

Results of Directional Survey

API number:	30-025-41276	DD	
OGRID:		Operator:	APACHE CORP
		Property:	NORTHEAST DRINKARD UNIT # 726

surface	ULSTR:	N	15	T	21S	R	37E
				1180	FSL	2180	FWL

BH Loc	ULSTR:	N	15	T	21S	R	37E
6879	MD	6860.2	TVD	1260	FSL	1769	FWL

Top Perf/OH	ULSTR:	N	15	T	21S	R	37E
5596	MD	5582.5	TVD	1238	FSL	1882	FWL

Bot Perf/OH	ULSTR:	N	15	T	21S	R	37E
6618	MD	6600.3	TVD	1256	FSL	1792	FWL

	MD	N/S	E/W	VD
	5500	56.53	-289.38	5486.45
TOP PERFS/OH	5596	58.18	-297.88	5582.45
	5600	58.25	-298.23	5586.45
	6600	75.54	-386.71	6582.38
BOT PERFS/OH	6618	75.85	-388.30	6600.31
	6700	77.26	-395.55	6681.97

NEXT TO LAST	6800	78.99	-404.40	6781.57
LAST READING	6868.71	80.18	-410.48	6850.00
TD	6879	80.36	-411.39	6860.25

Surface Location	1180	FS	2180	FW
Projected BHL	1260	FS	1769	FW
Location of				
Top Perfs/OH	1238	FS	1882	FW
Bottom Perfs/OH	1256	FS	1792	FW

SUMMARY of Subsurface Locations

Surface Location	N-15-21S-37E	1180	FS	2180	FW	Vert. Depth
Top Perfs/OH	N-15-21S-37E	1238	FS	1882	FW	5582.45
Bottom Perfs/OH	N-15-21S-37E	1256	FS	1792	FW	6600.31
Projected TD	N-15-21S-37E	1260	FS	1769	FW	6860.25

APR 14 2014

Apache Corporation
303 Veterans Airpark Lane, #3000
Midland, TX 79705

Northeast Drinkard Unit # 726 30-025-41276
Lea County, New Mexico

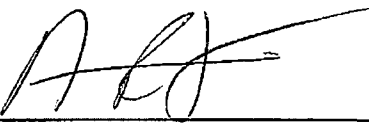
SURF N-15-215-37E 1180' FSL & 2180' FWL
BHL N-15-215-37E 1265' FSL & 1770' FWL

250	2.50	0.50	0.88	2.19	2.19
500	2.50	0.80	1.40	3.50	5.69
750	2.50	0.20	0.35	0.88	6.56
1000	2.50	0.20	0.35	0.88	7.44
1250	2.50	0.50	0.88	2.19	9.63
1300	0.50	0.40	0.70	0.35	9.98

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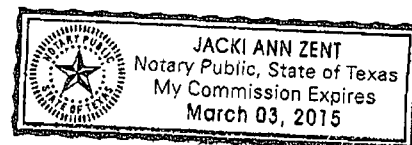


Archie Brown - General Manager

The attached instrument was acknowledged before me on the 31st day of October, 2013
by Archie Brown - General Manager, CapStar Drilling, Inc.



Notary Public



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APACHE CORP

Eunice

Lea County, NM

Northeast Drinkard Unit #726

VH - Job #321013-KW-1071

30-025-41276

SURF N-15-215-37E

1180' FSL + 2180' FWL

BHL N-15-215-37E

1265' FSL + 1770' FWL

Survey: gyro

SDI Survey Report

This survey is correct to the best of my knowledge and is supported by actual field data.

Albiston

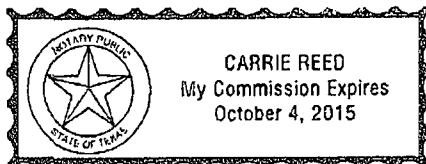
Notarized this date 28th of October, 2013.

Carrie Reed

Notary Signature

County of Midland

State of Texas



SDI
SDI Survey Report

Company: APACHE CORP
Project: Eunice
Site: Lea County, NM
Well: Northeast Drinkard Unit #726
Wellbore: VH - Job #321013-KW-1071
Design: VH - Job #321013-KW-1071

Local Co-ordinate Reference: Well Northeast Drinkard Unit #726
TVD Reference: WELL @ 0.0usft (Original Well Elev)
MD Reference: WELL @ 0.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Regulatory

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

Site:	Lea County, NM				
Site Position:		Northing:	550,762.04 usft	Latitude:	32° 30' 31.140 N
From:	Lat/Long	Easting:	862,794.70 usft	Longitude:	103° 9' 23.400 W
Position Uncertainty:	0.0 usft	Slot Radius:	0"	Grid Convergence:	0.63 °

Well	Northeast Drinkard Unit #726, Vertical					
Well Position	+N/-S	0.0 usft	Northing:	538,519.39 usft	Latitude:	32° 28' 29.860 N
	+E/-W	0.0 usft	Easting:	864,193.59 usft	Longitude:	103° 9' 8.650 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft	

Wellbore:	VH - Job #321013-KW-1071				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	10/17/2013	7.12	60.43	48,603

Design:	VH - Job #321013-KW-1071				
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	281.05	

Survey Program	Date	10/26/2013			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.0	1,254.0	gyro (VH - Job #321013-KW-1071)	Keeper	Keeper Gyro	

MD	Inc	Azi	TVD	N/S	E/W	Closure Azimuth	Closure Distance
(usft)	(°)	(azimuth)	(usft)	(usft)	(usft)	(°)	(usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
100.0	0.34	6.65	100.0	0.3	0.0	6.65	0.3
200.0	0.41	4.41	200.0	0.9	0.1	5.81	1.0
300.0	0.40	6.91	300.0	1.6	0.2	5.74	1.7
400.0	0.28	32.36	400.0	2.2	0.3	8.74	2.2
500.0	0.22	34.99	500.0	2.6	0.6	12.72	2.6
600.0	0.15	25.30	600.0	2.8	0.7	14.70	2.9
700.0	0.17	65.35	700.0	3.0	0.9	17.21	3.2
800.0	0.19	52.45	800.0	3.2	1.2	20.69	3.4
900.0	0.35	75.24	900.0	3.4	1.6	25.84	3.7
1,000.0	0.44	66.86	1,000.0	3.6	2.3	32.38	4.3
1,100.0	0.45	92.42	1,100.0	3.7	3.0	39.05	4.8

SDI

SDI Survey Report

Company:	APACHE CORP	Local Co-ordinate Reference:	Well Northeast Drinkard Unit #726
Project:	Eunice	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Northeast Drinkard Unit #726	North Reference:	Grid
Wellbore:	VH - Job #321013-KW-1071	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321013-KW-1071	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200.0	0.25	110.63	1,200.0	3.6	3.6	44.89	5.1	
1,254.0	0.15	67.50	1,254.0	3.6	3.8	46.38	5.2	



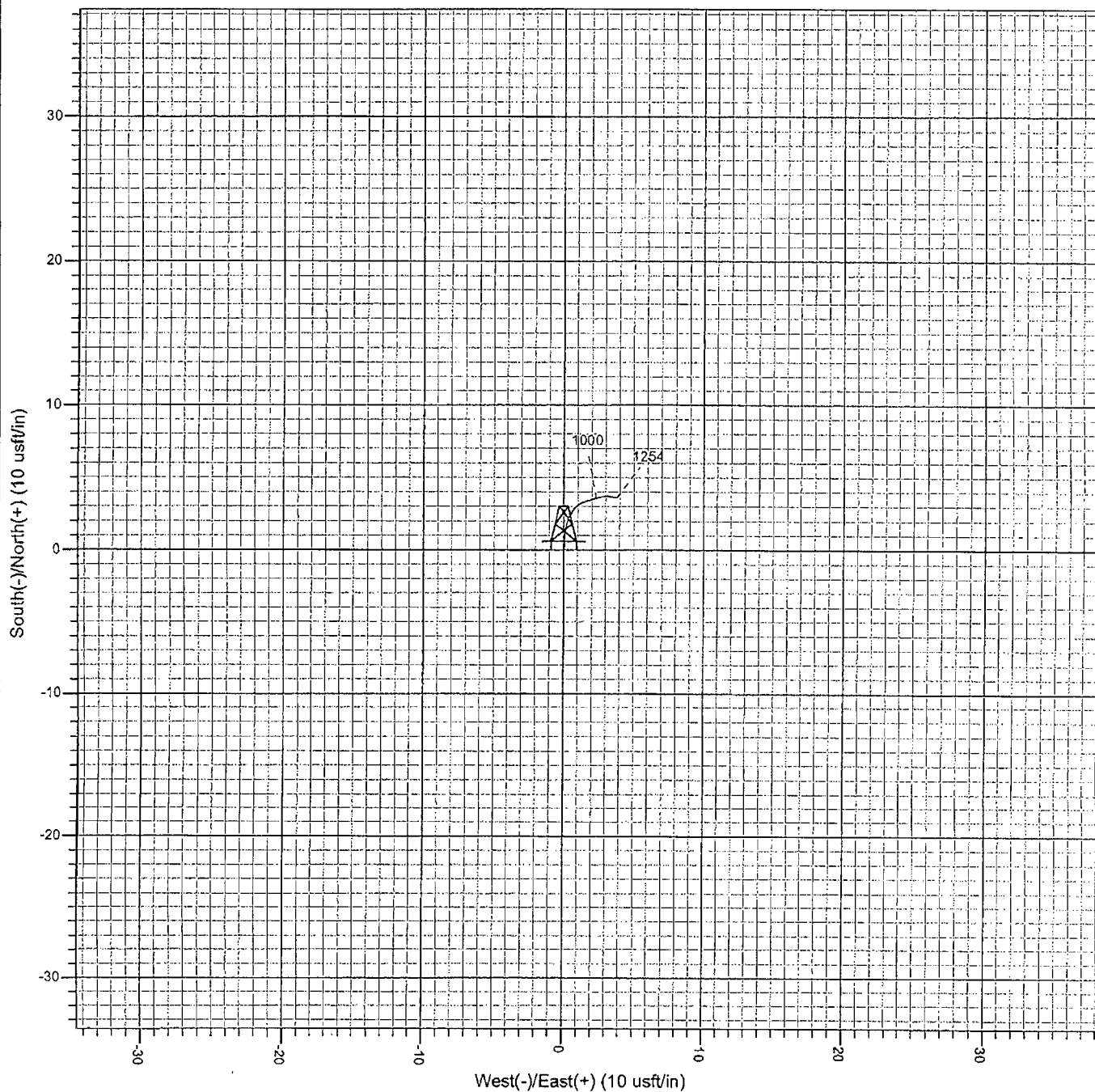
Scientific Drilling

Project: Eunice
Lea County, NM
Well: Northeast Drinkard Unit #726
Wellbore: VH - Job #321013-KW-1071
Design: VH - Job #321013-KW-1071

WELL DETAILS: Northeast Drinkard Unit #726
WELL @ 0.0usft (Original Well Elev)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	538519.39	864193.59	32° 28' 29.860 N	103° 9' 8.650 W	



PROJECT DETAILS: Eunice	SITE DETAILS: Lea County, NM
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 30' 31.140 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 103° 9' 23.400 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.0
Zone: New Mexico East 3001	Convergence: 0.63
System Datum: Mean Sea Level	Local North: Grid

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CORPORATION

Apache Corporation

Lea County, NM (NAD83 NME)

NEDU

#726

30-025-41276

SURF N-15-21S-37E 1180' FSL + 2180' FWL
BHL N-15-21S-37E 1265' FSL + 1770' FWL

WB1/Job #1311359

Plan: Plan #1 10-10-13

Standard Planning Report

10 October, 2013



PHOENIX
TECHNOLOGY SERVICES

Phoenix Technology Services

Planning Report



CORPORATION

Database: GCR DB
 Company: Apache Corporation
 Project: Lea County, NM (NAD83 NME)
 Site: NEDU
 Well: #726
 Wellbore: WB1/Job #1311359
 Design: Plan #1 10-10-13

Local Co-ordinate Reference: Well #726
 TVD Reference: KB @ 3438.00usft (Capstar 120)
 MD Reference: KB @ 3438.00usft (Capstar 120)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	NEDU			
Site Position:		Northing:	549,246.17 usft	Latitude: 32° 30' 15.55234 N
From:	Map	Easting:	907,874.81 usft	Longitude: 103° 8' 39.81023 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence: 0.64 °

Well	#726			
Well Position	+N/-S	-10,728.85 usft	Northing:	538,517.32 usft
	+E/-W	-2,351.43 usft	Easting:	905,523.38 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level: 3,427.00 usft	

Wellbore	WB1/Job #1311359				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	10/10/13	7.12	60.43	48,580

Design	Plan #1 10-10-13			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	281.05

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,358.60	5.17	281.05	2,358.25	2.24	-11.45	2.00	2.00	-30.53	281.05	
6,868.71	5.17	281.05	6,850.00	80.18	-410.48	0.00	0.00	0.00	0.00	PBHL-NEDU #726

Phoenix Technology Services

Planning Report



CORPORATION

Database: GCR DB
 Company: Apache Corporation
 Project: Lea County, NM (NAD83 NME)
 Site: NEDU
 Well: #726
 Wellbore: WB1/Job #1311359
 Design: Plan #1 10-10-13

Local Co-ordinate Reference: Well #726
 TVD Reference: KB @ 3438.00usft (Capstar 120)
 MD Reference: KB @ 3438.00usft (Capstar 120)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,288.00	0.00	0.00	1,288.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8"									
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start DLS 2.00 TFO 281.05									
2,200.00	2.00	281.05	2,199.98	0.33	-1.71	1.75	2.00	2.00	0.00
2,300.00	4.00	281.05	2,299.84	1.34	-6.85	6.98	2.00	2.00	0.00
2,358.60	5.17	281.05	2,358.25	2.24	-11.45	11.66	2.00	2.00	0.00
Start 4510.11 hold at 2358.60 MD									
2,400.00	5.17	281.05	2,399.48	2.95	-15.11	15.40	0.00	0.00	0.00
2,500.00	5.17	281.05	2,499.07	4.68	-23.96	24.41	0.00	0.00	0.00
2,600.00	5.17	281.05	2,598.67	6.41	-32.81	33.43	0.00	0.00	0.00
2,700.00	5.17	281.05	2,698.26	8.14	-41.65	42.44	0.00	0.00	0.00
2,800.00	5.17	281.05	2,797.85	9.86	-50.50	51.45	0.00	0.00	0.00
2,900.00	5.17	281.05	2,897.44	11.59	-59.35	60.47	0.00	0.00	0.00
3,000.00	5.17	281.05	2,997.04	13.32	-68.20	69.48	0.00	0.00	0.00
3,100.00	5.17	281.05	3,096.63	15.05	-77.04	78.50	0.00	0.00	0.00
3,200.00	5.17	281.05	3,196.22	16.78	-85.89	87.51	0.00	0.00	0.00
3,300.00	5.17	281.05	3,295.82	18.51	-94.74	96.53	0.00	0.00	0.00
3,400.00	5.17	281.05	3,395.41	20.23	-103.59	105.54	0.00	0.00	0.00
3,500.00	5.17	281.05	3,495.00	21.96	-112.43	114.56	0.00	0.00	0.00
3,600.00	5.17	281.05	3,594.59	23.69	-121.28	123.57	0.00	0.00	0.00
3,700.00	5.17	281.05	3,694.19	25.42	-130.13	132.59	0.00	0.00	0.00
3,800.00	5.17	281.05	3,793.78	27.15	-138.98	141.60	0.00	0.00	0.00
3,900.00	5.17	281.05	3,893.37	28.87	-147.82	150.62	0.00	0.00	0.00
4,000.00	5.17	281.05	3,992.97	30.60	-156.67	159.63	0.00	0.00	0.00
4,100.00	5.17	281.05	4,092.56	32.33	-165.52	168.65	0.00	0.00	0.00
4,200.00	5.17	281.05	4,192.15	34.06	-174.37	177.66	0.00	0.00	0.00
4,300.00	5.17	281.05	4,291.74	35.79	-183.21	186.68	0.00	0.00	0.00
4,400.00	5.17	281.05	4,391.34	37.52	-192.06	195.69	0.00	0.00	0.00
4,500.00	5.17	281.05	4,490.93	39.24	-200.91	204.70	0.00	0.00	0.00
4,600.00	5.17	281.05	4,590.52	40.97	-209.76	213.72	0.00	0.00	0.00
4,700.00	5.17	281.05	4,690.12	42.70	-218.60	222.73	0.00	0.00	0.00
4,800.00	5.17	281.05	4,789.71	44.43	-227.45	231.75	0.00	0.00	0.00
4,900.00	5.17	281.05	4,889.30	46.16	-236.30	240.76	0.00	0.00	0.00
5,000.00	5.17	281.05	4,988.89	47.88	-245.15	249.78	0.00	0.00	0.00
5,100.00	5.17	281.05	5,088.49	49.61	-253.99	258.79	0.00	0.00	0.00
5,200.00	5.17	281.05	5,188.08	51.34	-262.84	267.81	0.00	0.00	0.00
5,300.00	5.17	281.05	5,287.67	53.07	-271.69	276.82	0.00	0.00	0.00
5,400.00	5.17	281.05	5,387.27	54.80	-280.54	285.84	0.00	0.00	0.00
5,500.00	5.17	281.05	5,486.86	56.53	-289.38	294.85	0.00	0.00	0.00
5,600.00	5.17	281.05	5,586.45	58.25	-298.23	303.87	0.00	0.00	0.00
5,700.00	5.17	281.05	5,686.04	59.98	-307.08	312.88	0.00	0.00	0.00
5,800.00	5.17	281.05	5,785.64	61.71	-315.93	321.90	0.00	0.00	0.00
5,900.00	5.17	281.05	5,885.23	63.44	-324.77	330.91	0.00	0.00	0.00
6,000.00	5.17	281.05	5,984.82	65.17	-333.62	339.93	0.00	0.00	0.00
6,100.00	5.17	281.05	6,084.42	66.90	-342.47	348.94	0.00	0.00	0.00
6,200.00	5.17	281.05	6,184.01	68.62	-351.32	357.95	0.00	0.00	0.00
6,300.00	5.17	281.05	6,283.60	70.35	-360.16	366.97	0.00	0.00	0.00
6,400.00	5.17	281.05	6,383.19	72.08	-369.01	375.98	0.00	0.00	0.00
6,500.00	5.17	281.05	6,482.79	73.81	-377.86	385.00	0.00	0.00	0.00
6,600.00	5.17	281.05	6,582.38	75.54	-386.71	394.01	0.00	0.00	0.00
6,700.00	5.17	281.05	6,681.97	77.26	-395.55	403.03	0.00	0.00	0.00

Phoenix Technology Services

Planning Report



CORPORATION

Database: GCR DB
 Company: Apache Corporation
 Project: Lea County, NM (NAD83 NME)
 Site: NEDU
 Well: #726
 Wellbore: WB1/Job #1311359
 Design: Plan #1 10-10-13

Local Co-ordinate Reference: Well #726
 TVD Reference: KB @ 3438.00usft (Capstar 120)
 MD Reference: KB @ 3438.00usft (Capstar 120)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned 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)
6,800.00	5.17	281.05	6,781.57	78.99	-404.40	412.04	0.00	0.00	0.00
6,868.71	5.17	281.05	6,850.00	80.18	-410.48	418.24	0.00	0.00	0.00

TD at 6868.71 - PBHL-NEDU #726

Design Targets

Target Name

- hit/miss target
 - Shape

Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
0.00	0.00	6,850.00	80.18	-410.48	538,597.50	905,112.90	32° 28' 30.50286 N	103° 9' 13.43124 W

PBHL-NEDU #726
 - plan hits target center
 - Circle (radius 25.00)

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
	7,030.00	5 1/2" Production	5-1/2	7-7/8
1,288.00	1,288.00	8 5/8"	8-5/8	11

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,263.00	1,263.00	Rustler		0.00	
1,333.00	1,333.00	T. Salt		0.00	
2,447.71	2,447.00	Tansil		0.00	
2,596.32	2,595.00	Yates		0.00	
2,846.34	2,844.00	Seven Rivers		0.00	
3,430.72	3,426.00	Queen		0.00	
3,759.05	3,753.00	Grayburg		0.00	
4,080.36	4,073.00	San Andres		0.00	
5,152.73	5,141.00	Glorieta		0.00	
5,220.00	5,208.00	Paddock		0.00	
5,556.37	5,543.00	Blinberry		0.00	
6,011.22	5,996.00	Tubb		0.00	
6,460.05	6,443.00	Drinkard		0.00	
6,730.15	6,712.00	Abo		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
2,100.00	2,100.00	0.00	0.00	KOP Start DLS 2.00 TFO 281.05
2,358.60	2,358.25	2.24	-11.45	Start 4510.11 hold at 2358.60 MD
6,868.71	6,850.00	80.18	-410.48	TD at 6868.71