

C O N C H O

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NORTHERN DELAWARE BASIN

LEA COUNTY, NM

BULLDOG

Jacinto Federal Com #40H

ST01

Design: ACTUAL WELLPATH ST01

Standard Survey Report

27 August, 2018

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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
From:	Map	Easting:	741,887.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 36.820 N
		Longitude:	103° 33' 8.116 W
		Grid Convergence:	0.42 °

Well	BASEBALL CAP FED COM #24H		
Well Position	+N/-S	0.0 usft	Northing: 431,112.90 usft
	+E/-W	0.0 usft	Easting: 782,226.20 usft
			Latitude: 32° 10' 55.044 N
			Longitude: 103° 25' 16.037 W
Position Uncertainty	3.0 usft	Wellhead Elevation:	usft
		Ground Level:	3,382.0 usft

Wellbore	ST01		
Magnetics	Model Name	Sample Date	Declination
			(°)
	WMM2015	8/8/2018	6.78
			Dip Angle
			(°)
			60.01
			Field Strength
			(nT)
			47,797.01723655

Design	ACTUAL WELLPATH ST01		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	17,118.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			357.67

Survey Program	Date 8/24/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	12,048.0	GYRO (OWB)	Standard Keeper 104
12,183.0	17,118.0	MWD-CURVE/LATERAL (OWB)	Standard Wireline Keeper ver 1.0.4
17,137.0	23,038.0	MWD - LATERAL ST01 (ST01)	MWD+IFR1+MS
			OWSG MWD + IFR1 + Multi-Station Correction
			MWD+IFR1+MS
			OWSG MWD + IFR1 + Multi-Station Correction

Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.41	296.09	100.0	0.2	-0.3	0.2	0.41	0.41	0.00
125.0	0.41	295.38	125.0	0.2	-0.5	0.3	0.02	0.00	-2.84
150.0	0.46	298.25	150.0	0.3	-0.7	0.3	0.22	0.20	11.48
175.0	0.51	282.59	175.0	0.4	-0.8	0.4	0.56	0.20	-62.64
200.0	0.53	286.68	200.0	0.5	-1.1	0.5	0.17	0.08	16.36
225.0	0.48	292.53	225.0	0.5	-1.3	0.6	0.29	-0.20	23.40
250.0	0.45	286.67	250.0	0.6	-1.5	0.7	0.22	-0.12	-23.44
275.0	0.44	287.95	275.0	0.6	-1.7	0.7	0.06	-0.04	5.12

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)
300.0	0.48	284.02	300.0	0.7	-1.8	0.8	0.20	0.16	-15.72
325.0	0.47	292.54	325.0	0.8	-2.0	0.9	0.29	-0.04	34.08
350.0	0.47	289.95	350.0	0.8	-2.2	0.9	0.08	0.00	-10.36
375.0	0.52	299.36	375.0	0.9	-2.4	1.0	0.38	0.20	37.64
400.0	0.60	298.26	400.0	1.1	-2.6	1.2	0.32	0.32	-4.40
425.0	0.51	284.18	425.0	1.1	-2.9	1.3	0.65	-0.36	-56.32
450.0	0.48	286.74	450.0	1.2	-3.1	1.3	0.15	-0.12	10.24
475.0	0.47	284.56	475.0	1.3	-3.3	1.4	0.08	-0.04	-8.72
500.0	0.48	288.67	500.0	1.3	-3.5	1.5	0.14	0.04	16.44
525.0	0.52	291.24	525.0	1.4	-3.7	1.5	0.18	0.16	10.28
550.0	0.53	290.96	550.0	1.5	-3.9	1.6	0.04	0.04	-1.12
575.0	0.57	285.42	575.0	1.5	-4.1	1.7	0.27	0.16	-22.16
600.0	0.48	279.80	600.0	1.6	-4.3	1.8	0.41	-0.36	-22.48
625.0	0.45	281.28	625.0	1.6	-4.5	1.8	0.13	-0.12	5.92
650.0	0.45	285.98	650.0	1.7	-4.7	1.9	0.15	0.00	18.80
675.0	0.48	283.37	675.0	1.7	-4.9	1.9	0.15	0.12	-10.44
700.0	0.42	277.84	700.0	1.8	-5.1	2.0	0.30	-0.24	-22.12
725.0	0.57	288.08	725.0	1.8	-5.3	2.0	0.69	0.60	40.96
750.0	0.50	276.09	750.0	1.9	-5.6	2.1	0.53	-0.28	-47.96
775.0	0.47	285.06	775.0	1.9	-5.8	2.1	0.33	-0.12	35.88
800.0	0.33	282.80	800.0	1.9	-5.9	2.2	0.56	-0.56	-9.04
825.0	0.32	288.03	825.0	2.0	-6.1	2.2	0.13	-0.04	20.92
850.0	0.37	296.61	850.0	2.0	-6.2	2.3	0.29	0.20	34.32
875.0	0.35	288.57	875.0	2.1	-6.4	2.4	0.22	-0.08	-32.16
900.0	0.36	291.65	900.0	2.2	-6.5	2.4	0.09	0.04	12.32
925.0	0.37	288.93	925.0	2.2	-6.6	2.5	0.08	0.04	-10.88
950.0	0.27	295.51	950.0	2.3	-6.8	2.5	0.43	-0.40	26.32
975.0	0.26	321.19	975.0	2.3	-6.9	2.6	0.47	-0.04	102.72
1,000.0	0.39	332.01	1,000.0	2.5	-6.9	2.7	0.57	0.52	43.28
1,025.0	0.10	268.66	1,025.0	2.5	-7.0	2.8	1.43	-1.16	-253.40
1,050.0	0.08	288.73	1,050.0	2.5	-7.0	2.8	0.15	-0.08	80.28
1,075.0	0.06	225.30	1,075.0	2.5	-7.1	2.8	0.30	-0.08	-253.72
1,100.0	0.06	288.21	1,100.0	2.5	-7.1	2.8	0.25	0.00	251.64
1,125.0	0.03	352.37	1,125.0	2.5	-7.1	2.8	0.22	-0.12	256.64
1,150.0	0.03	11.44	1,150.0	2.5	-7.1	2.8	0.04	0.00	76.28
1,175.0	0.08	358.07	1,175.0	2.6	-7.1	2.9	0.21	0.20	-53.48
1,200.0	0.08	111.69	1,200.0	2.6	-7.1	2.9	0.54	0.00	454.48
1,225.0	0.13	131.21	1,225.0	2.6	-7.0	2.8	0.24	0.20	78.08
1,250.0	0.25	138.53	1,250.0	2.5	-7.0	2.8	0.49	0.48	29.28
1,275.0	0.24	126.43	1,275.0	2.4	-6.9	2.7	0.21	-0.04	-48.40
1,300.0	0.20	103.70	1,300.0	2.4	-6.8	2.7	0.38	-0.16	-90.92
1,325.0	0.21	115.51	1,325.0	2.4	-6.7	2.6	0.17	0.04	47.24
1,350.0	0.13	105.89	1,350.0	2.3	-6.7	2.6	0.34	-0.32	-38.48

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Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	Database:	EDM_Users

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,375.0	0.23	129.27	1,375.0	2.3	-6.6	2.6	0.49	0.40	93.52
1,400.0	0.26	119.09	1,400.0	2.2	-6.5	2.5	0.21	0.12	-40.72
1,425.0	0.58	144.47	1,425.0	2.1	-6.4	2.4	1.45	1.28	101.52
1,450.0	0.25	119.75	1,450.0	2.0	-6.3	2.2	1.47	-1.32	-98.88
1,475.0	0.28	119.50	1,475.0	1.9	-6.2	2.2	0.12	0.12	-1.00
1,500.0	0.36	127.09	1,500.0	1.8	-6.1	2.1	0.36	0.32	30.36
1,525.0	0.26	122.96	1,525.0	1.8	-5.9	2.0	0.41	-0.40	-16.52
1,550.0	0.41	134.11	1,550.0	1.7	-5.8	1.9	0.65	0.60	44.60
1,575.0	0.41	135.47	1,575.0	1.5	-5.7	1.8	0.04	0.00	5.44
1,600.0	0.46	126.71	1,600.0	1.4	-5.6	1.6	0.33	0.20	-35.04
1,625.0	0.38	124.64	1,625.0	1.3	-5.4	1.5	0.33	-0.32	-8.28
1,650.0	0.42	121.36	1,650.0	1.2	-5.3	1.4	0.18	0.16	-13.12
1,675.0	0.53	126.47	1,675.0	1.1	-5.1	1.3	0.47	0.44	20.44
1,700.0	0.53	127.39	1,700.0	1.0	-4.9	1.2	0.03	0.00	3.68
1,725.0	0.50	129.46	1,725.0	0.8	-4.7	1.0	0.14	-0.12	8.28
1,750.0	0.53	130.81	1,750.0	0.7	-4.6	0.9	0.13	0.12	5.40
1,775.0	0.54	129.99	1,775.0	0.5	-4.4	0.7	0.05	0.04	-3.28
1,800.0	0.60	135.50	1,800.0	0.4	-4.2	0.5	0.32	0.24	22.04
1,825.0	0.66	132.59	1,825.0	0.2	-4.0	0.3	0.27	0.24	-11.64
1,850.0	0.67	128.40	1,850.0	0.0	-3.8	0.1	0.20	0.04	-16.76
1,875.0	0.65	128.41	1,875.0	-0.2	-3.6	-0.1	0.08	-0.08	0.04
1,900.0	0.67	131.80	1,900.0	-0.4	-3.3	-0.3	0.18	0.08	13.56
1,925.0	0.59	125.97	1,924.9	-0.6	-3.1	-0.4	0.41	-0.32	-23.32
1,950.0	0.58	128.41	1,949.9	-0.7	-2.9	-0.6	0.11	-0.04	9.76
1,975.0	0.64	133.53	1,974.9	-0.9	-2.7	-0.8	0.32	0.24	20.48
2,000.0	0.78	136.01	1,999.9	-1.1	-2.5	-1.0	0.57	0.56	9.92
2,025.0	0.73	132.04	2,024.9	-1.3	-2.3	-1.2	0.29	-0.20	-15.88
2,050.0	0.72	131.93	2,049.9	-1.6	-2.0	-1.5	0.04	-0.04	-0.44
2,075.0	0.73	133.69	2,074.9	-1.8	-1.8	-1.7	0.10	0.04	7.04
2,100.0	0.74	135.33	2,099.9	-2.0	-1.6	-1.9	0.09	0.04	6.56
2,125.0	0.71	133.70	2,124.9	-2.2	-1.3	-2.2	0.15	-0.12	-6.52
2,150.0	0.67	131.59	2,149.9	-2.4	-1.1	-2.4	0.19	-0.16	-8.44
2,175.0	0.63	134.10	2,174.9	-2.6	-0.9	-2.6	0.20	-0.16	10.04
2,200.0	0.76	138.38	2,199.9	-2.8	-0.7	-2.8	0.56	0.52	17.12
2,225.0	0.80	129.83	2,224.9	-3.1	-0.5	-3.0	0.49	0.16	-34.20
2,250.0	0.79	135.33	2,249.9	-3.3	-0.2	-3.3	0.31	-0.04	22.00
2,275.0	0.72	134.21	2,274.9	-3.5	0.0	-3.5	0.29	-0.28	-4.48
2,300.0	0.76	136.90	2,299.9	-3.8	0.2	-3.8	0.21	0.16	10.76
2,325.0	0.77	135.79	2,324.9	-4.0	0.5	-4.0	0.07	0.04	-4.44
2,350.0	0.76	139.56	2,349.9	-4.3	0.7	-4.3	0.21	-0.04	15.08
2,375.0	0.91	138.62	2,374.9	-4.5	0.9	-4.6	0.60	0.60	-3.76
2,400.0	0.92	134.77	2,399.9	-4.8	1.2	-4.9	0.25	0.04	-15.40
2,425.0	0.94	136.47	2,424.9	-5.1	1.5	-5.2	0.14	0.08	6.80

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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)	
2,450.0	0.95	139.27	2,449.9	-5.4	1.8	-5.5	0.19	0.04	11.20	
2,475.0	0.88	141.13	2,474.9	-5.7	2.0	-5.8	0.30	-0.28	7.44	
2,500.0	0.94	139.17	2,499.9	-6.0	2.3	-6.1	0.27	0.24	-7.84	
2,525.0	0.77	132.03	2,524.9	-6.3	2.5	-6.4	0.80	-0.68	-28.56	
2,550.0	1.02	142.93	2,549.9	-6.6	2.8	-6.7	1.21	1.00	43.60	
2,575.0	0.92	137.97	2,574.9	-6.9	3.1	-7.0	0.52	-0.40	-19.84	
2,600.0	0.88	136.41	2,599.9	-7.2	3.3	-7.3	0.19	-0.16	-6.24	
2,625.0	0.90	136.54	2,624.9	-7.5	3.6	-7.6	0.08	0.08	0.52	
2,650.0	0.90	139.80	2,649.9	-7.8	3.9	-7.9	0.20	0.00	13.04	
2,675.0	0.97	140.78	2,674.9	-8.1	4.1	-8.2	0.29	0.28	3.92	
2,700.0	0.93	136.18	2,699.9	-8.4	4.4	-8.6	0.34	-0.16	-18.40	
2,725.0	0.99	139.54	2,724.9	-8.7	4.7	-8.9	0.33	0.24	13.44	
2,750.0	0.92	138.78	2,749.9	-9.0	5.0	-9.2	0.28	-0.28	-3.04	
2,775.0	0.88	138.92	2,774.9	-9.3	5.2	-9.5	0.16	-0.16	0.56	
2,800.0	0.95	138.32	2,799.9	-9.6	5.5	-9.8	0.28	0.28	-2.40	
2,825.0	0.84	144.40	2,824.9	-9.9	5.7	-10.1	0.58	-0.44	24.32	
2,850.0	0.81	156.57	2,849.9	-10.2	5.9	-10.5	0.71	-0.12	48.68	
2,875.0	0.67	169.38	2,874.9	-10.5	6.0	-10.8	0.86	-0.56	51.24	
2,900.0	0.69	177.73	2,899.8	-10.8	6.0	-11.1	0.40	0.08	33.40	
2,925.0	0.66	185.27	2,924.8	-11.1	6.0	-11.4	0.37	-0.12	30.16	
2,950.0	0.68	191.71	2,949.8	-11.4	6.0	-11.6	0.31	0.08	25.76	
2,975.0	0.62	192.88	2,974.8	-11.7	5.9	-11.9	0.25	-0.24	4.68	
3,000.0	0.63	192.99	2,999.8	-12.0	5.9	-12.2	0.04	0.04	0.44	
3,025.0	0.63	190.19	3,024.8	-12.2	5.8	-12.5	0.12	0.00	-11.20	
3,050.0	0.57	195.25	3,049.8	-12.5	5.7	-12.7	0.32	-0.24	20.24	
3,075.0	0.65	196.36	3,074.8	-12.7	5.7	-13.0	0.32	0.32	4.44	
3,100.0	0.69	196.42	3,099.8	-13.0	5.6	-13.2	0.16	0.16	0.24	
3,125.0	0.63	192.51	3,124.8	-13.3	5.5	-13.5	0.30	-0.24	-15.64	
3,150.0	0.58	195.28	3,149.8	-13.6	5.5	-13.8	0.23	-0.20	11.08	
3,175.0	0.59	190.61	3,174.8	-13.8	5.4	-14.0	0.19	0.04	-18.68	
3,200.0	0.55	192.43	3,199.8	-14.0	5.3	-14.3	0.18	-0.16	7.28	
3,225.0	0.49	196.94	3,224.8	-14.3	5.3	-14.5	0.29	-0.24	18.04	
3,250.0	0.41	192.97	3,249.8	-14.5	5.2	-14.7	0.34	-0.32	-15.88	
3,275.0	0.30	191.38	3,274.8	-14.6	5.2	-14.8	0.44	-0.44	-6.36	
3,300.0	0.40	185.34	3,299.8	-14.8	5.2	-15.0	0.43	0.40	-24.16	
3,325.0	0.33	180.56	3,324.8	-14.9	5.2	-15.1	0.31	-0.28	-19.12	
3,350.0	0.27	177.12	3,349.8	-15.0	5.2	-15.2	0.25	-0.24	-13.76	
3,375.0	0.24	182.48	3,374.8	-15.2	5.2	-15.4	0.15	-0.12	21.44	
3,400.0	0.30	179.29	3,399.8	-15.3	5.2	-15.5	0.25	0.24	-12.76	
3,425.0	0.33	162.79	3,424.8	-15.4	5.2	-15.6	0.38	0.12	-66.00	
3,450.0	0.34	141.26	3,449.8	-15.5	5.3	-15.7	0.50	0.04	-86.12	
3,475.0	0.27	143.22	3,474.8	-15.6	5.3	-15.8	0.28	-0.28	7.84	
3,500.0	0.36	114.54	3,499.8	-15.7	5.5	-15.9	0.71	0.36	-114.72	
3,525.0	0.48	123.31	3,524.8	-15.8	5.6	-16.0	0.54	0.48	35.08	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	Database:	EDM_Users

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,550.0	0.53	126.60	3,549.8	-15.9	5.8	-16.2	0.23	0.20	13.16
3,575.0	0.74	133.74	3,574.8	-16.1	6.0	-16.3	0.90	0.84	28.56
3,600.0	0.85	129.01	3,599.8	-16.3	6.3	-16.6	0.51	0.44	-18.92
3,625.0	0.82	125.40	3,624.8	-16.6	6.6	-16.8	0.24	-0.12	-14.44
3,650.0	0.81	123.22	3,649.8	-16.8	6.8	-17.0	0.13	-0.04	-8.72
3,675.0	0.80	122.99	3,674.8	-17.0	7.1	-17.2	0.04	-0.04	-0.92
3,700.0	0.84	124.73	3,699.8	-17.2	7.4	-17.4	0.19	0.16	6.96
3,725.0	0.93	125.10	3,724.8	-17.4	7.8	-17.7	0.36	0.36	1.48
3,750.0	0.99	127.16	3,749.8	-17.6	8.1	-17.9	0.28	0.24	8.24
3,775.0	1.03	124.46	3,774.8	-17.9	8.5	-18.2	0.25	0.16	-10.80
3,800.0	1.10	127.37	3,799.8	-18.2	8.8	-18.5	0.35	0.28	11.64
3,825.0	1.13	126.54	3,824.8	-18.4	9.2	-18.8	0.14	0.12	-3.32
3,850.0	1.14	129.07	3,849.8	-18.8	9.6	-19.1	0.20	0.04	10.12
3,875.0	1.09	124.33	3,874.8	-19.0	10.0	-19.4	0.42	-0.20	-18.96
3,900.0	1.07	124.14	3,899.8	-19.3	10.4	-19.7	0.08	-0.08	-0.76
3,925.0	1.19	126.91	3,924.8	-19.6	10.8	-20.0	0.53	0.48	11.08
3,950.0	1.10	125.85	3,949.8	-19.9	11.2	-20.3	0.37	-0.36	-4.24
3,975.0	0.83	135.32	3,974.8	-20.2	11.5	-20.6	1.25	-1.08	37.88
4,000.0	0.71	143.17	3,999.8	-20.4	11.7	-20.9	0.64	-0.48	31.40
4,025.0	0.44	146.22	4,024.8	-20.6	11.9	-21.1	1.09	-1.08	12.20
4,050.0	0.67	154.11	4,049.8	-20.8	12.0	-21.3	0.97	0.92	31.56
4,075.0	0.74	151.97	4,074.8	-21.1	12.1	-21.6	0.30	0.28	-8.56
4,100.0	0.68	158.07	4,099.8	-21.4	12.3	-21.9	0.39	-0.24	24.40
4,125.0	0.67	151.94	4,124.8	-21.7	12.4	-22.1	0.29	-0.04	-24.52
4,150.0	0.71	157.57	4,149.8	-21.9	12.5	-22.4	0.31	0.16	22.52
4,175.0	0.65	155.74	4,174.7	-22.2	12.6	-22.7	0.26	-0.24	-7.32
4,200.0	0.69	168.17	4,199.7	-22.5	12.7	-23.0	0.60	0.16	49.72
4,225.0	0.74	170.33	4,224.7	-22.8	12.8	-23.3	0.23	0.20	8.64
4,250.0	0.73	165.61	4,249.7	-23.1	12.9	-23.6	0.25	-0.04	-18.88
4,275.0	0.72	168.09	4,274.7	-23.4	12.9	-23.9	0.13	-0.04	9.92
4,300.0	0.70	169.23	4,299.7	-23.7	13.0	-24.2	0.10	-0.08	4.56
4,325.0	0.70	171.68	4,324.7	-24.0	13.0	-24.5	0.12	0.00	9.80
4,350.0	0.70	169.28	4,349.7	-24.3	13.1	-24.8	0.12	0.00	-9.60
4,375.0	0.66	168.41	4,374.7	-24.6	13.1	-25.1	0.17	-0.16	-3.48
4,400.0	0.69	168.21	4,399.7	-24.9	13.2	-25.4	0.12	0.12	-0.80
4,425.0	1.03	171.08	4,424.7	-25.3	13.3	-25.8	1.37	1.36	11.48
4,450.0	0.73	175.68	4,449.7	-25.6	13.3	-26.2	1.23	-1.20	18.40
4,475.0	0.67	173.40	4,474.7	-25.9	13.3	-26.5	0.26	-0.24	-9.12
4,500.0	0.61	177.31	4,499.7	-26.2	13.4	-26.7	0.30	-0.24	15.64
4,525.0	0.50	194.04	4,524.7	-26.5	13.3	-27.0	0.78	-0.44	66.92
4,550.0	0.31	242.27	4,549.7	-26.6	13.3	-27.1	1.49	-0.76	192.92
4,575.0	0.30	262.34	4,574.7	-26.6	13.1	-27.1	0.43	-0.04	80.28
4,600.0	0.31	253.08	4,599.7	-26.7	13.0	-27.2	0.20	0.04	-37.04

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)	
4,625.0	0.25	262.06	4,624.7	-26.7	12.9	-27.2	0.30	-0.24	35.92	
4,650.0	0.27	253.23	4,649.7	-26.7	12.8	-27.2	0.18	0.08	-35.32	
4,675.0	0.24	163.27	4,674.7	-26.8	12.7	-27.3	1.44	-0.12	-359.84	
4,700.0	0.62	136.79	4,699.7	-26.9	12.8	-27.4	1.68	1.52	-105.92	
4,725.0	0.84	129.25	4,724.7	-27.1	13.1	-27.7	0.96	0.88	-30.16	
4,750.0	0.90	131.10	4,749.7	-27.4	13.4	-27.9	0.26	0.24	7.40	
4,775.0	0.92	130.40	4,774.7	-27.6	13.7	-28.2	0.09	0.08	-2.80	
4,800.0	0.88	131.54	4,799.7	-27.9	14.0	-28.4	0.18	-0.16	4.56	
4,825.0	0.88	132.37	4,824.7	-28.2	14.2	-28.7	0.05	0.00	3.32	
4,850.0	0.81	129.45	4,849.7	-28.4	14.5	-29.0	0.33	-0.28	-11.68	
4,875.0	0.75	129.05	4,874.7	-28.6	14.8	-29.2	0.24	-0.24	-1.60	
4,900.0	0.62	127.67	4,899.7	-28.8	15.0	-29.4	0.52	-0.52	-5.52	
4,925.0	0.66	128.44	4,924.7	-29.0	15.2	-29.6	0.16	0.16	3.08	
4,950.0	0.60	130.08	4,949.7	-29.2	15.5	-29.8	0.25	-0.24	6.56	
4,975.0	0.65	130.64	4,974.7	-29.3	15.7	-29.9	0.20	0.20	2.24	
5,000.0	0.69	124.81	4,999.7	-29.5	15.9	-30.1	0.32	0.16	-23.32	
5,025.0	0.93	123.55	5,024.7	-29.7	16.2	-30.3	0.96	0.96	-5.04	
5,050.0	1.24	116.96	5,049.7	-29.9	16.6	-30.6	1.33	1.24	-26.36	
5,075.0	1.56	115.88	5,074.7	-30.2	17.1	-30.9	1.28	1.28	-4.32	
5,100.0	1.78	116.59	5,099.7	-30.5	17.8	-31.2	0.88	0.88	2.84	
5,125.0	1.92	116.50	5,124.7	-30.9	18.5	-31.6	0.56	0.56	-0.36	
5,150.0	1.87	115.10	5,149.6	-31.3	19.3	-32.0	0.27	-0.20	-5.60	
5,175.0	1.99	115.06	5,174.6	-31.6	20.0	-32.4	0.48	0.48	-0.16	
5,200.0	1.89	114.41	5,199.6	-32.0	20.8	-32.8	0.41	-0.40	-2.60	
5,225.0	1.90	114.48	5,224.6	-32.3	21.6	-33.2	0.04	0.04	0.28	
5,250.0	1.99	116.34	5,249.6	-32.7	22.3	-33.5	0.44	0.36	7.44	
5,275.0	1.78	112.10	5,274.6	-33.0	23.1	-33.9	1.01	-0.84	-16.96	
5,300.0	1.10	107.44	5,299.6	-33.2	23.7	-34.2	2.76	-2.72	-18.64	
5,325.0	0.55	100.24	5,324.6	-33.3	24.0	-34.3	2.23	-2.20	-28.80	
5,350.0	0.21	67.42	5,349.6	-33.3	24.2	-34.3	1.56	-1.36	-131.28	
5,375.0	0.15	284.51	5,374.6	-33.3	24.2	-34.3	1.37	-0.24	-571.64	
5,400.0	0.59	265.12	5,399.6	-33.3	24.0	-34.2	1.81	1.76	-77.56	
5,425.0	0.76	258.40	5,424.6	-33.3	23.7	-34.3	0.75	0.68	-26.88	
5,450.0	0.76	259.50	5,449.6	-33.4	23.4	-34.3	0.06	0.00	4.40	
5,475.0	0.78	260.28	5,474.6	-33.5	23.1	-34.4	0.09	0.08	3.12	
5,500.0	0.74	261.50	5,499.5	-33.5	22.7	-34.4	0.17	-0.16	4.88	
5,525.0	0.78	259.86	5,524.5	-33.6	22.4	-34.5	0.18	0.16	-6.56	
5,550.0	0.83	263.39	5,549.5	-33.6	22.1	-34.5	0.28	0.20	14.12	
5,575.0	0.86	262.54	5,574.5	-33.7	21.7	-34.5	0.13	0.12	-3.40	
5,600.0	0.92	253.88	5,599.5	-33.8	21.3	-34.6	0.59	0.24	-34.64	
5,625.0	1.12	246.01	5,624.5	-33.9	20.9	-34.7	0.97	0.80	-31.48	
5,650.0	1.26	247.09	5,649.5	-34.1	20.4	-34.9	0.57	0.56	4.32	
5,675.0	1.38	247.22	5,674.5	-34.3	19.9	-35.1	0.48	0.48	0.52	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)
5,700.0	1.42	241.12	5,699.5	-34.6	19.3	-35.4	0.62	0.16	-24.40
5,725.0	1.45	241.28	5,724.5	-34.9	18.8	-35.6	0.12	0.12	0.64
5,750.0	1.52	242.64	5,749.5	-35.2	18.2	-35.9	0.31	0.28	5.44
5,775.0	1.80	239.15	5,774.5	-35.6	17.6	-36.2	1.19	1.12	-13.96
5,800.0	2.01	235.72	5,799.5	-36.0	16.9	-36.7	0.96	0.84	-13.72
5,825.0	2.09	235.16	5,824.5	-36.5	16.2	-37.1	0.33	0.32	-2.24
5,850.0	2.31	233.74	5,849.4	-37.1	15.4	-37.7	0.91	0.88	-5.68
5,875.0	2.56	231.46	5,874.4	-37.7	14.5	-38.3	1.07	1.00	-9.12
5,900.0	2.78	229.16	5,899.4	-38.5	13.6	-39.0	0.98	0.88	-9.20
5,925.0	2.88	228.67	5,924.4	-39.3	12.7	-39.8	0.41	0.40	-1.96
5,950.0	2.96	228.50	5,949.3	-40.1	11.8	-40.6	0.32	0.32	-0.68
5,975.0	3.07	228.50	5,974.3	-41.0	10.8	-41.4	0.44	0.44	0.00
6,000.0	3.30	227.73	5,999.3	-41.9	9.7	-42.3	0.94	0.92	-3.08
6,025.0	3.27	227.23	6,024.2	-42.9	8.7	-43.2	0.17	-0.12	-2.00
6,050.0	3.28	227.12	6,049.2	-43.9	7.6	-44.1	0.05	0.04	-0.44
6,075.0	3.39	229.34	6,074.1	-44.8	6.5	-45.1	0.68	0.44	8.88
6,100.0	3.37	227.14	6,099.1	-45.8	5.4	-46.0	0.52	-0.08	-8.80
6,125.0	3.42	228.53	6,124.0	-46.8	4.4	-46.9	0.39	0.20	5.56
6,150.0	3.63	229.93	6,149.0	-47.8	3.2	-47.9	0.91	0.84	5.60
6,175.0	3.80	229.60	6,173.9	-48.8	2.0	-48.9	0.69	0.68	-1.32
6,200.0	3.92	230.17	6,198.9	-49.9	0.7	-49.9	0.50	0.48	2.28
6,225.0	4.06	230.21	6,223.8	-51.0	-0.7	-51.0	0.56	0.56	0.16
6,250.0	4.39	231.62	6,248.8	-52.2	-2.1	-52.1	1.38	1.32	5.64
6,275.0	5.09	233.11	6,273.7	-53.5	-3.7	-53.3	2.84	2.80	5.96
6,300.0	5.33	233.72	6,298.6	-54.8	-5.6	-54.5	0.99	0.96	2.44
6,325.0	5.81	233.17	6,323.5	-56.3	-7.5	-55.9	1.93	1.92	-2.20
6,350.0	6.44	231.58	6,348.3	-57.9	-9.6	-57.5	2.61	2.52	-6.36
6,375.0	6.57	231.22	6,373.1	-59.7	-11.8	-59.1	0.54	0.52	-1.44
6,400.0	6.62	230.89	6,398.0	-61.5	-14.1	-60.8	0.25	0.20	-1.32
6,425.0	6.59	230.14	6,422.8	-63.3	-16.3	-62.6	0.37	-0.12	-3.00
6,450.0	6.59	229.33	6,447.6	-65.2	-18.5	-64.3	0.37	0.00	-3.24
6,475.0	6.44	228.43	6,472.5	-67.0	-20.6	-66.1	0.73	-0.60	-3.60
6,500.0	5.93	227.16	6,497.3	-68.8	-22.6	-67.8	2.11	-2.04	-5.08
6,525.0	5.62	227.02	6,522.2	-70.5	-24.5	-69.5	1.24	-1.24	-0.56
6,550.0	5.58	225.98	6,547.1	-72.2	-26.2	-71.1	0.44	-0.16	-4.16
6,575.0	5.58	225.63	6,572.0	-73.9	-28.0	-72.7	0.14	0.00	-1.40
6,600.0	5.56	225.41	6,596.9	-75.6	-29.7	-74.3	0.12	-0.08	-0.88
6,625.0	5.53	226.20	6,621.7	-77.3	-31.4	-76.0	0.33	-0.12	3.16
6,650.0	5.54	225.61	6,646.6	-79.0	-33.2	-77.6	0.23	0.04	-2.36
6,675.0	5.54	226.49	6,671.5	-80.6	-34.9	-79.2	0.34	0.00	3.52
6,700.0	5.56	226.94	6,696.4	-82.3	-36.7	-80.7	0.19	0.08	1.80
6,725.0	5.61	225.32	6,721.3	-84.0	-38.4	-82.4	0.66	0.20	-6.48
6,750.0	5.49	226.41	6,746.2	-85.7	-40.1	-84.0	0.64	-0.48	4.36
6,775.0	5.51	226.07	6,771.0	-87.3	-41.9	-85.6	0.15	0.08	-1.36

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)
6,800.0	5.36	226.76	6,795.9	-89.0	-43.6	-87.1	0.65	-0.60	2.76
6,825.0	5.37	228.36	6,820.8	-90.5	-45.3	-88.6	0.60	0.04	6.40
6,850.0	5.22	227.53	6,845.7	-92.1	-47.0	-90.1	0.67	-0.60	-3.32
6,875.0	5.05	227.44	6,870.6	-93.6	-48.7	-91.5	0.68	-0.68	-0.36
6,900.0	4.97	227.10	6,895.5	-95.1	-50.3	-93.0	0.34	-0.32	-1.36
6,925.0	4.87	227.49	6,920.4	-96.5	-51.9	-94.4	0.42	-0.40	1.56
6,950.0	4.96	228.13	6,945.3	-98.0	-53.4	-95.7	0.42	0.36	2.56
6,975.0	4.87	228.29	6,970.2	-99.4	-55.0	-97.1	0.36	-0.36	0.64
7,000.0	4.92	227.67	6,995.2	-100.8	-56.6	-98.4	0.29	0.20	-2.48
7,025.0	4.91	227.96	7,020.1	-102.3	-58.2	-99.8	0.11	-0.04	1.16
7,050.0	4.97	228.14	7,045.0	-103.7	-59.8	-101.2	0.25	0.24	0.72
7,075.0	4.97	227.91	7,069.9	-105.2	-61.4	-102.6	0.08	0.00	-0.92
7,100.0	5.10	228.87	7,094.8	-106.6	-63.1	-104.0	0.62	0.52	3.84
7,125.0	5.16	229.15	7,119.7	-108.1	-64.8	-105.4	0.26	0.24	1.12
7,150.0	5.20	229.43	7,144.6	-109.6	-66.5	-106.8	0.19	0.16	1.12
7,175.0	5.17	229.55	7,169.5	-111.0	-68.2	-108.2	0.13	-0.12	0.48
7,200.0	5.25	228.94	7,194.4	-112.5	-69.9	-109.6	0.39	0.32	-2.44
7,225.0	5.15	229.09	7,219.3	-114.0	-71.6	-111.0	0.40	-0.40	0.60
7,250.0	5.06	229.95	7,244.2	-115.4	-73.3	-112.4	0.47	-0.36	3.44
7,275.0	5.04	229.53	7,269.1	-116.9	-75.0	-113.7	0.17	-0.08	-1.68
7,300.0	4.84	228.77	7,294.0	-118.3	-76.6	-115.1	0.84	-0.80	-3.04
7,325.0	4.52	229.03	7,318.9	-119.6	-78.2	-116.3	1.28	-1.28	1.04
7,350.0	4.49	227.75	7,343.8	-120.9	-79.6	-117.6	0.42	-0.12	-5.12
7,375.0	4.31	227.41	7,368.7	-122.2	-81.0	-118.8	0.73	-0.72	-1.36
7,400.0	4.31	226.63	7,393.7	-123.5	-82.4	-120.0	0.23	0.00	-3.12
7,425.0	4.15	226.85	7,418.6	-124.7	-83.8	-121.2	0.64	-0.64	0.88
7,450.0	3.88	223.13	7,443.5	-126.0	-85.0	-122.4	1.50	-1.08	-14.88
7,475.0	3.68	221.60	7,468.5	-127.2	-86.1	-123.6	0.90	-0.80	-6.12
7,500.0	3.71	221.19	7,493.4	-128.4	-87.2	-124.8	0.16	0.12	-1.64
7,525.0	3.79	221.36	7,518.4	-129.6	-88.2	-125.9	0.32	0.32	0.68
7,550.0	3.79	220.47	7,543.3	-130.9	-89.3	-127.1	0.24	0.00	-3.56
7,575.0	3.83	221.82	7,568.3	-132.1	-90.4	-128.4	0.39	0.16	5.40
7,600.0	3.73	221.23	7,593.2	-133.4	-91.5	-129.5	0.43	-0.40	-2.36
7,625.0	3.78	221.64	7,618.2	-134.6	-92.6	-130.7	0.23	0.20	1.64
7,650.0	3.84	220.79	7,643.1	-135.8	-93.7	-131.9	0.33	0.24	-3.40
7,675.0	3.79	221.62	7,668.1	-137.1	-94.8	-133.1	0.30	-0.20	3.32
7,700.0	3.81	220.43	7,693.0	-138.3	-95.9	-134.3	0.33	0.08	-4.76
7,725.0	3.81	221.04	7,717.9	-139.6	-97.0	-135.6	0.16	0.00	2.44
7,750.0	3.80	220.84	7,742.9	-140.9	-98.0	-136.8	0.07	-0.04	-0.80
7,775.0	3.88	220.46	7,767.8	-142.1	-99.1	-138.0	0.34	0.32	-1.52
7,800.0	3.88	221.04	7,792.8	-143.4	-100.2	-139.2	0.16	0.00	2.32
7,825.0	3.88	220.17	7,817.7	-144.7	-101.3	-140.5	0.24	0.00	-3.48
7,850.0	3.88	220.85	7,842.7	-146.0	-102.4	-141.7	0.18	0.00	2.72

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)	
7,875.0	3.90	221.24	7,867.6	-147.3	-103.6	-142.9	0.13	0.08	1.56	
7,900.0	3.97	221.61	7,892.5	-148.5	-104.7	-144.2	0.30	0.28	1.48	
7,925.0	3.85	221.12	7,917.5	-149.8	-105.8	-145.4	0.50	-0.48	-1.96	
7,950.0	3.83	221.71	7,942.4	-151.1	-106.9	-146.6	0.18	-0.08	2.36	
7,975.0	3.79	222.56	7,967.4	-152.3	-108.0	-147.8	0.28	-0.16	3.40	
8,000.0	3.94	222.99	7,992.3	-153.5	-109.2	-149.0	0.61	0.60	1.72	
8,025.0	4.04	224.00	8,017.3	-154.8	-110.4	-150.2	0.49	0.40	4.04	
8,050.0	4.49	232.25	8,042.2	-156.0	-111.8	-151.4	3.04	1.80	33.00	
8,075.0	4.87	236.26	8,067.1	-157.2	-113.4	-152.5	2.00	1.52	16.04	
8,100.0	5.02	237.44	8,092.0	-158.4	-115.2	-153.6	0.72	0.60	4.72	
8,125.0	5.09	238.04	8,116.9	-159.6	-117.1	-154.7	0.35	0.28	2.40	
8,150.0	5.13	237.34	8,141.8	-160.8	-119.0	-155.8	0.30	0.16	-2.80	
8,175.0	5.07	237.08	8,166.7	-162.0	-120.8	-156.9	0.26	-0.24	-1.04	
8,200.0	4.76	235.67	8,191.6	-163.2	-122.6	-158.1	1.33	-1.24	-5.64	
8,225.0	4.72	235.55	8,216.5	-164.3	-124.3	-159.1	0.16	-0.16	-0.48	
8,250.0	4.77	235.35	8,241.5	-165.5	-126.0	-160.3	0.21	0.20	-0.80	
8,275.0	4.69	235.35	8,266.4	-166.7	-127.7	-161.4	0.32	-0.32	0.00	
8,300.0	4.72	234.99	8,291.3	-167.8	-129.4	-162.5	0.17	0.12	-1.44	
8,325.0	4.90	234.77	8,316.2	-169.1	-131.1	-163.6	0.72	0.72	-0.88	
8,350.0	4.94	234.80	8,341.1	-170.3	-132.9	-164.8	0.16	0.16	0.12	
8,375.0	5.01	234.51	8,366.0	-171.5	-134.6	-165.9	0.30	0.28	-1.16	
8,400.0	5.06	234.96	8,390.9	-172.8	-136.4	-167.1	0.25	0.20	1.80	
8,425.0	5.00	235.41	8,415.8	-174.1	-138.2	-168.3	0.29	-0.24	1.80	
8,450.0	5.02	235.74	8,440.7	-175.3	-140.0	-169.5	0.14	0.08	1.32	
8,475.0	5.10	235.76	8,465.6	-176.5	-141.9	-170.6	0.32	0.32	0.08	
8,500.0	5.06	235.88	8,490.5	-177.8	-143.7	-171.8	0.17	-0.16	0.48	
8,525.0	5.21	234.95	8,515.4	-179.1	-145.5	-173.0	0.69	0.60	-3.72	
8,550.0	5.06	235.05	8,540.3	-180.3	-147.4	-174.2	0.60	-0.60	0.40	
8,575.0	5.02	235.29	8,565.2	-181.6	-149.2	-175.4	0.18	-0.16	0.96	
8,600.0	4.85	235.05	8,590.1	-182.8	-150.9	-176.5	0.68	-0.68	-0.96	
8,625.0	4.92	234.69	8,615.0	-184.0	-152.7	-177.7	0.31	0.28	-1.44	
8,650.0	4.71	234.53	8,640.0	-185.3	-154.4	-178.8	0.84	-0.84	-0.64	
8,675.0	4.61	233.82	8,664.9	-186.4	-156.0	-180.0	0.46	-0.40	-2.84	
8,700.0	4.55	234.13	8,689.8	-187.6	-157.6	-181.1	0.26	-0.24	1.24	
8,725.0	4.62	233.92	8,714.7	-188.8	-159.3	-182.2	0.29	0.28	-0.84	
8,750.0	4.63	234.07	8,739.6	-190.0	-160.9	-183.3	0.06	0.04	0.60	
8,775.0	4.66	233.73	8,764.5	-191.2	-162.5	-184.4	0.16	0.12	-1.36	
8,800.0	4.72	234.50	8,789.5	-192.4	-164.2	-185.5	0.35	0.24	3.08	
8,825.0	4.93	236.24	8,814.4	-193.6	-165.9	-186.7	1.02	0.84	6.96	
8,850.0	5.07	236.40	8,839.3	-194.8	-167.7	-187.8	0.56	0.56	0.64	
8,875.0	5.02	236.22	8,864.2	-196.0	-169.6	-188.9	0.21	-0.20	-0.72	
8,900.0	5.04	236.40	8,889.1	-197.2	-171.4	-190.1	0.10	0.08	0.72	
8,925.0	4.95	235.81	8,914.0	-198.4	-173.2	-191.2	0.41	-0.36	-2.36	

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	Database:	EDM_Users

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)
8,950.0	4.70	236.13	8,938.9	-199.6	-174.9	-192.3	1.01	-1.00	1.28
8,975.0	4.58	235.40	8,963.8	-200.7	-176.6	-193.4	0.53	-0.48	-2.92
9,000.0	4.44	235.58	8,988.7	-201.9	-178.2	-194.4	0.56	-0.56	0.72
9,025.0	4.45	235.22	9,013.7	-203.0	-179.8	-195.5	0.12	0.04	-1.44
9,050.0	4.43	236.04	9,038.6	-204.0	-181.4	-196.5	0.27	-0.08	3.28
9,075.0	4.66	235.13	9,063.5	-205.2	-183.1	-197.6	0.96	0.92	-3.64
9,100.0	5.24	233.60	9,088.4	-206.4	-184.8	-198.7	2.38	2.32	-6.12
9,125.0	5.60	233.74	9,113.3	-207.8	-186.7	-200.1	1.44	1.44	0.56
9,150.0	5.74	233.39	9,138.2	-209.3	-188.7	-201.5	0.58	0.56	-1.40
9,175.0	5.71	233.59	9,163.1	-210.8	-190.7	-202.9	0.14	-0.12	0.80
9,200.0	5.69	232.52	9,187.9	-212.3	-192.7	-204.3	0.43	-0.08	-4.28
9,225.0	5.54	233.27	9,212.8	-213.7	-194.6	-205.7	0.67	-0.60	3.00
9,250.0	5.32	232.69	9,237.7	-215.2	-196.5	-207.0	0.91	-0.88	-2.32
9,275.0	5.18	232.74	9,262.6	-216.5	-198.3	-208.3	0.56	-0.56	0.20
9,300.0	5.01	231.67	9,287.5	-217.9	-200.1	-209.6	0.78	-0.68	-4.28
9,325.0	4.97	232.31	9,312.4	-219.2	-201.8	-210.9	0.27	-0.16	2.56
9,350.0	4.91	231.58	9,337.3	-220.6	-203.5	-212.1	0.35	-0.24	-2.92
9,375.0	4.85	232.24	9,362.2	-221.9	-205.2	-213.4	0.33	-0.24	2.64
9,400.0	4.69	230.70	9,387.1	-223.2	-206.8	-214.6	0.82	-0.64	-6.16
9,425.0	4.66	231.51	9,412.1	-224.5	-208.4	-215.8	0.29	-0.12	3.24
9,450.0	4.63	230.58	9,437.0	-225.7	-210.0	-217.0	0.32	-0.12	-3.72
9,475.0	4.54	231.08	9,461.9	-227.0	-211.5	-218.2	0.39	-0.36	2.00
9,500.0	4.38	230.36	9,486.8	-228.2	-213.0	-219.4	0.68	-0.64	-2.88
9,525.0	4.24	231.70	9,511.7	-229.4	-214.5	-220.5	0.69	-0.56	5.36
9,550.0	4.34	231.50	9,536.7	-230.6	-215.9	-221.6	0.40	0.40	-0.80
9,575.0	4.35	231.63	9,561.6	-231.7	-217.4	-222.7	0.06	0.04	0.52
9,600.0	4.38	229.76	9,586.5	-233.0	-218.9	-223.9	0.58	0.12	-7.48
9,625.0	4.27	230.43	9,611.5	-234.2	-220.3	-225.0	0.48	-0.44	2.68
9,650.0	4.27	230.58	9,636.4	-235.3	-221.8	-226.1	0.04	0.00	0.60
9,675.0	4.30	230.51	9,661.3	-236.5	-223.2	-227.3	0.12	0.12	-0.28
9,700.0	4.27	231.29	9,686.3	-237.7	-224.7	-228.4	0.26	-0.12	3.12
9,725.0	4.18	230.95	9,711.2	-238.9	-226.1	-229.5	0.37	-0.36	-1.36
9,750.0	4.13	231.28	9,736.1	-240.0	-227.5	-230.6	0.22	-0.20	1.32
9,775.0	4.06	231.27	9,761.1	-241.1	-228.9	-231.6	0.28	-0.28	-0.04
9,800.0	4.06	230.33	9,786.0	-242.2	-230.3	-232.7	0.27	0.00	-3.76
9,825.0	4.00	230.71	9,810.9	-243.4	-231.6	-233.8	0.26	-0.24	1.52
9,850.0	3.78	230.12	9,835.9	-244.4	-232.9	-234.8	0.89	-0.88	-2.36
9,875.0	3.68	229.65	9,860.8	-245.5	-234.2	-235.8	0.42	-0.40	-1.88
9,900.0	3.63	228.72	9,885.8	-246.5	-235.4	-236.8	0.31	-0.20	-3.72
9,925.0	3.57	228.23	9,910.7	-247.6	-236.6	-237.8	0.27	-0.24	-1.96
9,950.0	3.47	228.44	9,935.7	-248.6	-237.7	-238.7	0.40	-0.40	0.84
9,975.0	3.42	227.98	9,960.6	-249.6	-238.8	-239.7	0.23	-0.20	-1.84
10,000.0	3.36	228.57	9,985.6	-250.6	-239.9	-240.6	0.28	-0.24	2.36
10,025.0	3.38	228.69	10,010.5	-251.5	-241.0	-241.6	0.08	0.08	0.48

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)
10,050.0	3.44	227.93	10,035.5	-252.5	-242.2	-242.5	0.30	0.24	-3.04
10,075.0	3.37	228.24	10,060.5	-253.5	-243.3	-243.4	0.29	-0.28	1.24
10,100.0	3.36	227.55	10,085.4	-254.5	-244.3	-244.4	0.17	-0.04	-2.76
10,125.0	3.26	227.22	10,110.4	-255.5	-245.4	-245.3	0.41	-0.40	-1.32
10,150.0	3.20	227.78	10,135.3	-256.4	-246.4	-246.2	0.27	-0.24	2.24
10,175.0	3.13	227.60	10,160.3	-257.4	-247.5	-247.1	0.28	-0.28	-0.72
10,200.0	3.10	227.37	10,185.3	-258.3	-248.5	-248.0	0.13	-0.12	-0.92
10,225.0	3.04	226.58	10,210.2	-259.2	-249.4	-248.9	0.29	-0.24	-3.16
10,250.0	3.07	226.59	10,235.2	-260.1	-250.4	-249.7	0.12	0.12	0.04
10,275.0	3.06	225.46	10,260.1	-261.0	-251.4	-250.6	0.24	-0.04	-4.52
10,300.0	3.07	226.43	10,285.1	-262.0	-252.3	-251.5	0.21	0.04	3.88
10,325.0	3.01	224.70	10,310.1	-262.9	-253.3	-252.4	0.44	-0.24	-6.92
10,350.0	2.96	225.10	10,335.0	-263.8	-254.2	-253.3	0.22	-0.20	1.60
10,375.0	3.01	224.81	10,360.0	-264.7	-255.1	-254.2	0.21	0.20	-1.16
10,400.0	3.03	225.03	10,385.0	-265.7	-256.1	-255.1	0.09	0.08	0.88
10,425.0	3.09	224.56	10,409.9	-266.6	-257.0	-256.0	0.26	0.24	-1.88
10,450.0	2.96	223.93	10,434.9	-267.6	-257.9	-256.9	0.54	-0.52	-2.52
10,475.0	3.00	223.49	10,459.9	-268.5	-258.8	-257.8	0.18	0.16	-1.76
10,500.0	3.06	223.02	10,484.8	-269.5	-259.7	-258.7	0.26	0.24	-1.88
10,525.0	3.00	222.99	10,509.8	-270.4	-260.6	-259.6	0.24	-0.24	-0.12
10,550.0	3.02	222.50	10,534.8	-271.4	-261.5	-260.6	0.13	0.08	-1.96
10,575.0	2.98	223.21	10,559.7	-272.4	-262.4	-261.5	0.22	-0.16	2.84
10,600.0	3.07	219.23	10,584.7	-273.4	-263.3	-262.4	0.91	0.36	-15.92
10,625.0	3.08	219.64	10,609.7	-274.4	-264.1	-263.4	0.10	0.04	1.64
10,650.0	3.03	219.28	10,634.6	-275.4	-265.0	-264.4	0.21	-0.20	-1.44
10,675.0	3.03	218.62	10,659.6	-276.4	-265.8	-265.4	0.14	0.00	-2.64
10,700.0	3.00	217.26	10,684.6	-277.5	-266.6	-266.4	0.31	-0.12	-5.44
10,725.0	2.94	215.93	10,709.5	-278.5	-267.4	-267.4	0.37	-0.24	-5.32
10,750.0	2.89	215.57	10,734.5	-279.6	-268.1	-268.4	0.21	-0.20	-1.44
10,775.0	2.80	216.29	10,759.5	-280.6	-268.9	-269.4	0.39	-0.36	2.88
10,800.0	2.57	212.68	10,784.4	-281.5	-269.5	-270.3	1.14	-0.92	-14.44
10,825.0	2.46	210.11	10,809.4	-282.5	-270.1	-271.3	0.63	-0.44	-10.28
10,850.0	2.41	211.05	10,834.4	-283.4	-270.6	-272.2	0.26	-0.20	3.76
10,875.0	1.75	211.08	10,859.4	-284.1	-271.1	-272.9	2.64	-2.64	0.12
10,900.0	0.90	205.96	10,884.4	-284.7	-271.4	-273.4	3.43	-3.40	-20.48
10,925.0	0.61	199.31	10,909.4	-285.0	-271.5	-273.7	1.21	-1.16	-26.60
10,950.0	0.57	188.21	10,934.4	-285.2	-271.6	-273.9	0.48	-0.16	-44.40
10,975.0	0.58	196.96	10,959.4	-285.4	-271.6	-274.2	0.35	0.04	35.00
11,000.0	0.63	188.91	10,984.4	-285.7	-271.7	-274.4	0.39	0.20	-32.20
11,025.0	0.53	204.22	11,009.4	-285.9	-271.8	-274.7	0.73	-0.40	61.24
11,050.0	0.71	197.65	11,034.4	-286.2	-271.8	-274.9	0.77	-0.72	-26.28
11,075.0	0.67	194.46	11,059.3	-286.5	-271.9	-275.2	0.22	-0.16	-12.76
11,100.0	0.55	196.71	11,084.3	-286.7	-272.0	-275.5	0.49	-0.48	9.00

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	Database:	EDM_Users

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,125.0	0.66	205.85	11,109.3	-287.0	-272.1	-275.7	0.58	0.44	36.56
11,150.0	0.56	190.18	11,134.3	-287.2	-272.2	-276.0	0.77	-0.40	-62.68
11,175.0	0.40	200.17	11,159.3	-287.4	-272.2	-276.2	0.72	-0.64	39.96
11,200.0	0.38	180.37	11,184.3	-287.6	-272.3	-276.3	0.54	-0.08	-79.20
11,225.0	0.36	178.36	11,209.3	-287.8	-272.3	-276.5	0.10	-0.08	-8.04
11,250.0	0.16	194.92	11,234.3	-287.9	-272.3	-276.6	0.85	-0.80	66.24
11,275.0	0.26	192.58	11,259.3	-288.0	-272.3	-276.7	0.40	0.40	-9.36
11,300.0	0.38	175.75	11,284.3	-288.1	-272.3	-276.8	0.60	0.48	-67.32
11,325.0	0.36	167.71	11,309.3	-288.3	-272.3	-277.0	0.22	-0.08	-32.16
11,350.0	0.20	195.58	11,334.3	-288.4	-272.3	-277.1	0.82	-0.64	111.48
11,375.0	0.45	178.04	11,359.3	-288.5	-272.3	-277.2	1.06	1.00	-70.16
11,400.0	0.36	161.58	11,384.3	-288.7	-272.2	-277.4	0.58	-0.36	-65.84
11,425.0	0.40	161.74	11,409.3	-288.9	-272.2	-277.6	0.16	0.16	0.64
11,450.0	0.54	144.25	11,434.3	-289.0	-272.1	-277.7	0.80	0.56	-69.96
11,475.0	0.69	149.76	11,459.3	-289.3	-272.0	-278.0	0.64	0.60	22.04
11,500.0	0.81	139.96	11,484.3	-289.5	-271.8	-278.3	0.70	0.48	-39.20
11,525.0	1.19	141.37	11,509.3	-289.9	-271.5	-278.6	1.52	1.52	5.64
11,550.0	1.22	141.94	11,534.3	-290.3	-271.2	-279.0	0.13	0.12	2.28
11,575.0	1.28	139.18	11,559.3	-290.7	-270.8	-279.5	0.34	0.24	-11.04
11,600.0	1.31	143.19	11,584.3	-291.1	-270.5	-279.9	0.38	0.12	16.04
11,625.0	1.36	138.62	11,609.3	-291.6	-270.1	-280.4	0.47	0.20	-18.28
11,650.0	1.27	141.20	11,634.3	-292.0	-269.7	-280.8	0.43	-0.36	10.32
11,675.0	1.28	140.58	11,659.3	-292.5	-269.4	-281.3	0.07	0.04	-2.48
11,700.0	1.24	139.92	11,684.3	-292.9	-269.0	-281.7	0.17	-0.16	-2.64
11,725.0	1.14	142.92	11,709.3	-293.3	-268.7	-282.1	0.47	-0.40	12.00
11,750.0	0.95	136.79	11,734.3	-293.6	-268.4	-282.5	0.88	-0.76	-24.52
11,775.0	0.96	139.83	11,759.3	-293.9	-268.1	-282.8	0.21	0.04	12.16
11,800.0	1.00	128.51	11,784.3	-294.2	-267.8	-283.1	0.79	0.16	-45.28
11,825.0	0.99	128.33	11,809.3	-294.5	-267.5	-283.4	0.04	-0.04	-0.72
11,850.0	0.95	122.14	11,834.3	-294.8	-267.1	-283.7	0.45	-0.16	-24.76
11,875.0	1.03	123.84	11,859.3	-295.0	-266.8	-283.9	0.34	0.32	6.80
11,900.0	1.05	118.77	11,884.3	-295.2	-266.4	-284.2	0.38	0.08	-20.28
11,925.0	1.02	121.87	11,909.3	-295.5	-266.0	-284.4	0.25	-0.12	12.40
11,950.0	1.27	119.33	11,934.2	-295.7	-265.6	-284.7	1.02	1.00	-10.16
11,975.0	1.36	123.37	11,959.2	-296.0	-265.1	-285.0	0.52	0.36	16.16
12,000.0	1.28	117.28	11,984.2	-296.3	-264.6	-285.3	0.65	-0.32	-24.36
12,025.0	1.41	113.24	12,009.2	-296.5	-264.1	-285.6	0.64	0.52	-16.16
12,048.0	1.44	120.51	12,032.2	-296.8	-263.5	-285.9	0.80	0.13	31.61
12,183.0	1.11	134.89	12,167.2	-298.6	-261.2	-287.7	0.34	-0.24	10.65
12,263.0	1.55	30.19	12,247.2	-298.2	-260.1	-287.4	2.65	0.55	-130.88
12,294.0	3.24	42.58	12,278.1	-297.2	-259.3	-286.4	5.67	5.45	39.97
12,326.0	4.38	37.64	12,310.1	-295.6	-257.9	-284.8	3.70	3.56	-15.44
12,357.0	4.86	27.77	12,341.0	-293.5	-256.6	-282.8	2.99	1.55	-31.84

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	Database:	EDM_Users

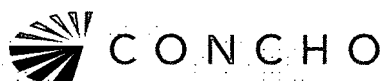
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,389.0	6.03	12.21	12,372.8	-290.6	-255.6	-280.0	5.86	3.66	-48.63
12,420.0	8.71	2.58	12,403.6	-286.7	-255.1	-276.1	9.49	8.65	-31.06
12,452.0	11.84	358.10	12,435.1	-281.0	-255.1	-270.4	10.09	9.78	-14.00
12,483.0	15.32	354.56	12,465.2	-273.7	-255.6	-263.1	11.54	11.23	-11.42
12,514.0	18.85	352.87	12,494.8	-264.7	-256.6	-254.0	11.50	11.39	-5.45
12,546.0	22.11	352.53	12,524.8	-253.6	-258.1	-242.9	10.19	10.19	-1.06
12,577.0	26.39	352.32	12,553.0	-241.0	-259.7	-230.2	13.81	13.81	-0.68
12,609.0	29.74	349.34	12,581.3	-226.1	-262.2	-215.3	11.35	10.47	-9.31
12,640.0	32.85	347.48	12,607.8	-210.3	-265.4	-199.4	10.50	10.03	-6.00
12,671.0	36.37	350.83	12,633.3	-193.0	-268.7	-182.0	12.90	11.35	10.81
12,703.0	37.53	356.08	12,658.9	-173.9	-270.9	-162.8	10.50	3.63	16.41
12,734.0	42.30	0.36	12,682.6	-154.1	-271.5	-142.9	17.75	15.39	13.81
12,766.0	44.51	0.74	12,705.9	-132.1	-271.2	-121.0	6.95	6.91	1.19
12,797.0	45.88	0.12	12,727.7	-110.1	-271.1	-99.0	4.64	4.42	-2.00
12,829.0	48.10	0.50	12,749.6	-86.7	-271.0	-75.6	6.99	6.94	1.19
12,860.0	51.97	358.27	12,769.5	-62.9	-271.2	-51.9	13.65	12.48	-7.19
12,891.0	54.12	356.15	12,788.1	-38.2	-272.4	-27.1	8.83	6.94	-6.84
12,923.0	57.32	355.74	12,806.1	-11.8	-274.3	-0.7	10.06	10.00	-1.28
12,954.0	62.20	353.93	12,821.7	14.8	-276.7	26.0	16.53	15.74	-5.84
12,986.0	68.63	353.35	12,835.0	43.7	-279.9	55.1	20.16	20.09	-1.81
13,017.0	72.72	351.88	12,845.3	72.7	-283.7	84.2	13.93	13.19	-4.74
13,049.0	75.91	350.95	12,853.9	103.2	-288.3	114.8	10.35	9.97	-2.91
13,080.0	76.81	350.34	12,861.3	132.9	-293.2	144.7	3.48	2.90	-1.97
13,111.0	77.27	349.56	12,868.2	162.7	-298.5	174.6	2.87	1.48	-2.52
13,143.0	77.27	349.04	12,875.3	193.3	-304.3	205.5	1.59	0.00	-1.63
13,174.0	78.25	348.65	12,881.8	223.1	-310.1	235.5	3.39	3.16	-1.26
13,206.0	79.38	348.68	12,888.0	253.8	-316.3	266.5	3.53	3.53	0.09
13,237.0	81.82	347.69	12,893.1	283.8	-322.6	296.6	8.48	7.87	-3.19
13,269.0	86.86	348.47	12,896.3	314.9	-329.1	328.0	15.94	15.75	2.44
13,300.0	93.75	350.62	12,896.1	345.4	-334.8	358.7	23.28	22.23	6.94
13,340.0	95.50	351.50	12,892.9	384.8	-341.0	398.3	4.89	4.38	2.20
13,371.0	95.63	352.30	12,889.9	415.3	-345.3	429.0	2.60	0.42	2.58
13,403.0	95.97	352.39	12,886.6	446.9	-349.5	460.7	1.10	1.06	0.28
13,434.0	95.86	353.51	12,883.4	477.5	-353.3	491.4	3.61	-0.35	3.61
13,466.0	95.02	355.45	12,880.4	509.2	-356.4	523.2	6.58	-2.63	6.06
13,497.0	93.39	356.38	12,878.1	540.0	-358.6	554.1	6.05	-5.26	3.00
13,529.0	93.05	356.12	12,876.3	571.9	-360.7	586.1	1.34	-1.06	-0.81
13,560.0	92.18	355.82	12,874.9	602.8	-362.9	617.0	2.97	-2.81	-0.97
13,591.0	91.09	355.87	12,874.0	633.7	-365.1	648.0	3.52	-3.52	0.16
13,623.0	90.64	355.97	12,873.5	665.6	-367.4	680.0	1.44	-1.41	0.31
13,654.0	90.17	356.35	12,873.3	696.5	-369.5	711.0	1.95	-1.52	1.23
13,685.0	89.92	357.22	12,873.3	727.5	-371.2	741.9	2.92	-0.81	2.81
13,717.0	90.73	357.85	12,873.1	759.4	-372.6	773.9	3.21	2.53	1.97
13,748.0	91.15	358.82	12,872.6	790.4	-373.5	804.9	3.41	1.35	3.13

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)
13,780.0	91.71	358.86	12,871.8	822.4	-374.1	836.9	1.75	1.75	0.13
13,811.0	92.61	358.81	12,870.6	853.4	-374.8	867.9	2.91	2.90	-0.16
13,843.0	93.61	0.61	12,868.9	885.3	-374.9	899.8	6.43	3.13	5.63
13,874.0	92.91	1.86	12,867.1	916.3	-374.3	930.7	4.62	-2.26	4.03
13,906.0	92.47	2.41	12,865.6	948.2	-373.1	962.6	2.20	-1.38	1.72
13,937.0	91.60	3.66	12,864.5	979.2	-371.4	993.4	4.91	-2.81	4.03
13,968.0	91.20	4.67	12,863.8	1,010.1	-369.2	1,024.2	3.50	-1.29	3.26
14,000.0	90.78	5.42	12,863.2	1,041.9	-366.4	1,056.0	2.69	-1.31	2.34
14,031.0	91.57	6.10	12,862.6	1,072.8	-363.2	1,086.6	3.36	2.55	2.19
14,094.0	92.41	7.02	12,860.4	1,135.3	-356.1	1,148.8	1.98	1.33	1.46
14,126.0	90.92	7.43	12,859.5	1,167.1	-352.0	1,180.4	4.83	-4.66	1.28
14,157.0	89.92	6.92	12,859.2	1,197.8	-348.2	1,211.0	3.62	-3.23	-1.65
14,188.0	88.54	6.91	12,859.7	1,228.6	-344.4	1,241.5	4.45	-4.45	-0.03
14,220.0	87.28	7.05	12,860.8	1,260.3	-340.5	1,273.1	3.96	-3.94	0.44
14,251.0	87.31	6.94	12,862.3	1,291.1	-336.8	1,303.7	0.37	0.10	-0.35
14,283.0	87.34	6.77	12,863.8	1,322.8	-333.0	1,335.2	0.54	0.09	-0.53
14,314.0	87.84	7.29	12,865.1	1,353.5	-329.2	1,365.8	2.33	1.61	1.68
14,377.0	88.99	7.32	12,866.8	1,416.0	-321.2	1,427.9	1.83	1.83	0.05
14,471.0	89.69	5.69	12,867.9	1,509.4	-310.5	1,520.7	1.89	0.74	-1.73
14,565.0	87.84	3.71	12,869.9	1,603.0	-302.8	1,614.0	2.88	-1.97	-2.11
14,659.0	86.55	3.42	12,874.5	1,696.7	-297.0	1,707.4	1.41	-1.37	-0.31
14,753.0	86.22	0.66	12,880.5	1,790.5	-293.6	1,800.9	2.95	-0.35	-2.94
14,847.0	88.88	359.05	12,884.5	1,884.4	-293.9	1,894.8	3.31	2.83	-1.71
14,950.0	94.31	357.12	12,881.6	1,987.2	-297.3	1,997.7	5.59	5.27	-1.87
15,044.0	92.97	356.86	12,875.7	2,080.9	-302.2	2,091.5	1.45	-1.43	-0.28
15,139.0	90.58	353.63	12,872.7	2,175.5	-310.1	2,186.3	4.23	-2.52	-3.40
15,233.0	88.30	355.16	12,873.6	2,269.1	-319.3	2,280.2	2.92	-2.43	1.63
15,327.0	88.14	356.34	12,876.6	2,362.8	-326.2	2,374.1	1.27	-0.17	1.26
15,422.0	87.47	354.46	12,880.2	2,457.4	-333.9	2,468.9	2.10	-0.71	-1.98
15,516.0	87.47	355.62	12,884.3	2,550.9	-342.0	2,562.7	1.23	0.00	1.23
15,610.0	87.84	358.35	12,888.2	2,644.7	-346.9	2,656.6	2.93	0.39	2.90
15,704.0	88.28	358.82	12,891.4	2,738.6	-349.2	2,750.6	0.68	0.47	0.50
15,798.0	88.04	359.06	12,894.4	2,832.6	-351.0	2,844.5	0.36	-0.26	0.26
15,893.0	88.14	359.19	12,897.6	2,927.5	-352.4	2,939.4	0.17	0.11	0.14
15,987.0	89.84	359.77	12,899.2	3,021.5	-353.3	3,033.3	1.91	1.81	0.62
16,081.0	91.33	1.25	12,898.3	3,115.5	-352.4	3,127.2	2.23	1.59	1.57
16,176.0	91.61	2.18	12,895.8	3,210.4	-349.6	3,221.9	1.02	0.29	0.98
16,270.0	91.84	2.65	12,893.0	3,304.3	-345.6	3,315.6	0.56	0.24	0.50
16,364.0	91.24	1.71	12,890.5	3,398.2	-342.1	3,409.3	1.19	-0.64	-1.00
16,459.0	90.87	1.65	12,888.7	3,493.1	-339.3	3,504.0	0.39	-0.39	-0.06
16,553.0	91.44	2.50	12,886.8	3,587.0	-335.9	3,597.7	1.09	0.61	0.90
16,647.0	91.01	1.94	12,884.8	3,680.9	-332.2	3,691.4	0.75	-0.46	-0.60
16,741.0	92.38	1.61	12,882.0	3,774.8	-329.3	3,785.1	1.50	1.46	-0.35

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)
16,836.0	92.29	2.34	12,878.2	3,869.7	-326.1	3,879.8	0.77	-0.09	0.77
16,930.0	92.58	2.61	12,874.2	3,963.5	-322.0	3,973.3	0.42	0.31	0.29
17,024.0	90.62	0.97	12,871.5	4,057.4	-319.1	4,067.1	2.72	-2.09	-1.74
17,118.0	91.05	0.07	12,870.2	4,151.4	-318.2	4,160.9	1.06	0.46	-0.96
17,137.0	88.99	1.09	12,870.2	4,170.4	-318.0	4,179.9	12.10	-10.84	5.37
17,168.0	86.45	4.04	12,871.4	4,201.4	-316.6	4,210.8	12.55	-8.19	9.52
17,199.0	86.18	6.68	12,873.4	4,232.2	-313.7	4,241.4	8.54	-0.87	8.52
17,234.0	87.62	8.12	12,875.3	4,266.8	-309.2	4,275.9	5.81	4.11	4.11
17,266.0	87.76	7.89	12,876.6	4,298.5	-304.8	4,307.3	0.84	0.44	-0.72
17,297.0	87.63	7.62	12,877.8	4,329.2	-300.6	4,337.8	0.97	-0.42	-0.87
17,329.0	89.48	6.97	12,878.6	4,360.9	-296.6	4,369.3	6.13	5.78	-2.03
17,360.0	89.93	5.90	12,878.8	4,391.7	-293.1	4,400.0	3.74	1.45	-3.45
17,391.0	90.12	3.92	12,878.8	4,422.6	-290.4	4,430.7	6.42	0.61	-6.39
17,423.0	90.45	2.90	12,878.6	4,454.5	-288.5	4,462.6	3.35	1.03	-3.19
17,454.0	91.24	2.17	12,878.2	4,485.5	-287.1	4,493.5	3.47	2.55	-2.35
17,486.0	92.38	1.27	12,877.1	4,517.5	-286.2	4,525.4	4.54	3.56	-2.81
17,517.0	93.20	0.41	12,875.6	4,548.4	-285.7	4,556.3	3.83	2.65	-2.77
17,549.0	93.61	0.25	12,873.7	4,580.4	-285.6	4,588.2	1.38	1.28	-0.50
17,580.0	94.08	0.49	12,871.7	4,611.3	-285.4	4,619.1	1.70	1.52	0.77
17,612.0	94.59	359.74	12,869.2	4,643.2	-285.3	4,651.0	2.83	1.59	-2.34
17,643.0	94.99	358.12	12,866.6	4,674.1	-285.9	4,681.8	5.37	1.29	-5.23
17,674.0	95.08	358.46	12,863.9	4,705.0	-286.8	4,712.7	1.13	0.29	1.10
17,706.0	95.73	358.33	12,860.9	4,736.8	-287.7	4,744.6	2.07	2.03	-0.41
17,737.0	95.86	358.57	12,857.8	4,767.6	-288.5	4,775.4	0.88	0.42	0.77
17,769.0	95.78	359.10	12,854.5	4,799.5	-289.2	4,807.2	1.67	-0.25	1.66
17,779.0	95.76	358.23	12,853.5	4,809.4	-289.4	4,817.2	8.66	-0.20	-8.70
17,873.0	95.42	359.40	12,844.4	4,902.9	-291.3	4,910.7	1.29	-0.36	1.24
17,967.0	95.59	0.20	12,835.4	4,996.5	-291.7	5,004.2	0.87	0.18	0.85
18,061.0	94.40	357.47	12,827.2	5,090.1	-293.6	5,097.8	3.16	-1.27	-2.90
18,156.0	90.45	358.96	12,823.1	5,185.0	-296.5	5,192.7	4.44	-4.16	1.57
18,250.0	93.11	355.19	12,820.2	5,278.8	-301.3	5,286.7	4.91	2.83	-4.01
18,344.0	93.20	352.60	12,815.1	5,372.1	-311.3	5,380.3	2.75	0.10	-2.76
18,438.0	95.16	352.57	12,808.2	5,465.1	-323.4	5,473.7	2.09	2.09	-0.03
18,533.0	97.21	351.96	12,798.0	5,558.6	-336.1	5,567.7	2.25	2.16	-0.64
18,627.0	97.36	354.05	12,786.0	5,651.2	-347.4	5,660.6	2.21	0.16	2.22
18,687.0	98.42	354.94	12,777.8	5,710.3	-353.1	5,720.0	2.30	1.77	1.48
18,781.0	97.70	357.70	12,764.6	5,803.2	-359.1	5,813.0	3.01	-0.77	2.94
18,875.0	97.27	359.05	12,752.4	5,896.4	-361.8	5,906.2	1.50	-0.46	1.44
18,970.0	95.68	359.43	12,741.7	5,990.7	-363.0	6,000.5	1.72	-1.67	0.40
19,064.0	93.54	359.70	12,734.1	6,084.4	-363.7	6,094.2	2.29	-2.28	0.29
19,158.0	94.19	0.81	12,727.8	6,178.2	-363.3	6,187.9	1.37	0.69	1.18
19,252.0	93.34	0.11	12,721.6	6,272.0	-362.6	6,281.6	1.17	-0.90	-0.74
19,347.0	94.11	1.85	12,715.4	6,366.8	-360.9	6,376.2	2.00	0.81	1.83



Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	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)
19,441.0	93.97	0.37	12,708.8	6,460.5	-359.1	6,469.8	1.58	-0.15	-1.57
19,536.0	92.03	358.82	12,703.8	6,555.4	-359.8	6,564.6	2.61	-2.04	-1.63
19,631.0	94.06	357.70	12,698.8	6,650.2	-362.7	6,659.5	2.44	2.14	-1.18
19,725.0	93.89	358.70	12,692.3	6,743.9	-365.6	6,753.2	1.08	-0.18	1.06
19,819.0	93.24	356.63	12,686.4	6,837.7	-369.4	6,847.0	2.30	-0.69	-2.20
19,914.0	94.02	357.99	12,680.4	6,932.4	-373.9	6,941.8	1.65	0.82	1.43
20,008.0	93.35	356.53	12,674.4	7,026.1	-378.4	7,035.6	1.71	-0.71	-1.55
20,102.0	91.21	357.34	12,670.6	7,119.9	-383.4	7,129.5	2.43	-2.28	0.86
20,196.0	91.32	358.76	12,668.6	7,213.8	-386.6	7,223.5	1.51	0.12	1.51
20,291.0	92.57	0.52	12,665.3	7,308.7	-387.2	7,318.4	2.27	1.32	1.85
20,385.0	93.89	2.79	12,660.0	7,402.5	-384.5	7,412.0	2.79	1.40	2.41
20,479.0	92.53	2.11	12,654.8	7,496.3	-380.5	7,505.5	1.62	-1.45	-0.72
20,574.0	93.15	1.79	12,650.1	7,591.1	-377.2	7,600.2	0.73	0.65	-0.34
20,668.0	92.55	1.72	12,645.4	7,684.9	-374.4	7,693.8	0.64	-0.64	-0.07
20,763.0	91.92	1.56	12,641.7	7,779.8	-371.6	7,788.5	0.68	-0.66	-0.17
20,857.0	90.72	2.09	12,639.5	7,873.8	-368.7	7,882.2	1.40	-1.28	0.56
20,951.0	92.29	0.50	12,637.1	7,967.7	-366.5	7,976.0	2.38	1.67	-1.69
21,045.0	90.95	358.45	12,634.4	8,061.6	-367.4	8,069.9	2.60	-1.43	-2.18
21,140.0	91.12	356.49	12,632.7	8,156.5	-371.6	8,164.9	2.07	0.18	-2.06
21,234.0	91.38	356.16	12,630.6	8,250.3	-377.6	8,258.8	0.45	0.28	-0.35
21,328.0	90.39	354.33	12,629.2	8,344.0	-385.4	8,352.7	2.21	-1.05	-1.95
21,422.0	91.07	355.32	12,628.0	8,437.6	-393.9	8,446.6	1.28	0.72	1.05
21,517.0	92.07	357.35	12,625.4	8,532.4	-399.9	8,541.6	2.38	1.05	2.14
21,611.0	91.24	358.13	12,622.7	8,626.2	-403.7	8,635.5	1.21	-0.88	0.83
21,706.0	91.70	359.72	12,620.2	8,721.2	-405.4	8,730.5	1.74	0.48	1.67
21,800.0	90.69	1.61	12,618.3	8,815.2	-404.3	8,824.3	2.28	-1.07	2.01
21,894.0	88.62	3.99	12,618.8	8,909.0	-399.8	8,917.9	3.36	-2.20	2.53
21,989.0	88.11	4.40	12,621.5	9,003.7	-392.8	9,012.3	0.69	-0.54	0.43
22,083.0	88.22	3.41	12,624.6	9,097.5	-386.4	9,105.7	1.06	0.12	-1.05
22,177.0	87.67	1.67	12,627.9	9,191.3	-382.2	9,199.3	1.94	-0.59	-1.85
22,271.0	87.68	0.64	12,631.7	9,285.2	-380.4	9,293.0	1.09	0.01	-1.10
22,366.0	90.08	0.69	12,633.6	9,380.2	-379.2	9,387.8	2.53	2.53	0.05
22,460.0	90.64	4.43	12,633.0	9,474.1	-375.1	9,481.5	4.02	0.60	3.98
22,554.0	90.29	3.61	12,632.2	9,567.8	-368.5	9,574.9	0.95	-0.37	-0.87
22,649.0	89.13	3.09	12,632.7	9,662.7	-362.9	9,669.4	1.34	-1.22	-0.55
22,743.0	91.83	6.00	12,631.9	9,756.4	-355.5	9,762.7	4.22	2.87	3.10
22,837.0	91.58	5.31	12,629.1	9,849.9	-346.2	9,855.8	0.78	-0.27	-0.73
22,932.0	90.08	4.67	12,627.8	9,944.5	-337.9	9,950.0	1.72	-1.58	-0.67
22,946.0	89.48	4.92	12,627.8	9,958.4	-336.8	9,963.9	4.64	-4.29	1.79
23,038.0	89.48	4.92	12,628.6	10,050.1	-328.9	10,055.2	0.00	0.00	0.00

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BASEBALL CAP FED COM #24H
Project:	LEA COUNTY, NM	TVD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Site:	BULLDOG	MD Reference:	RKB=3382+30 @ 3412.0usft (SCANQUEST)
Well:	BASEBALL CAP FED COM #24H	North Reference:	Grid
Wellbore:	ST01	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH ST01	Database:	EDM_Users

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
PBHL-Baseball Cap Fed	0.00	0.00	12,473.0	10,052.0	-408.5	441,164.90	781,817.70	32° 12' 34.545 N	103° 25' 19.799 W
- actual wellpath misses target center by 174.7usft at 23031.7usft MD (12628.6 TVD, 10043.8 N, -329.4 E)									
- Point									

Checked By: _____ Approved By: _____ Date: _____

Jacinto Federal Com #40H

<u>Perfs</u>	<u>7 1/2% Acid (Gal)</u>	<u>Sand (#)</u>	<u>Fluid (Gal)</u>
1	1512	360339	341376
2	2982	366493	336504
3	3024	367344	369390
4	3024	362059	312228
5	3024	375193	320208
6	3024	371745	423192
7	3024	380040	341418
8	4578	362832	425376
9	3024	371294	439446
10	6006	360731	364266
11	5964	335949	399336
12	4494	371884	319158
13	4494	364363	360024
14	4494	369112	343140
15	4494	369167	324030
16	4494	365320	320544
17	4494	363411	325542
18	8988	372140	464142
19	5964	364025	308154
20	4284	350564	353304
21	5964	352196	342090
22	5964	363268	348054
23	5964	367920	327432
24	4032	370140	356076
25	3024	366420	316470
26	3024	372260	308238
27	3024	371520	362418
28	3024	369000	305970
29	3024	371810	342888
30	3024	366580	300090
31	3024	365540	297570
32	3024	364100	299166
33	3024	366760	298998
34	3024	360900	287658
35	3024	371200	284550
36	3024	364660	310086
37	3024	363560	372876
38	3024	369700	289296
39	3024	360640	273462
40	3024	367340	281652
41	3024	366180	296814
42	3024	368080	296898
43	3024	368780	304836
44	3024	368260	311178
45	3234	362600	313404
46	3024	359143	292488
47	3024	358426	303408
48	3024	358798	294882
49	3024	366140	289086
50	3024	366700	273336
51	3024	365040	278292
52	3024	370920	307692
53	3024	362180	294756
54	3024	366160	289296
55	3024	367260	316806
Totals	201,264	20,104,186	17,958,990

From Bottom to Top	Page 1	Distance Between Perfs	Shots	Page 2	Distance Between Perfs	Shots	Page 3	Distance Between Perfs	Shots	Page 4	Distance Between Perfs	Shots	Page 5	Distance Between Perfs	Shots
	22,904	22	5	22,724	23	5	22,542	25	5	22,365	23	5	22,186	22	5
	22,882	23	5	22,702	22	5	22,522	23	5	22,343	23	5	22,163	22	5
	22,859	22	5	22,680	23	5	22,499	22	5	22,320	22	5	22,141	23	5
	22,837	23	5	22,657	22	5	22,477	22	5	22,298	23	5	22,118	22	5
	22,814	22	5	22,635	23	5	22,455		5	22,275	22	5	22,096	23	5
	22,792	23	5	22,612	22	5	22,433	23	5	22,253	22	5	22,073	22	5
	22,769	22	5	22,590	23	5	22,410	22	5	22,231	23	5	22,051	23	5
	22,747		5	22,567		5	22,388		5	22,208		5	22,028		5
	Plug to Plug	90	40	Plug to Plug	79	40	Plug to Plug	79	40	Plug to Plug	78	40	Plug to Plug	79	40
	Frac Plug	22,927	Total Shots	Frac Plug	22,736	Total Shots	Frac Plug	22,556	Total Shots	Frac Plug	22,376	Total Shots	Frac Plug	22,197	Total Shots

From Bottom to Top	Page 6	Distance Between Perfs	Shots	Page 7	Distance Between Perfs	Shots	Page 8	Distance Between Perfs	Shots	Page 9	Distance Between Perfs	Shots	Page 10	Distance Between Perfs	Shots
	22,003	25	5	21,820	29	5	21,640	29	5	21,460	30	5	21,280	30	5
	21,984	23	5	21,804	22	5	21,625	23	5	21,445	19	5	21,265	22	5
	21,961	22	5	21,782	23	5	21,602	20	5	21,426	26	5	21,243	23	5
	21,939	29	5	21,759	22	5	21,582	25	5	21,400	23	5	21,220	22	5
	21,910	16	5	21,737	23	5	21,557	22	5	21,377	22	5	21,198	26	5
	21,894	26	5	21,714	22	5	21,535	23	5	21,355	22	5	21,172	19	5
	21,868	19	5	21,692	23	5	21,512	22	5	21,333	23	5	21,153	22	5
	21,849		5	21,669		5	21,490		5	21,310		5	21,131		5
	Plug to Plug	51	40	Plug to Plug	79	40	Plug to Plug	75	40	Plug to Plug	79	40	Plug to Plug	74	40
	Frac Plug	21,990	Total Shots	Frac Plug	21,838	Total Shots	Frac Plug	21,657	Total Shots	Frac Plug	21,479	Total Shots	Frac Plug	21,294	Total Shots

From Bottom to Top	Page 11	Distance Between Perfs	Shots	Page 12	Distance Between Perfs	Shots	Page 13	Distance Between Perfs	Shots	Page 14	Distance Between Perfs	Shots	Page 15	Distance Between Perfs	Shots
	21,100	31	5	20,887	64	5	20,738	33	5	20,569	23	5	20,390	22	5
	21,086	23	5	20,879	9	5	20,726	22	5	20,547	23	5	20,367	22	5
	21,063	22	5	20,870	9	5	20,704	22	5	20,524	22	5	20,345	23	5
	21,041	23	5	20,861	22	5	20,682	23	5	20,502	22	5	20,322	22	5
	21,018	22	5	20,839	23	5	20,659	22	5	20,480	23	5	20,300	23	5
	20,996	23	5	20,816	22	5	20,637	23	5	20,457	22	5	20,277	22	5
	20,973	22	5	20,794	23	5	20,614	22	5	20,435	23	5	20,255	22	5
	20,951		5	20,771		5	20,592		5	20,412		5	20,233		5
	Plug to Plug	78	40	Plug to Plug	39	40	Plug to Plug	73	40	Plug to Plug	79	40	Plug to Plug	79	40
	Frac Plug	21,119	Total Shots	Frac Plug	20,900	Total Shots	Frac Plug	20,755	Total Shots	Frac Plug	20,581	Total Shots	Frac Plug	20,401	Total Shots

From Bottom to Top	Page 16	Distance Between Perfs	Shots	Page 17	Distance Between Perfs	Shots	Page 18	Distance Between Perfs	Shots	Page 19	Distance Between Perfs	Shots	Page 20	Distance Between Perfs	Shots
	20,206	27	5	20,031	22	5	19,851	22	5	19,668	26	5	19,492	26	5
	20,188	23	5	20,008	22	5	19,829	23	5	19,649	23	1	19,469	22	5
	20,165	22	5	19,986	23	5	19,806	22	5	19,626	22	5	19,447	23	5
	20,143	23	5	19,963	22	5	19,784	23	5	19,604	22	5	19,424	22	5
	20,120	22	5	19,941	23	5	19,761	22	5	19,582	22	5	19,402	22	5
	20,098	23	5	19,918	22	5	19,739	23	5	19,560	23	5	19,380	23	5
	20,075	22	5	19,896	23	5	19,716	22	5	19,537	19	5	19,357	22	5
	20,053		5	19,873		5	19,694		5	19,518		5	19,335		5
	Plug to Plug	73	40	Plug to Plug	79	40	Plug to Plug	78	40	Plug to Plug	76	36	Plug to Plug	79	40
	Frac Plug	20,216	Total Shots	Frac Plug	20,042	Total Shots	Frac Plug	19,862	Total Shots	Frac Plug	19,680	Total Shots	Frac Plug	19,503	Total Shots

From Bottom to Top	Page 21	Distance Between Perfs	Shots	Page 22	Distance Between Perfs	Shots	Page 23	Distance Between Perfs	Shots	Page 24	Distance Between Perfs	Shots	Page 25	Distance Between Perfs	Shots
	19,306	29	5	19,128	27	5	18,953	22	5	18,733	63	5	18,580	36	5
	19,290	20	5	19,110	22	5	18,931	23	5	18,719	14	5	18,570	21	5
	19,270	25	5	19,088	25	5	18,908	22	5	18,705	14	5	18,549	23	5
	19,245	23	5	19,063	20	5	18,886	23	5	18,691	16	5	18,526	22	5
	19,222	22	5	19,043	24	5	18,863	22	5	18,675	18	5	18,504	22	5
	19,200	22	5	19,019	21	5	18,841	23	5	18,657	22	5	18,482	23	5
	19,178	23	5	18,998	23	5	18,818	22	5	18,635	19	5	18,459	22	5
	19,155		5	18,975		5	18,796		5	18,616		5	18,437		5
	Plug to Plug	78	40	Plug to Plug	78	40	Plug to Plug	78	40	Plug to Plug	59	40	Plug to Plug	66	40
	Frac Plug	19,323	Total Shots	Frac Plug	19,141	Total Shots	Frac Plug	18,964	Total Shots	Frac Plug	18,750	Total Shots	Frac Plug	18,592	Total Shots

From Bottom to Top	Page 26	Distance Between Perfs	Shots	Page 27	Distance Between Perfs	Shots	Page 28	Distance Between Perfs	Shots	Page 29	Distance Between Perfs	Shots	Page 30	Distance Between Perfs	Shots
	18,402	35	5	18,212	45	5	18,039	39	5	17,868	30	5	17,696	22	5
	18,387	18	5	18,198	24	5	18,019	20	5	17,853	22	5	17,673	18	5
	18,369	22	5	18,174	17	5	17,999	20	5	17,831	23	5	17,655	26	5
	18,347	23	5	18,157	21	5	17,979	20	5	17,808	22	5	17,629	27	5
	18,324	22	5	18,136	19	5	17,959	20	5	17,786	23	5	17,602	18	5
	18,302	22	5	18,117	17	5	17,939	20	5	17,763	22	5	17,584	23	5
	18,280	23	5	18,100	22	5	17,919	21	5	17,741	23	5	17,561	16	5
	18,257		5	18,078		5	17,898		5	17,718		5	17,545		5
	Plug to Plug	70	40	Plug to Plug	70	40	Plug to Plug	75	40	Plug to Plug	79	40	Plug to Plug	78	40
	Frac Plug	18,417	Total Shots	Frac Plug	18,227	Total Shots	Frac Plug	18,054	Total Shots	Frac Plug	17,887	Total Shots	Frac Plug	17,707	Total Shots

From Bottom to Top	Page 31	Distance Between Perfs	Shots	Page 32	Distance Between Perfs	Shots	Page 33	Distance Between Perfs	Shots	Page 34	Distance Between Perfs	Shots	Page 35	Distance Between Perfs	Shots
	17,497	48	5	17,313	46	5	17,145	35	5	16,974	26	5	16,790	30	5
	17,478	19	5	17,294	19	5	17,125	20	5	16,955	22	5	16,775	22	5
	17,459	19	5	17,275	19	5	17,105	20	5	16,933	23	5	16,753	22	5
	17,440	19	5	17,256	19	5	17,085	20	5	16,910	22	5	16,731	23	5
	17,421	19	5	17,237	15	5	17,065	20	5	16,888	23	5	16,708	22	5
	17,402	19	5	17,222	19	5	17,045	20	5	16,865	22	5	16,686	23	5
	17,383	24	5	17,203	23	5	17,025	25	5	16,843	23	5	16,663	21	5
	17,359		5	17,180		5	17,000		5	16,820		5	16,642		5
	Plug to Plug	72	40	Plug to Plug	72	40	Plug to Plug	75	40	Plug to Plug	79	40	Plug to Plug	78	40
	Frac Plug	17,512	Total Shots	Frac Plug	17,328	Total Shots	Frac Plug	17,160	Total Shots	Frac Plug	16,989	Total Shots	Frac Plug	16,809	Total Shots

From Bottom to Top	Page 36	Distance Between Perfs	Shots	Page 37	Distance Between Perfs	Shots	Page 38	Distance Between Perfs	Shots	Page 39	Distance Between Perfs	Shots	Page 40	Distance Between Perfs	Shots
	16,610	32	5	16,434	27	5	16,242	40	5	16,072	31	5	15,895	27	5
	16,593	20	5	16,416	22	5	16,230	16	5	16,057	22	5	15,878	23	5
	16,573	24	5	16,394	23	5	16,214	22	5	16,035	23	5	15,855	22	5
	16,549	20	5	16,371	24	5	16,192	23	5	16,012	22	5	15,833	23	5
	16,529	23	5	16,347	20	5	16,169	22	5	15,990	23	5	15,810	22	5
	16,506	22	5	16,327	23	5	16,147	23	5	15,967	22	5	15,788	23	5
	16,484	23	5	16,304	22	5	16,124	21	5	15,945	23	5	15,765	22	5
	16,461		5	16,282		5	16,103		5	15,922		5	15,743		5
	Plug to Plug	81	40	Plug to Plug	79	40	Plug to Plug	70	40	Plug to Plug	79	40	Plug to Plug	78	40
	Frac Plug	16,630	Total Shots	Frac Plug	16,450	Total Shots	Frac Plug	16,262	Total Shots	Frac Plug	16,091	Total Shots	Frac Plug	15,911	Total Shots

From Bottom to Top	Page 41	Distance Between Perfs	Shots	Page 42	Distance Between Perfs	Shots	Page 43	Distance Between Perfs	Shots	Page 44	Distance Between Perfs	Shots	Page 45	Distance Between Perfs	Shots
	15,710	33	5	15,533	30	5	15,352	32	5	15,174	30	5	14,992	32	5
	15,698	22	5	15,518	22	5	15,339	23	5	15,159	22	5	14,980	23	5
	15,676	22	5	15,496	23	5	15,316	22	5	15,137	23	5	14,957	22	5
	15,654	23	5	15,473	23	5	15,294	23	5	15,114	22	5	14,935	23	5
	15,631	23	5	15,450	21	5	15,271	22	5	15,092	23	5	14,912	22	5
	15,608	22	5	15,429	23	5	15,249	22	5	15,069	22	5	14,890	23	5
	15,586	23	5	15,406	22	5	15,227	23	5	15,047	23	5	14,867	22	5
	15,563		5	15,384		5	15,204		5	15,024		5	14,845		5
	Plug to Plug	75	40	Plug to Plug	79	40	Plug to Plug	76	40	Plug to Plug	79	40	Plug to Plug	78	40
	Frac Plug	15,729	Total Shots	Frac Plug	15,552	Total Shots	Frac Plug	15,370	Total Shots	Frac Plug	15,193	Total Shots	Frac Plug	15,013	Total Shots

From Bottom to Top	Page 46	Distance Between Perfs	Shots	Page 47	Distance Between Perfs	Shots	Page 48	Distance Between Perfs	Shots	Page 49	Distance Between Perfs	Shots	Page 50	Distance Between Perfs	Shots
	14,814	31	5	14,643	25	5	14,464	22	5	14,276	30	5	14,096	31	5
	14,800	22	5	14,620	22	5	14,441	20	5	14,261	22	5	14,082	23	5
	14,778	23	5	14,598	22	5	14,421	25	5	14,239	23	5	14,059	22	5
	14,755	22	5	14,576	23	5	14,396	25	5	14,216	25	5	14,037	23	5
	14,733	23	5	14,553	22	5	14,371	20	5	14,191	20	5	14,014	22	5
	14,710	22	5	14,531	21	5	14,351	22	5	14,171	22	5	13,992	23	5
	14,688	20	5	14,510	24	5	14,329	23	5	14,149	22	5	13,969	22	5
	14,668		5	14,486		5	14,306		5	14,127		5	13,947		5
	Plug to Plug	79	40	Plug to Plug	78	40	Plug to Plug	78	40	Plug to Plug	79	40	Plug to Plug	78	40
	Frac Plug	14,834	Total Shots	Frac Plug	14,654	Total Shots	Frac Plug	14,474	Total Shots	Frac Plug	14,295	Total Shots	Frac Plug	14,115	Total Shots

From Bottom to Top	Page 51	Distance Between Perfs	Shots	Page 52	Distance Between Perfs	Shots	Page 53	Distance Between Perfs	Shots	Page 54	Distance Between Perfs	Shots	Page 55	Distance Between Perfs	Shots
	13,915	32	5	13,740	27	5	13,560	30	5	13,386	17	5	13,198	31	5
	13,902	22	5	13,722	20	5	13,544	24	5	13,363	22	5	13,184	23	5
	13,880	23	5	13,702	24	5	13,520	25	5	13,341	23	5	13,161	22	5
	13,857	22	5	13,678	24	5	13,495	19	5	13,318	22	5	13,139	23	5
	13,835	23	5	13,654	21	5	13,476	23	5	13,296	23	5	13,116	21	5
	13,812	22	5	13,633	23	5	13,453	22	5	13,273	22	5	13,095	24	5
	13,790	23	5	13,610	20	5	13,431	28	5	13,251	22	5	13,071	24	5
	13,767		5	13,590		5	13,403		5	13,229		5	13,047		5
	Plug to Plug	79	40	Plug to Plug	78	40	Plug to Plug	80	40	Plug to Plug	79	40	Plug to Plug	78	40
	Frac Plug	13,936	Total Shots	Frac Plug	13,756	Total Shots	Frac Plug	13,575	Total Shots	Frac Plug	13,397	Total Shots	Frac Plug	13,217	Total Shots