

Results of Directional Survey

API number:	30-025-41336	DD
OGRID:		Operator: APACHE CORP
	Property:	NORTHEAST DRINKARD UNIT # 844

surface	ULSTR:	A	22	T	21S	R	37E
				1215	FNL	465	FEL

BH Loc	ULSTR:	A	22	T	21S	R	37E
6858	MD	6851.5	TVD	1210	FNL	725	FEL

Top Perf/OH	ULSTR:	A	22	T	21S	R	37E
5507	MD	5502.3	TVD	1214	FNL	657	FEL

Bot Perf/OH	ULSTR:	A	22	T	21S	R	37E
6588	MD	6581.8	TVD	1213	FNL	714	FEL

	MD	N/S	E/W	VD
	5487	0.98	-191.16	5482.31
TOP PERFS/OH	5507	1.00	-192.29	5502.28
	5572	1.08	-195.97	5567.18
	6512	2.23	-245.42	6505.85
BOT PERFS/OH	6588	2.44	-248.84	6581.77
	6597	2.46	-249.24	6590.76

NEXT TO LAST	6807	4.55	-258.43	6800.55
LAST READING	6858	4.79	-260.19	6851.52
TD	6858	4.79	-260.19	6851.52

Surface Location	1215	FN	465	FE
Projected BHL	1210	FN	725	FE
Location of				
Top Perfs/OH	1214	FN	657	FE
Bottom Perfs/OH	1213	FN	714	FE

SUMMARY of Subsurface Locations

Surface Location	A-22-21S-37E	1215	FN	465	FE	Vert. Depth
Top Perfs/OH	A-22-21S-37E	1214	FN	657	FE	5502.28
Bottom Perfs/OH	A-22-21S-37E	1213	FN	714	FE	6581.77
Projected TD	A-22-21S-37E	1210	FN	725	FE	6851.52

MAR 31 2014

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

Northeast Drinkard Unit # 844 D 30-025-41336
Lea County, New Mexico

A-22-215-37E

1215' FNL + 465' FEL

51	0.51	0.00	0.00	0.00	0.00
250	1.99	0.60	1.05	2.09	2.09
492	2.42	0.40	0.70	1.69	3.78
1000	5.08	0.80	1.40	7.11	10.90
1295	2.95	0.30	0.53	1.55	12.44

HOBBS OCD

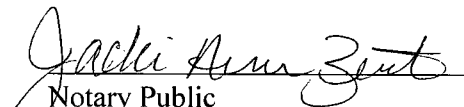
MAR 13 2014

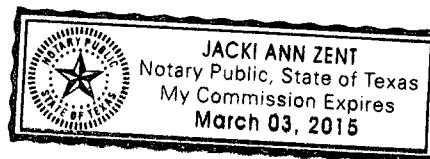
RECEIVED



Archie Brown - General Manager

The attached instrument was acknowledged before me on the 30th day of December, 2013 by Archie Brown - General Manager, CapStar Drilling, Inc.


Notary Public





Apache Corporation

Lea County, NM (NAD27 NME)

NEDU 30-025-41336 A-22-215-37E 1215' JUL + 465' FEL
#844

WB1/Job #1311661

HOBBS OCD

MAR 13 2014

Survey: MWD Surveys

RECEIVED

Phoenix Final Survey Report

11 December, 2013



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #844
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3417.00usft (Capstar 120)
Site:	NEDU	MD Reference:	KB @ 3417.00usft (Capstar 120)
Well:	#844	North Reference:	Grid
Wellbore:	WB1/Job #1311661	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 120)	Database:	GCR DB

Project	Lea County, NM (NAD27 NME)		
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	NEDU			
Site Position:		Northing:	536,097.47 usft	Latitude: 32° 28' 5.59737 N
From:	Map	Easting:	866,927.15 usft	Longitude: 103° 8' 37.06135 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence: 0.64 °

Well	#844			
Well Position	+N/-S	0.00 usft	Northing: 536,097.47 usft	Latitude: 32° 28' 5.59737 N
	+E/-W	0.00 usft	Easting: 866,927.15 usft	Longitude: 103° 8' 37.06135 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level: 3,406.00 usft

Wellbore	WB1/Job #1311661				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	12/03/13	7.10	60.42	48,562

Design	Surveys (Capstar 120)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	269.21	

Survey Program	Date: 12/10/13				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	1,218.00	Scientific Drilling (WB1/Job #1311661)	ISCWSA-GYRO-3	VES Gyro	
1,394.00	4,803.00	MWD Surveys (WB1/Job #1311661)	MWD	MWD - Standard	

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
	1,218.00	0.55	259.67	1,217.94	-7.51	-9.57	9.67	0.00
	1,394.00	0.60	299.80	1,393.93	-7.20	-11.20	11.30	0.23
First Phoenix MWD Survey								
	1,479.00	1.30	300.70	1,478.92	-6.49	-12.41	12.50	0.82
	1,564.00	1.30	295.90	1,563.89	-5.58	-14.11	14.18	0.13
	1,649.00	1.40	306.00	1,648.87	-4.55	-15.82	15.88	0.30
	1,734.00	0.80	311.10	1,733.85	-3.55	-17.10	17.15	0.71
	1,819.00	1.10	329.60	1,818.84	-2.45	-17.96	18.00	0.50
	1,905.00	1.00	346.90	1,904.83	-1.01	-18.55	18.56	0.38
	1,990.00	1.90	323.60	1,989.80	0.85	-19.56	19.54	1.24
	2,075.00	2.80	288.30	2,074.73	2.63	-22.36	22.33	1.96

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #844
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3417.00usft (Capstar 120)
Site:	NEDU	MD Reference:	KB @ 3417.00usft (Capstar 120)
Well:	#844	North Reference:	Grid
Wellbore:	WB1/Job #1311661	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 120)	Database:	GCR DB

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,160.00	3.20	272.60	2,159.62	3.39	-26.70	26.66	1.07	
2,245.00	2.90	275.50	2,244.50	3.71	-31.21	31.16	0.40	
2,331.00	2.60	279.40	2,330.40	4.23	-35.30	35.24	0.41	
2,416.00	2.90	268.60	2,415.30	4.50	-39.36	39.29	0.70	
2,501.00	2.90	274.10	2,500.19	4.60	-43.65	43.58	0.33	
2,586.00	2.30	271.40	2,585.10	4.79	-47.50	47.43	0.72	
2,672.00	2.20	271.60	2,671.04	4.88	-50.88	50.80	0.12	
2,757.00	2.10	268.50	2,755.98	4.89	-54.06	53.99	0.18	
2,843.00	1.50	263.10	2,841.94	4.71	-56.76	56.69	0.72	
2,928.00	2.30	250.60	2,926.89	4.01	-59.47	59.41	1.05	
3,013.00	1.90	242.20	3,011.83	2.79	-62.32	62.28	0.59	
3,099.00	2.00	241.40	3,097.78	1.40	-64.90	64.88	0.12	
3,184.00	2.50	251.80	3,182.72	0.11	-67.97	67.96	0.76	
3,269.00	2.30	258.70	3,267.64	-0.80	-71.40	71.40	0.41	
3,355.00	3.60	260.40	3,353.53	-1.59	-75.75	75.77	1.51	
3,440.00	3.40	265.20	3,438.37	-2.24	-80.90	80.92	0.42	
3,525.00	2.90	262.30	3,523.24	-2.74	-85.54	85.57	0.62	
3,610.00	2.60	263.70	3,608.14	-3.24	-89.59	89.62	0.36	
3,695.00	2.50	266.00	3,693.06	-3.58	-93.35	93.39	0.17	
3,780.00	3.60	267.30	3,777.93	-3.84	-97.87	97.91	1.30	
3,866.00	3.70	263.40	3,863.76	-4.28	-103.32	103.37	0.31	
3,951.00	3.40	267.00	3,948.60	-4.73	-108.56	108.62	0.44	
4,036.00	3.50	263.80	4,033.44	-5.14	-113.66	113.72	0.26	
4,121.00	3.30	267.70	4,118.29	-5.52	-118.68	118.75	0.36	
4,206.00	2.70	256.80	4,203.18	-6.08	-123.08	123.15	0.97	
4,292.00	3.30	274.80	4,289.06	-6.33	-127.52	127.59	1.29	
4,377.00	3.70	281.90	4,373.90	-5.56	-132.64	132.70	0.69	
4,463.00	2.70	271.60	4,459.77	-4.93	-137.38	137.43	1.34	
4,548.00	2.90	272.90	4,544.67	-4.77	-141.53	141.58	0.25	
4,634.00	2.70	270.40	4,630.56	-4.65	-145.72	145.77	0.27	
4,719.00	2.70	267.30	4,715.47	-4.73	-149.73	149.78	0.17	
4,803.00	2.60	265.40	4,799.38	-4.97	-153.60	153.66	0.16	
4,890.00	3.40	279.10	4,886.26	-4.72	-158.12	158.17	1.23	
4,975.00	3.60	279.50	4,971.10	-3.88	-163.24	163.28	0.24	
5,060.00	3.40	278.30	5,055.94	-3.08	-168.36	168.39	0.25	
5,146.00	3.40	279.70	5,141.79	-2.28	-173.40	173.42	0.10	
5,231.00	3.00	281.50	5,226.66	-1.41	-178.06	178.07	0.49	
5,316.00	3.10	281.50	5,311.54	-0.51	-182.50	182.49	0.12	
5,401.00	3.00	280.70	5,396.42	0.36	-186.93	186.91	0.13	
5,487.00	2.70	275.60	5,482.31	0.98	-191.16	191.13	0.46	
5,572.00	3.80	268.10	5,567.18	1.08	-195.97	195.94	1.38	
5,658.00	3.50	276.20	5,653.00	1.27	-201.43	201.39	0.69	
5,743.00	3.20	272.40	5,737.86	1.65	-206.38	206.33	0.44	
5,829.00	3.30	277.00	5,823.72	2.05	-211.23	211.18	0.32	
5,914.00	3.30	273.80	5,908.58	2.51	-216.10	216.05	0.22	

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #844
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3417.00usft (Capstar 120)
Site:	NEDU	MD Reference:	KB @ 3417.00usft (Capstar 120)
Well:	#844	North Reference:	Grid
Wellbore:	WB1/Job #1311661	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 120)	Database:	GCR DB

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
6,000.00	3.20	270.60	5,994.44	2.70	-220.97	220.91	0.24	
6,085.00	3.30	272.60	6,079.30	2.83	-225.79	225.73	0.18	
6,170.00	2.70	271.20	6,164.19	2.99	-230.23	230.17	0.71	
6,256.00	2.50	266.80	6,250.10	2.92	-234.13	234.07	0.33	
6,341.00	2.60	266.20	6,335.01	2.69	-237.91	237.85	0.12	
6,426.00	2.60	267.20	6,419.93	2.47	-241.75	241.70	0.05	
6,512.00	2.30	265.00	6,505.85	2.23	-245.42	245.37	0.37	
6,597.00	2.90	280.30	6,590.76	2.46	-249.24	249.18	1.07	
6,682.00	2.60	285.10	6,675.66	3.35	-253.21	253.14	0.44	
6,768.00	2.50	282.90	6,761.58	4.27	-256.93	256.84	0.16	
6,807.00	2.00	277.60	6,800.55	4.55	-258.43	258.34	1.39	
Last Phoenix MWD Survey								
6,858.00	2.00	277.60	6,851.52	4.79	-260.19	260.10	0.00	
Projection to TD								

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,218.00				Tie-on to Gyro	
1,394.00	1,393.93	-7.20	-11.20	First Phoenix MWD Survey	
6,807.00	6,800.55	4.55	-258.43	Last Phoenix MWD Survey	
6,858.00	6,851.52	4.79	-260.19	Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------

Phoenix Technology Services SURVEY DATA CERTIFICATION

HOBBS OCD

MAR 13 2014



PHOENIX
TECHNOLOGY SERVICES

PHOENIX JOB NUMBER 1311661

OPERATOR RECEIVED Apache Corp.

WELL NAME NEDU #844

COUNTY & STATE

Lea County, New Mexico

API WELL NUMBER 30-025-41336

PROPOSED DIRECTION 269.21

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
1,218 ft	1,217.94 ft	0.55	259.67	-7.51 ft	-9.57 ft	Gyro

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
8-Dec-13	1,394 ft	0.6	299.8

SURVEY INSTRUMENT

TYPE

Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
11-Dec-13	6,807 ft	2	277.6

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
11-Dec-13	6,858 ft	2	277.6

Jesse N Wyatt

PRINT YOUR NAME ABOVE

Jesse N Wyatt

SIGN YOUR NAME ABOVE

12/11/2013

TODAY'S DATE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.85
DECLINATION OR GRID	GRID

MWD SUPERVISOR 1 Jesse Wyatt

DIRECTIONAL DRILLER 1

Joseph Paup

MWD SUPERVISOR 2 0

DIRECTIONAL DRILLER 2

Jackson John

1805 Brittmore Road Houston, Texas 77043 (713)3370609 (Voice), (713)337-0599 (Fax)

HOBBS OCD

MAR 13 2014

RECEIVED

APACHE CORP

Eunice

Lea County, NM (Grid North)

Northeast Drinkard Unit #844 30-025-41336

VH - Job #321213-KW-1262 A-22-215-37E

1215' FNL+ 465' FEL

Survey: Gyro

SDI Survey Report

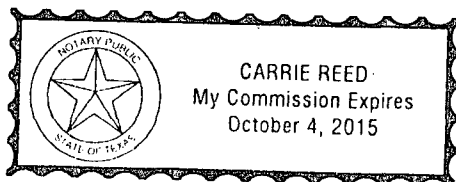
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 31st of December, 2013.

Carrie Reed

Notary Signature
County of Midland
State of Texas



SDI
SDI Survey Report

Company:	APACHE CORP	Local Co-ordinate Reference:	Well Northeast Drinkard Unit #844
Project:	Eunice	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM (Grid North)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Northeast Drinkard Unit #844	North Reference:	Grid
Wellbore:	VH - Job #321213-KW-1262	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321213-KW-1262	Database:	EDM-Regulatory

Project	Eunice		
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		Lea County, NM (Grid North)			
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 #844, Vertical					
Well Position	+N/-S	0.0 usft	Northing:	536,138.57 usft	Latitude:	32° 28' 6.020 N
	+E/-W	0.0 usft	Easting:	866,782.00 usft	Longitude:	103° 8' 38.750 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft

Wellbore	VH - Job #321213-KW-1262				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/7/2013	7.10	60.42	48,586

Design		VH - Job #321213-KW-1262		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	231.86

Survey Program		Date 12/16/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	1,218.0	Gyro (VH - Job #321213-KW-1262)	Keeper	Keeper Gyro

Survey

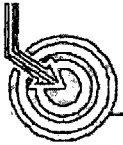
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
100.0	0.54	228.81	100.0	-0.3	-0.4	228.81	0.5
200.0	0.59	237.09	200.0	-0.9	-1.1	231.73	1.5
300.0	0.66	234.79	300.0	-1.5	-2.0	233.51	2.5
400.0	0.62	226.21	400.0	-2.2	-2.9	232.63	3.7
500.0	0.61	230.24	500.0	-2.9	-3.7	231.63	4.7
600.0	0.56	230.60	600.0	-3.6	-4.5	231.41	5.7
700.0	0.67	234.97	700.0	-4.2	-5.3	231.66	6.8
800.0	0.64	233.33	800.0	-4.9	-6.3	232.02	8.0
900.0	0.62	223.99	900.0	-5.6	-7.1	231.62	9.1
1,000.0	0.70	225.45	999.9	-6.4	-7.9	230.85	10.2
1,100.0	0.47	232.08	1,099.9	-7.1	-8.7	230.60	11.2

SDI

SDI Survey Report

Company:	APACHE CORP	Local Co-ordinate Reference:	Well Northeast Drinkard Unit #844
Project:	Eunice	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Lea County, NM (Grid North)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Northeast Drinkard Unit #844	North Reference:	Grid
Wellbore:	VH - Job #321213-KW-1262	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #321213-KW-1262	Database:	EDM-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200.0	0.49	255.88	1,199.9	-7.5	-9.4	231.52	12.0	
1,218.0	0.55	259.67	1,217.9	-7.5	-9.6	231.86	12.2	



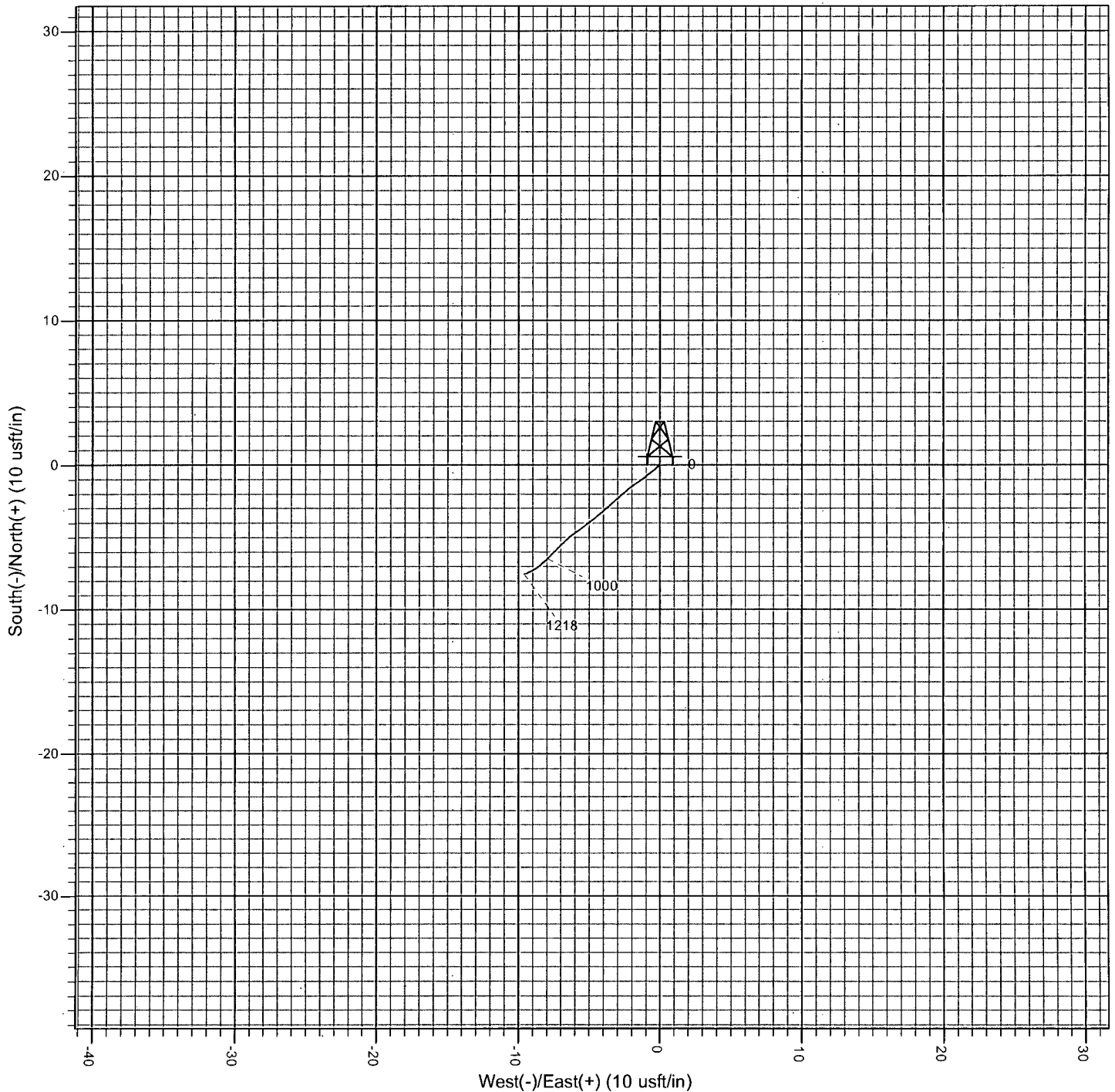
Scientific Drilling

Project: Eunice
Lea County, NM (Grid North)
Well: Northeast Drinkard Unit #844
Wellbore: VH - Job #321213-KW-1262
Design: VH - Job #321213-KW-1262

WELL DETAILS: Northeast Drinkard Unit #844
WELL @ 0.0usft (Original Well Elev)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	536138.57	866782.00	32° 28' 6.020 N	103° 8' 38.750 W	



PROJECT DETAILS: Eunice	SITE DETAILS: Lea County, NM (Grid North)
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