
6,850.0	0.81	64.75	6,847.4	3.3	0.7	3.3	0.46	-0.44	-7.76
6,875.0	0.99	62.04	6,872.3	3.5	1.1	3.6	0.74	0.72	-10.84
6,900.0	1.02	59.02	6,897.3	3.7	1.5	4.0	0.24	0.12	-12.08
6,925.0	0.98	63.46	6,922.3	3.9	1.8	4.3	0.35	-0.16	17.76
6,950.0	0.96	55.89	6,947.3	4.1	2.2	4.7	0.52	-0.08	-30.28
6,975.0	1.05	56.58	6,972.3	4.4	2.6	5.1	0.36	0.36	2.76
7,000.0	0.91	58.76	6,997.3	4.6	2.9	5.5	0.58	-0.56	8.72
7,025.0	0.96	64.17	7,022.3	4.8	3.3	5.8	0.41	0.20	21.64
7,050.0	0.97	63.17	7,047.3	5.0	3.7	6.1	0.08	0.04	-4.00
7,075.0	0.97	57.01	7,072.3	5.2	4.0	6.5	0.42	0.00	-24.64
7,100.0	0.96	48.26	7,097.3	5.5	4.4	6.9	0.59	-0.04	-35.00
7,125.0	0.92	50.10	7,122.3	5.7	4.7	7.3	0.20	-0.16	7.36
7,150.0	0.89	52.40	7,147.3	6.0	5.0	7.6	0.19	-0.12	9.20
7,175.0	0.90	42.59	7,172.3	6.2	5.3	8.0	0.61	0.04	-39.24
7,200.0	0.87	35.90	7,197.3	6.5	5.5	8.4	0.43	-0.12	-26.76
7,225.0	0.67	16.02	7,222.3	6.8	5.7	8.7	1.32	-0.80	-79.52
7,250.0	0.66	23.37	7,247.3	7.1	5.8	9.0	0.34	-0.04	29.40
7,275.0	0.63	19.14	7,272.3	7.4	5.9	9.3	0.23	-0.12	-16.92
7,300.0	0.73	16.66	7,297.3	7.6	6.0	9.6	0.42	0.40	-9.92
7,325.0	0.78	14.73	7,322.3	8.0	6.1	9.9	0.22	0.20	-7.72
7,350.0	0.71	20.03	7,347.3	8.3	6.1	10.2	0.39	-0.28	21.20
7,375.0	0.60	31.38	7,372.3	8.5	6.3	10.5	0.68	-0.44	45.40
7,400.0	0.78	52.03	7,397.3	8.7	6.5	10.8	1.22	0.72	82.60
7,425.0	0.97	50.73	7,422.3	9.0	6.8	11.1	0.76	0.76	-5.20
7,450.0	0.88	50.81	7,447.3	9.2	7.1	11.5	0.36	-0.36	0.32
7,475.0	0.85	42.19	7,472.3	9.5	7.4	11.9	0.53	-0.12	-34.48
7,500.0	0.84	44.80	7,497.3	9.8	7.6	12.2	0.16	-0.04	10.44
7,525.0	0.48	69.66	7,522.3	9.9	7.8	12.5	1.81	-1.44	99.44
7,550.0	0.52	160.36	7,547.3	9.9	8.0	12.5	2.85	0.16	362.80
7,575.0	1.20	187.39	7,572.3	9.5	8.0	12.2	3.10	2.72	108.12
7,600.0	1.26	189.08	7,597.3	9.0	7.9	11.7	0.28	0.24	6.76

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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	1.23	194.69	7,622.3	8.4	7.8	11.1	0.50	-0.12	22.44
7,650.0	1.15	194.84	7,647.3	7.9	7.7	10.6	0.32	-0.32	0.60
7,675.0	1.24	196.75	7,672.2	7.4	7.5	10.1	0.39	0.36	7.64
7,700.0	1.28	193.59	7,697.2	6.9	7.4	9.6	0.32	0.16	-12.64
7,725.0	1.26	191.42	7,722.2	6.4	7.3	9.1	0.21	-0.08	-8.68
7,750.0	1.24	193.36	7,747.2	5.8	7.1	8.5	0.19	-0.08	7.76
7,775.0	1.19	192.81	7,772.2	5.3	7.0	8.0	0.21	-0.20	-2.20
7,800.0	1.08	188.04	7,797.2	4.8	6.9	7.6	0.58	-0.44	-19.08
7,825.0	0.95	183.73	7,822.2	4.4	6.9	7.2	0.60	-0.52	-17.24
7,850.0	0.80	171.63	7,847.2	4.0	6.9	6.8	0.95	-0.60	-48.40
7,875.0	0.93	175.72	7,872.2	3.6	6.9	6.5	0.58	0.52	16.36
7,900.0	0.77	157.37	7,897.2	3.3	7.0	6.2	1.25	-0.64	-73.40
7,925.0	0.78	176.84	7,922.2	2.9	7.1	6.0	1.05	0.04	77.88
7,950.0	0.81	173.49	7,947.2	2.6	7.1	5.7	0.22	0.12	-13.40
7,975.0	0.85	178.47	7,972.2	2.2	7.1	5.4	0.33	0.16	19.92
8,000.0	0.92	191.76	7,997.2	1.9	7.1	5.0	0.87	0.28	53.16
8,025.0	1.02	195.54	8,022.2	1.4	7.0	4.6	0.47	0.40	15.12
8,050.0	0.66	170.52	8,047.2	1.1	7.0	4.3	2.02	-1.44	-100.08
8,075.0	0.73	156.00	8,072.2	0.8	7.1	4.1	0.76	0.28	-58.08
8,100.0	0.73	165.17	8,097.2	0.5	7.2	3.9	0.47	0.00	36.68
8,125.0	0.65	148.67	8,122.2	0.2	7.3	3.7	0.85	-0.32	-66.00
8,150.0	0.78	152.23	8,147.2	0.0	7.4	3.5	0.55	0.52	14.24
8,175.0	0.67	152.71	8,172.2	-0.3	7.6	3.4	0.44	-0.44	1.92
8,200.0	0.73	136.28	8,197.2	-0.6	7.8	3.2	0.83	0.24	-65.72
8,225.0	0.72	152.15	8,222.2	-0.8	7.9	3.1	0.80	-0.04	63.48
8,250.0	0.75	136.40	8,247.2	-1.1	8.1	3.0	0.81	0.12	-63.00
8,275.0	0.72	129.47	8,272.2	-1.3	8.4	2.9	0.38	-0.12	-27.72
8,300.0	0.83	111.07	8,297.2	-1.5	8.6	2.9	1.08	0.44	-73.60
8,325.0	0.68	128.03	8,322.2	-1.6	8.9	2.9	1.07	-0.60	67.84
8,350.0	0.90	97.82	8,347.2	-1.7	9.2	2.9	1.85	0.88	-120.84
8,375.0	0.88	96.00	8,372.2	-1.8	9.6	3.1	0.14	-0.08	-7.28
8,400.0	0.89	97.62	8,397.2	-1.8	10.0	3.2	0.11	0.04	6.48
8,425.0	0.92	97.85	8,422.2	-1.9	10.4	3.4	0.12	0.12	0.92
8,450.0	0.84	107.51	8,447.2	-2.0	10.8	3.5	0.67	-0.32	38.64
8,475.0	0.91	100.51	8,472.2	-2.1	11.1	3.6	0.51	0.28	-28.00
8,500.0	0.91	105.98	8,497.1	-2.1	11.5	3.7	0.35	0.00	21.88
8,525.0	0.69	116.61	8,522.1	-2.3	11.9	3.7	1.06	-0.88	42.52
8,550.0	0.42	121.45	8,547.1	-2.4	12.1	3.7	1.10	-1.08	19.36
8,575.0	0.40	201.05	8,572.1	-2.5	12.1	3.6	2.10	-0.08	318.40
8,600.0	0.37	204.94	8,597.1	-2.7	12.1	3.5	0.16	-0.12	15.56
8,625.0	0.28	189.57	8,622.1	-2.8	12.0	3.3	0.50	-0.36	-61.48
8,650.0	0.25	199.72	8,647.1	-2.9	12.0	3.2	0.22	-0.12	40.60

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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	0.12	193.16	8,672.1	-3.0	12.0	3.1	0.53	-0.52	-26.24
8,700.0	0.22	210.44	8,697.1	-3.1	11.9	3.1	0.45	0.40	69.12
8,725.0	0.31	203.25	8,722.1	-3.2	11.9	2.9	0.38	0.36	-28.76
8,750.0	0.29	186.98	8,747.1	-3.3	11.8	2.8	0.35	-0.08	-65.08
8,775.0	0.31	208.82	8,772.1	-3.4	11.8	2.7	0.46	0.08	87.36
8,800.0	0.25	217.04	8,797.1	-3.5	11.7	2.6	0.29	-0.24	32.88
8,825.0	0.18	198.75	8,822.1	-3.6	11.7	2.5	0.39	-0.28	-73.16
8,850.0	0.28	196.97	8,847.1	-3.7	11.7	2.4	0.40	0.40	-7.12
8,875.0	0.27	184.67	8,872.1	-3.8	11.6	2.3	0.24	-0.04	-49.20
8,900.0	0.26	191.49	8,897.1	-3.9	11.6	2.2	0.13	-0.04	27.28
8,925.0	0.27	196.19	8,922.1	-4.0	11.6	2.0	0.10	0.04	18.80
8,950.0	0.32	198.92	8,947.1	-4.2	11.6	1.9	0.21	0.20	10.92
8,975.0	0.29	167.77	8,972.1	-4.3	11.5	1.8	0.67	-0.12	-124.60
9,000.0	0.18	155.25	8,997.1	-4.4	11.6	1.7	0.48	-0.44	-50.08
9,025.0	0.12	161.98	9,022.1	-4.4	11.6	1.7	0.25	-0.24	26.92
9,050.0	0.22	203.77	9,047.1	-4.5	11.6	1.6	0.61	0.40	167.16
9,075.0	0.23	218.59	9,072.1	-4.6	11.5	1.5	0.24	0.04	59.28
9,100.0	0.20	203.19	9,097.1	-4.7	11.5	1.4	0.26	-0.12	-61.60
9,125.0	0.18	161.14	9,122.1	-4.7	11.5	1.4	0.55	-0.08	-168.20
9,150.0	0.19	190.62	9,147.1	-4.8	11.5	1.3	0.38	0.04	117.92
9,175.0	0.17	217.48	9,172.1	-4.9	11.5	1.2	0.34	-0.08	107.44
9,200.0	0.18	223.77	9,197.1	-5.0	11.4	1.1	0.09	0.04	25.16
9,225.0	0.13	197.23	9,222.1	-5.0	11.4	1.1	0.34	-0.20	-106.16
9,250.0	0.25	224.62	9,247.1	-5.1	11.3	1.0	0.59	0.48	109.56
9,275.0	0.91	259.02	9,272.1	-5.2	11.1	0.8	2.87	2.64	137.60
9,300.0	1.14	261.02	9,297.1	-5.2	10.7	0.5	0.93	0.92	8.00
9,325.0	1.17	261.19	9,322.1	-5.3	10.2	0.2	0.12	0.12	0.68
9,350.0	1.02	269.10	9,347.1	-5.3	9.7	0.0	0.85	-0.60	31.64
9,375.0	1.20	266.96	9,372.1	-5.4	9.2	-0.3	0.74	0.72	-8.56
9,400.0	1.30	261.49	9,397.1	-5.4	8.7	-0.6	0.62	0.40	-21.88
9,425.0	1.25	259.42	9,422.1	-5.5	8.1	-0.9	0.27	-0.20	-8.28
9,450.0	0.94	267.62	9,447.1	-5.6	7.6	-1.2	1.39	-1.24	32.80
9,475.0	0.94	268.36	9,472.1	-5.6	7.2	-1.4	0.05	0.00	2.96
9,500.0	0.85	261.61	9,497.1	-5.6	6.8	-1.6	0.55	-0.36	-27.00
9,525.0	0.51	265.01	9,522.1	-5.7	6.5	-1.8	1.37	-1.36	13.60
9,550.0	0.51	271.58	9,547.1	-5.7	6.3	-1.9	0.23	0.00	26.28
9,575.0	0.48	269.05	9,572.1	-5.7	6.1	-2.0	0.15	-0.12	-10.12
9,600.0	0.43	245.87	9,597.1	-5.7	5.9	-2.2	0.76	-0.20	-92.72
9,625.0	0.39	229.78	9,622.1	-5.8	5.8	-2.3	0.49	-0.16	-64.36
9,650.0	0.45	233.39	9,647.1	-5.9	5.6	-2.5	0.26	0.24	14.44
9,675.0	0.40	210.99	9,672.1	-6.0	5.5	-2.7	0.69	-0.20	-89.60
9,700.0	0.32	200.19	9,697.1	-6.2	5.4	-2.8	0.42	-0.32	-43.20

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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)
9,725.0	0.44	224.09	9,722.1	-6.3	5.3	-3.0	0.79	0.48	95.60
9,750.0	0.40	209.41	9,747.1	-6.5	5.2	-3.2	0.46	-0.16	-58.72
9,775.0	0.52	220.46	9,772.1	-6.6	5.1	-3.3	0.59	0.48	44.20
9,800.0	0.38	231.03	9,797.1	-6.8	5.0	-3.5	0.65	-0.56	42.28
9,825.0	0.45	235.80	9,822.1	-6.9	4.8	-3.7	0.31	0.28	19.08
9,850.0	0.38	240.14	9,847.1	-7.0	4.7	-3.9	0.31	-0.28	17.36
9,875.0	0.59	238.09	9,872.1	-7.1	4.5	-4.0	0.84	0.84	-8.20
9,900.0	0.61	234.96	9,897.1	-7.2	4.3	-4.3	0.15	0.08	-12.52
9,925.0	0.68	238.44	9,922.1	-7.4	4.0	-4.5	0.32	0.28	13.92
9,950.0	0.68	230.98	9,947.1	-7.5	3.8	-4.8	0.35	0.00	-29.84
9,975.0	0.49	225.89	9,972.1	-7.7	3.6	-5.0	0.79	-0.76	-20.36
10,000.0	0.53	225.84	9,997.1	-7.9	3.4	-5.2	0.16	0.16	-0.20
10,025.0	0.49	225.14	10,022.1	-8.0	3.3	-5.5	0.16	-0.16	-2.80
10,050.0	0.50	229.62	10,047.1	-8.2	3.1	-5.7	0.16	0.04	17.92
10,075.0	0.66	222.21	10,072.1	-8.3	2.9	-5.9	0.71	0.64	-29.64
10,100.0	0.60	215.10	10,097.1	-8.6	2.8	-6.2	0.39	-0.24	-28.44
10,125.0	0.60	215.58	10,122.1	-8.8	2.6	-6.4	0.02	0.00	1.92
10,150.0	0.54	209.85	10,147.1	-9.0	2.5	-6.7	0.33	-0.24	-22.92
10,175.0	0.74	203.76	10,172.1	-9.2	2.4	-7.0	0.84	0.80	-24.36
10,200.0	0.75	193.75	10,197.1	-9.5	2.3	-7.3	0.52	0.04	-40.04
10,225.0	0.81	193.48	10,222.1	-9.9	2.2	-7.6	0.24	0.24	-1.08
10,250.0	1.06	196.29	10,247.1	-10.3	2.1	-8.0	1.02	1.00	11.24
10,275.0	1.31	203.80	10,272.1	-10.7	1.9	-8.5	1.18	1.00	30.04
10,300.0	1.60	207.01	10,297.0	-11.3	1.6	-9.1	1.20	1.16	12.84
10,325.0	1.62	205.58	10,322.0	-12.0	1.3	-9.8	0.18	0.08	-5.72
10,350.0	1.48	211.34	10,347.0	-12.5	1.0	-10.5	0.84	-0.56	23.04
10,375.0	1.04	251.57	10,372.0	-12.9	0.6	-11.0	3.84	-1.76	160.92
10,400.0	1.19	285.17	10,397.0	-12.9	0.1	-11.2	2.64	0.60	134.40
10,425.0	1.13	286.33	10,422.0	-12.8	-0.4	-11.4	0.26	-0.24	4.64
10,450.0	1.12	283.19	10,447.0	-12.6	-0.8	-11.5	0.25	-0.04	-12.56
10,475.0	1.13	279.71	10,472.0	-12.5	-1.3	-11.6	0.28	0.04	-13.92
10,500.0	1.04	287.93	10,497.0	-12.4	-1.8	-11.7	0.72	-0.36	32.88
10,525.0	0.89	290.33	10,522.0	-12.3	-2.2	-11.8	0.62	-0.60	9.60
10,550.0	0.83	292.35	10,547.0	-12.2	-2.5	-11.9	0.27	-0.24	8.08
10,575.0	0.70	292.50	10,572.0	-12.0	-2.8	-11.9	0.52	-0.52	0.60
10,600.0	0.57	292.94	10,597.0	-11.9	-3.1	-11.9	0.52	-0.52	1.76
10,625.0	0.29	297.04	10,622.0	-11.8	-3.2	-11.9	1.13	-1.12	16.40
10,650.0	0.21	300.51	10,647.0	-11.8	-3.3	-11.9	0.33	-0.32	13.88
10,675.0	0.21	229.89	10,672.0	-11.8	-3.4	-12.0	0.97	0.00	-282.48
10,700.0	0.06	177.72	10,697.0	-11.8	-3.5	-12.0	0.72	-0.60	-208.68
10,725.0	0.12	196.10	10,722.0	-11.9	-3.5	-12.1	0.26	0.24	73.52
10,750.0	0.20	210.97	10,747.0	-11.9	-3.5	-12.1	0.36	0.32	59.48

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #701H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #701H

RKB=3315.9+25 @ 3340.9usft (PRECISION 595)

RKB=3315.9+25 @ 3340.9usft (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	0.29	209.36	10,772.0	-12.0	-3.5	-12.3	0.36	0.36	-6.44
10,800.0	0.26	195.43	10,797.0	-12.1	-3.6	-12.4	0.29	-0.12	-55.72
10,825.0	0.34	155.03	10,822.0	-12.3	-3.6	-12.5	0.88	0.32	-161.60
10,850.0	0.51	121.78	10,847.0	-12.4	-3.4	-12.5	1.17	0.68	-133.00
10,875.0	0.68	123.62	10,872.0	-12.5	-3.2	-12.5	0.68	0.68	7.36
10,900.0	0.75	125.78	10,897.0	-12.7	-3.0	-12.6	0.30	0.28	8.64
10,925.0	0.78	128.03	10,922.0	-12.9	-2.7	-12.6	0.17	0.12	9.00
10,950.0	0.70	140.97	10,947.0	-13.1	-2.5	-12.7	0.74	-0.32	51.76
10,975.0	0.66	144.20	10,972.0	-13.4	-2.3	-12.8	0.22	-0.16	12.92
11,000.0	0.64	139.23	10,997.0	-13.6	-2.1	-12.9	0.24	-0.08	-19.88
11,025.0	0.52	140.82	11,022.0	-13.8	-2.0	-13.0	0.48	-0.48	6.36
11,050.0	0.56	148.12	11,047.0	-14.0	-1.8	-13.1	0.32	0.16	29.20
11,075.0	0.55	143.69	11,072.0	-14.2	-1.7	-13.2	0.18	-0.04	-17.72
11,100.0	0.44	159.86	11,097.0	-14.4	-1.6	-13.3	0.71	-0.44	64.68
11,125.0	0.06	56.54	11,122.0	-14.4	-1.5	-13.4	1.83	-1.52	-413.28
11,150.0	0.34	28.64	11,147.0	-14.4	-1.5	-13.3	1.15	1.12	-111.60
11,175.0	0.55	33.43	11,172.0	-14.2	-1.4	-13.1	0.85	0.84	19.16
11,200.0	0.61	29.38	11,197.0	-14.0	-1.3	-12.9	0.29	0.24	-16.20
11,225.0	0.44	340.21	11,222.0	-13.8	-1.2	-12.7	1.85	-0.88	-196.68
11,250.0	0.50	353.50	11,247.0	-13.6	-1.3	-12.5	0.50	0.24	53.16
11,275.0	0.49	336.11	11,272.0	-13.4	-1.3	-12.4	0.60	-0.04	-69.56
11,300.0	0.60	329.50	11,297.0	-13.2	-1.4	-12.2	0.51	0.44	-26.44
11,325.0	0.75	340.93	11,322.0	-12.9	-1.6	-12.1	0.80	0.60	45.72
11,350.0	0.80	322.04	11,347.0	-12.6	-1.7	-11.9	1.04	0.20	-75.56
11,375.0	0.72	321.71	11,372.0	-12.3	-1.9	-11.7	0.32	-0.32	-1.32
11,400.0	0.67	328.58	11,397.0	-12.1	-2.1	-11.6	0.39	-0.20	27.48
11,425.0	0.66	298.64	11,422.0	-11.9	-2.3	-11.5	1.37	-0.04	-119.76
11,450.0	0.63	298.94	11,447.0	-11.8	-2.5	-11.5	0.12	-0.12	1.20
11,457.2	0.62	299.61	11,454.2	-11.7	-2.6	-11.5	0.17	-0.14	9.25
11,630.0	2.00	319.86	11,626.9	-9.0	-5.4	-10.4	0.83	0.80	11.72
11,662.0	2.61	330.08	11,658.9	-7.9	-6.1	-9.9	2.29	1.91	31.94
11,677.0	2.63	330.38	11,673.9	-7.3	-6.4	-9.5	0.16	0.13	2.00
11,771.0	0.65	238.80	11,767.8	-5.7	-8.0	-8.8	2.90	-2.11	-97.43
11,834.0	4.05	187.97	11,830.8	-8.1	-8.6	-11.2	5.83	5.40	-80.68
11,866.0	10.01	180.70	11,862.5	-12.0	-8.8	-14.7	18.79	18.63	-22.72
11,897.0	16.74	180.76	11,892.7	-19.2	-8.9	-21.1	21.71	21.71	0.19
11,929.0	20.43	181.17	11,923.0	-29.4	-9.0	-30.1	11.54	11.53	1.28
11,960.0	23.04	180.14	11,951.8	-40.8	-9.2	-40.2	8.51	8.42	-3.32
11,992.0	24.64	179.47	11,981.0	-53.8	-9.1	-51.5	5.07	5.00	-2.09
12,024.0	27.13	180.05	12,009.8	-67.7	-9.0	-63.7	7.82	7.78	1.81
12,055.0	31.16	179.96	12,036.9	-82.8	-9.1	-77.0	13.00	13.00	-0.29
12,087.0	34.41	179.64	12,063.8	-100.2	-9.0	-92.1	10.17	10.16	-1.00

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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)
12,118.0	35.40	178.95	12,089.2	-117.9	-8.8	-107.6	3.44	3.19	-2.23
12,150.0	37.20	178.12	12,115.0	-136.8	-8.3	-123.9	5.83	5.63	-2.59
12,182.0	40.19	177.51	12,140.0	-156.8	-7.5	-141.1	9.42	9.34	-1.91
12,213.0	42.32	176.87	12,163.3	-177.2	-6.5	-158.5	7.00	6.87	-2.06
12,245.0	42.79	175.42	12,186.9	-198.8	-5.1	-176.7	3.40	1.47	-4.53
12,277.0	44.47	175.01	12,210.0	-220.8	-3.2	-195.1	5.32	5.25	-1.28
12,308.0	46.90	175.12	12,231.7	-242.9	-1.3	-213.6	7.84	7.84	0.35
12,340.0	50.01	175.83	12,252.9	-266.8	0.6	-233.6	9.86	9.72	2.22
12,371.0	52.78	177.15	12,272.2	-291.0	2.1	-254.1	9.53	8.94	4.26
12,403.0	54.27	177.70	12,291.3	-316.7	3.2	-276.0	4.86	4.66	1.72
12,434.0	54.86	178.70	12,309.2	-341.9	4.0	-297.8	3.25	1.90	3.23
12,466.0	55.75	179.62	12,327.4	-368.2	4.4	-320.7	3.65	2.78	2.88
12,497.0	55.23	179.26	12,345.0	-393.8	4.6	-342.9	1.93	-1.68	-1.16
12,529.0	58.51	179.56	12,362.5	-420.6	4.9	-366.3	10.28	10.25	0.94
12,561.0	63.07	180.21	12,378.1	-448.5	5.0	-390.7	14.36	14.25	2.03
12,592.0	66.79	180.87	12,391.2	-476.6	4.7	-415.5	12.15	12.00	2.13
12,624.0	70.96	181.04	12,402.8	-506.4	4.2	-441.9	13.04	13.03	0.53
12,656.0	74.40	180.94	12,412.3	-537.0	3.7	-468.9	10.75	10.75	-0.31
12,687.0	76.82	181.22	12,420.0	-567.0	3.1	-495.5	7.86	7.81	0.90
12,719.0	80.10	179.82	12,426.4	-598.3	2.8	-523.1	11.11	10.25	-4.38
12,750.0	83.36	178.93	12,430.9	-629.0	3.2	-549.8	10.89	10.52	-2.87
12,764.0	83.89	179.16	12,432.4	-642.9	3.4	-561.9	4.12	3.79	1.64
12,826.0	86.28	178.84	12,437.7	-704.7	4.5	-615.5	3.89	3.85	-0.52
12,858.0	86.53	179.16	12,439.7	-736.6	5.0	-643.2	1.27	0.78	1.00
12,952.0	89.24	180.21	12,443.2	-830.5	5.5	-725.3	3.09	2.88	1.12
13,047.0	90.61	181.66	12,443.3	-925.5	4.0	-809.3	2.10	1.44	1.53
13,142.0	89.05	180.68	12,443.6	-1,020.5	2.1	-893.5	1.94	-1.64	-1.03
13,237.0	89.61	180.90	12,444.7	-1,115.5	0.7	-977.4	0.63	0.59	0.23
13,332.0	89.61	179.69	12,445.4	-1,210.5	0.3	-1,060.9	1.27	0.00	-1.27
13,427.0	90.11	177.86	12,445.6	-1,305.4	2.3	-1,143.1	2.00	0.53	-1.93
13,522.0	89.80	176.41	12,445.7	-1,400.3	7.0	-1,224.0	1.56	-0.33	-1.53
13,617.0	92.91	177.98	12,443.4	-1,495.2	11.7	-1,304.9	3.67	3.27	1.65
13,713.0	87.84	177.97	12,442.8	-1,591.1	15.1	-1,387.3	5.28	-5.28	-0.01
13,808.0	91.82	180.86	12,443.1	-1,686.0	16.0	-1,470.1	5.18	4.19	3.04
13,903.0	90.70	181.16	12,441.0	-1,781.0	14.4	-1,554.1	1.22	-1.18	0.32
13,999.0	87.48	179.30	12,442.5	-1,877.0	14.0	-1,638.4	3.87	-3.35	-1.94
14,088.0	86.92	178.92	12,446.9	-1,965.8	15.4	-1,715.7	0.76	-0.63	-0.43
14,183.0	87.73	180.88	12,451.3	-2,060.7	15.5	-1,798.8	2.23	0.85	2.06
14,278.0	87.87	180.00	12,454.9	-2,155.7	14.8	-1,882.3	0.94	0.15	-0.93
14,373.0	88.38	179.35	12,458.1	-2,250.6	15.3	-1,965.3	0.87	0.54	-0.68
14,467.0	90.56	178.71	12,458.9	-2,344.6	16.9	-2,046.9	2.42	2.32	-0.68
14,562.0	88.82	180.12	12,459.4	-2,439.6	17.9	-2,129.7	2.36	-1.83	1.48

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM

Site: BULLDOG

Well: COONSKIN FEE #701H

Wellbore: OWB

Design: ACTUAL WELLPATH

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well COONSKIN FEE #701H

RKB=3315.9+25 @ 3340.9usft (PRECISION 595)

RKB=3315.9+25 @ 3340.9usft (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)
14,657.0	85.54	181.76	12,464.1	-2,534.4	16.3	-2,213.6	3.86	-3.45	1.73
14,752.0	89.41	183.33	12,468.3	-2,629.2	12.1	-2,298.7	4.40	4.07	1.65
14,846.0	91.01	185.63	12,468.0	-2,722.9	4.8	-2,384.4	2.98	1.70	2.45
14,941.0	86.02	178.25	12,470.4	-2,817.7	1.6	-2,469.0	9.37	-5.25	-7.77
15,036.0	87.06	177.33	12,476.2	-2,912.5	5.2	-2,550.3	1.46	1.09	-0.97
15,130.0	87.62	177.99	12,480.5	-3,006.3	9.1	-2,630.7	0.92	0.60	0.70
15,225.0	86.41	176.08	12,485.5	-3,101.0	14.0	-2,711.4	2.40	-1.27	-2.03
15,320.0	86.95	176.66	12,491.0	-3,195.7	20.0	-2,791.4	0.85	0.57	0.63
15,415.0	87.06	177.62	12,495.9	-3,290.4	24.7	-2,872.2	1.02	0.12	1.01
15,510.0	87.73	178.11	12,500.2	-3,385.3	28.3	-2,953.6	0.87	0.71	0.52
15,603.0	88.66	179.24	12,503.2	-3,478.2	30.4	-3,034.1	1.57	1.00	1.22
15,698.0	89.27	180.09	12,504.9	-3,573.2	31.0	-3,117.0	1.10	0.64	0.89
15,792.0	88.85	180.92	12,506.4	-3,667.2	30.2	-3,199.8	0.99	-0.45	0.88
15,888.0	89.16	180.28	12,508.1	-3,763.1	29.1	-3,284.4	0.74	0.32	-0.67
15,983.0	86.95	179.44	12,511.3	-3,858.1	29.4	-3,367.5	2.49	-2.33	-0.88
16,077.0	84.98	178.62	12,517.9	-3,951.8	31.0	-3,448.9	2.27	-2.10	-0.87
16,171.0	85.10	178.10	12,526.1	-4,045.4	33.6	-3,529.7	0.57	0.13	-0.55
16,266.0	89.27	178.09	12,530.7	-4,140.3	36.8	-3,611.3	4.39	4.39	-0.01
16,361.0	90.61	177.87	12,530.8	-4,235.2	40.1	-3,692.9	1.43	1.41	-0.23
16,456.0	91.18	179.55	12,529.3	-4,330.2	42.3	-3,775.1	1.87	0.60	1.77
16,551.0	92.38	179.22	12,526.4	-4,425.1	43.3	-3,857.8	1.31	1.26	-0.35
16,646.0	90.61	179.95	12,523.9	-4,520.1	44.0	-3,940.7	2.02	-1.86	0.77
16,741.0	89.39	178.47	12,523.9	-4,615.1	45.3	-4,023.4	2.02	-1.28	-1.56
16,837.0	87.39	178.09	12,526.6	-4,711.0	48.2	-4,106.0	2.12	-2.08	-0.40
17,027.0	86.38	176.08	12,538.9	-4,900.4	57.8	-4,267.5	1.18	-0.53	-1.06
17,121.0	87.23	178.40	12,542.2	-4,994.2	62.3	-4,347.5	2.62	0.90	2.47
17,215.0	88.82	181.12	12,545.4	-5,088.1	62.7	-4,429.6	3.35	1.69	2.89
17,310.0	89.55	182.72	12,546.8	-5,183.0	59.6	-4,514.3	1.85	0.77	1.68
17,405.0	87.57	181.15	12,549.2	-5,277.9	56.3	-4,599.1	2.66	-2.08	-1.65
17,500.0	89.47	181.29	12,551.6	-5,372.9	54.3	-4,683.3	2.01	2.00	0.15
17,595.0	89.54	180.47	12,552.4	-5,467.9	52.9	-4,767.2	0.87	0.07	-0.86
17,690.0	89.33	179.09	12,553.4	-5,562.9	53.2	-4,850.3	1.47	-0.22	-1.45
17,727.0	88.77	178.23	12,554.0	-5,599.8	54.1	-4,882.3	2.77	-1.51	-2.32
17,881.0	87.59	177.08	12,558.9	-5,753.6	60.4	-5,014.1	1.07	-0.77	-0.75
17,976.0	89.02	178.68	12,561.7	-5,848.5	63.9	-5,095.6	2.26	1.51	1.68
18,072.0	87.56	179.61	12,564.5	-5,944.5	65.3	-5,179.0	1.80	-1.52	0.97
18,167.0	91.07	180.98	12,565.7	-6,039.4	64.8	-5,262.4	3.97	3.69	1.44
18,262.0	88.04	180.38	12,566.4	-6,134.4	63.7	-5,346.2	3.25	-3.19	-0.63
18,357.0	90.87	181.49	12,567.3	-6,229.4	62.2	-5,430.2	3.20	2.98	1.17
18,452.0	89.44	181.67	12,567.1	-6,324.3	59.6	-5,514.7	1.52	-1.51	0.19
18,548.0	87.93	182.95	12,569.3	-6,420.2	55.7	-5,600.6	2.06	-1.57	1.33
18,643.0	88.35	183.83	12,572.4	-6,515.0	50.1	-5,686.4	1.03	0.44	0.93

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: LEA COUNTY, NM
Site: BULLDOG
Well: COONSKIN FEE #701H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well COONSKIN FEE #701H
TVD Reference: RKB=3315.9+25 @ 3340.9usft (PRECISION 595)
MD Reference: RKB=3315.9+25 @ 3340.9usft (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)
18,737.0	90.06	184.24	12,573.7	-6,608.8	43.5	-5,771.8	1.87	1.82	0.44
18,830.0	86.64	180.87	12,576.3	-6,701.6	39.3	-5,855.2	5.16	-3.68	-3.62
18,925.0	87.06	182.19	12,581.6	-6,796.4	36.8	-5,939.5	1.46	0.44	1.39
19,020.0	87.03	179.73	12,586.5	-6,891.3	35.2	-6,023.4	2.59	-0.03	-2.59
19,115.0	87.59	177.88	12,590.9	-6,986.2	37.2	-6,105.6	2.03	0.59	-1.95
19,209.0	87.68	177.85	12,594.8	-7,080.0	40.7	-6,186.2	0.10	0.10	-0.03
19,304.0	90.89	180.05	12,596.0	-7,175.0	42.4	-6,268.6	4.10	3.38	2.32
19,399.0	91.31	179.83	12,594.2	-7,270.0	42.5	-6,351.8	0.50	0.44	-0.23
19,494.0	87.37	178.84	12,595.2	-7,364.9	43.6	-6,434.5	4.28	-4.15	-1.04
19,589.0	87.90	177.97	12,599.2	-7,459.8	46.2	-6,516.4	1.07	0.56	-0.92
19,671.0	85.41	178.38	12,604.0	-7,541.6	48.9	-6,586.8	3.08	-3.04	0.50
19,684.0	85.01	178.44	12,605.0	-7,554.6	49.2	-6,598.0	3.11	-3.08	0.46
19,733.0	84.87	178.30	12,609.4	-7,603.4	50.6	-6,640.1	0.40	-0.29	-0.29
19,795.0	84.87	178.30	12,614.9	-7,665.1	52.4	-6,693.3	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____