

Results of Directional Survey

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API number:	30-025-41872		
OGRID:		Operator:	APACHE CORP
		Property:	WEST BLINEBRY DRINKARD UNIT # 202

surface	ULSTR:	G	09	T 21S	R 37E
				2040 FNL	1410 FEL

BH Loc	ULSTR:	G	09	T 21S	R 37E
6939 MD		6936.6	TVD	1948 FNL	1308 FEL

Top Perf/OH	ULSTR:	G	09	T 21S	R 37E
5612 MD		5610.2	TVD	1975 FNL	1334 FEL

Bot Perf/OH	ULSTR:	G	09	T 21S	R 37E
6647 MD		6644.6	TVD	1952 FNL	1312 FEL

	MD	N/S	E/W	VD
	5428	62.88	72.79	5426.19
TOP PERFS/OH	5612	65.36	76.14	5610.15
	5677	66.24	77.33	5675.13
	6425	84.00	94.16	6422.72
BOT PERFS/OH	6647	87.92	98.44	6644.64
	6674	88.40	98.96	6671.63

NEXT TO LAST	6680.00	91.33	101.90	6887.59
LAST READING	6939.00	91.87	102.44	6936.59
TD	6939	91.87	102.44	6936.59

Surface Location	2040 FN	1410 FE
Projected BHL	1948 FN	1308 FE
Location of		
Top Perfs/OH	1975 FN	1334 FE
Bottom Perfs/OH	1952 FN	1312 FE

SUMMARY of Subsurface Locations

Surface Location	G-09-21S-37E	2040 FN	1410 FE	Vert. Depth
Top Perfs/OH	G-09-21S-37E	1975 FN	1334 FE	5610.15
Bottom Perfs/OH	G-09-21S-37E	1952 FN	1312 FE	6644.64
Projected TD	G-09-21S-37E	1948 FN	1308 FE	6936.59

FEB 03 2015



Apache Corporation

Lea County, NM (NAD83 NME)
West Blinbry Drinkard Unit
#202 D

WB1/Job #1411421

Design: Surveys (Basic 39)

Standard Survey Report

31 August, 2014

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JAN 30 2015

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OPERATOR Apache Corp. (873)
WELL/LEASE WBDU #202D 30-025-41872
COUNTY Lea Co., NM. G-9-215-37E 2040' FUL + 1410' FEL

STATE OF NEW MEXICO
DEVIATION REPORT

249	0.50
460	0.60
710	0.90
959	0.80
1292	0.30
1694	1.70
1942	2.50
2192	2.30
2694	1.50
2941	1.40
3188	1.00
3437	1.70
3686	1.40
3935	2.20
4183	2.30
4429	2.20
4678	0.90
4929	0.80
5177	0.90
5428	1.40
5678	1.20
5928	2.00
6425	1.70

HOBBSOCD

JAN 30 2015

RECEIVED

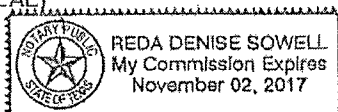
SIGNED BY:


RON SCANDOLARI, VP-CONTRACT DRILLING

STATE OF TEXAS
COUNTY OF MIDLAND

ON THIS 8 DAY OF September, 2014, BEFORE ME, R SOWELL, A NOTARY
PUBLIC, PERSONALLY APPEARED RON SCANDOLARI, WHO ACKNOWLEDGED AND EXECUTED
THIS DOCUMENT. WITNESS MY HAND AND OFFICIAL SEAL.

(SEAL)



Reda Denise Sowell
NOTARY PUBLIC

am

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #202 D
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB: 12' @ 3479.00usft (Basic 39)
Site:	West Blinbry Drinkard Unit	MD Reference:	KB: 12' @ 3479.00usft (Basic 39)
Well:	#202 D	North Reference:	Grid
Wellbore:	WB1/Job #1411421	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 39)	Database:	GCR DB

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		West Blinbry Drinkard Unit			
Site Position:		Northing:	542,793.05 usft	Latitude:	32° 29' 12.26799 N
From:	Map	Easting:	902,763.71 usft	Longitude:	103° 9' 40.31178 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.63 °

Well:	#202 D					
Well Position	+N/-S	0.00 usft	Northing:	545,762.12 usft	Latitude:	32° 29' 41.73471 N
	+E/-W	0.00 usft	Easting:	901,916.52 usft	Longitude:	103° 9' 49.82090 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,467.00 usft

Wellbore	WB1/Job #1411421				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	08/18/14	7.13	60.41	48,484

Design	Surveys (Basic 39)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	49.07	

Survey Program	Date	08/31/14			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
108.00	1,315.00	SDI Gyro Survey (WB1/Job #1411421)	Scientific Gyro	Scientific Drilling Intl. Standard Wireline Keeper	
1,444.00	6,939.00	Phoenix MWD Survey (WB1/Job #1411421)	PHX+MWD+BGGM	PHX+MWD+BGGM v3:standard declination	

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	
108.00	0.43	203.61	108.00	-0.37	-0.16	-0.37	0.40	0.40	0.00	
232.00	0.64	213.91	231.99	-1.37	-0.74	-1.45	0.19	0.17	8.31	
350.00	0.85	259.88	349.98	-2.07	-1.96	-2.84	0.52	0.18	38.96	
411.00	0.97	234.23	410.98	-2.45	-2.83	-3.75	0.69	0.20	-42.05	
535.00	0.92	285.23	534.96	-2.81	-4.64	-5.34	0.66	-0.04	41.13	
637.00	0.94	283.77	636.95	-2.39	-6.24	-6.28	0.03	0.02	-1.43	
763.00	1.02	283.26	762.93	-1.89	-8.34	-7.54	0.06	0.06	-0.40	
889.00	1.07	298.99	888.91	-1.06	-10.46	-8.60	0.23	0.04	12.48	
1,014.00	0.87	309.10	1,013.89	0.10	-12.22	-9.16	0.21	-0.16	8.09	

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #202 D
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB: 12' @ 3479.00usft (Basic 39)
Site:	West Blinbry Drinkard Unit	MD Reference:	KB: 12' @ 3479.00usft (Basic 39)
Well:	#202 D	North Reference:	Grid
Wellbore:	WB1/Job #1411421	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 39)	Database:	GCR DB

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)
1,137.00	0.57	301.53	1,136.88	1.01	-13.46	-9.51	0.26	-0.24	-6.15
1,200.00	0.52	312.42	1,199.88	1.37	-13.94	-9.64	0.18	-0.08	17.29
1,262.00	0.47	304.59	1,261.88	1.70	-14.36	-9.73	0.14	-0.08	-12.63
1,315.00	0.47	306.88	1,314.88	1.96	-14.71	-9.83	0.04	0.00	4.32
Tie-on to SDI Gyro Survey									
1,444.00	0.50	344.90	1,443.87	2.82	-15.28	-9.70	0.25	0.02	29.47
First Phoenix MWD Survey									
1,694.00	1.70	79.00	1,693.83	4.58	-11.92	-6.01	0.72	0.48	37.64
1,942.00	2.50	78.50	1,941.66	6.36	-3.01	1.89	0.32	0.32	-0.20
2,192.00	2.30	56.30	2,191.45	10.23	6.50	11.61	0.38	-0.08	-8.88
2,440.00	1.80	39.90	2,439.29	15.98	13.14	20.40	0.31	-0.20	-6.61
2,694.00	1.50	43.70	2,693.19	21.44	18.00	27.64	0.13	-0.12	1.50
2,941.00	1.40	54.00	2,940.11	25.55	22.67	33.87	0.11	-0.04	4.17
3,188.00	1.00	69.00	3,187.05	28.10	27.13	38.90	0.20	-0.16	6.07
3,437.00	1.70	38.40	3,435.99	31.77	31.45	44.57	0.39	0.28	-12.29
3,686.00	1.40	31.10	3,684.89	37.27	35.31	51.10	0.14	-0.12	-2.93
3,935.00	2.20	45.50	3,933.77	43.23	40.29	58.76	0.37	0.32	5.78
4,183.00	2.30	50.20	4,181.58	49.75	47.51	68.49	0.08	0.04	1.90
4,429.00	2.20	72.50	4,427.40	54.33	55.81	77.76	0.36	-0.04	9.07
4,678.00	0.90	65.30	4,676.30	56.58	62.14	84.02	0.53	-0.52	-2.89
4,929.00	0.80	65.70	4,927.27	58.13	65.53	87.59	0.04	-0.04	0.16
5,177.00	0.90	57.20	5,175.24	59.89	68.75	91.18	0.06	0.04	-3.43
5,428.00	1.40	51.20	5,426.19	62.88	72.79	96.19	0.20	0.20	-2.39
5,677.00	1.20	56.10	5,675.13	66.24	77.33	101.82	0.09	-0.08	1.97
5,927.00	2.00	41.70	5,925.03	70.96	82.40	108.74	0.36	0.32	-5.76
6,175.00	2.20	39.40	6,172.86	77.87	88.30	117.73	0.09	0.08	-0.93
6,425.00	1.70	49.20	6,422.72	84.00	94.16	126.17	0.24	-0.20	3.92
6,674.00	1.30	45.30	6,671.63	88.40	98.96	132.68	0.17	-0.16	-1.57
6,890.00	0.90	44.90	6,887.59	91.33	101.90	136.82	0.19	-0.19	-0.19
Last Phoenix MWD Survey									
6,939.00	0.90	44.90	6,936.59	91.87	102.44	137.58	0.00	0.00	0.00
Projection to TD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,315.00	1,314.88	1.96	-14.71	Tie-on to SDI Gyro Survey
1,444.00	1,443.87	2.82	-15.28	First Phoenix MWD Survey
6,890.00	6,887.59	91.33	101.90	Last Phoenix MWD Survey
6,939.00	6,936.59	91.87	102.44	Projection to TD



Phoenix Technology Services
Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #202 D
Project:	Lea County, NM (NAD83 NME)	TVD Reference:	KB: 12' @ 3479.00usft (Basic 39)
Site:	West Blinbry Drinkard Unit	MD Reference:	KB: 12' @ 3479.00usft (Basic 39)
Well:	#202 D	North Reference:	Grid
Wellbore:	WB1/Job #1411421	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Basic 39)	Database:	GCR DB

Checked By: _____ Approved By: _____ Date: _____

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APACHE CORP (873)

Eunice

Lea County, NM (Grid North)

West Blinbry Drinkard Unit #202D

VH - Job #320814-K-1071

30-025-41872

G-9-215-37E

2040' FNL + 1410' FEL

Survey: drop Gyro

SDI Survey Report

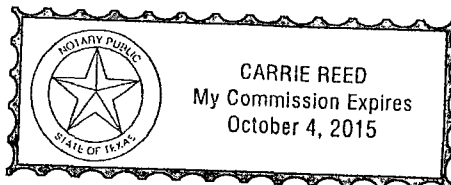
This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

Notarized this date 11th of September, 2014.

[Signature]

Notary Signature
County of Midland
State of Texas



SDI
SDI Survey Report

Company:	APACHE CORP	Local Co-ordinate Reference:	Well West Blinebry Drinkard Unit #202D
Project:	Eunice	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	West Blinebry Drinkard Unit #202D	North Reference:	Grid
Wellbore:	VH - Job #320814-K-1071	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320814-K-1071	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:	West Blinebry Drinkard Unit #202D, Directional					
Well Position	+N/-S	0.0 usft	Northing:	545,701.68 usft	Latitude:	32° 29' 41.298 N
	+E/-W	0.0 usft	Easting:	860,732.58 usft	Longitude:	103° 9' 48.125 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	0.0 usft

Wellbore	VH - Job #320814-K-1071				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/27/2014	7.02	60.42	48,527

Design:		VH - Job #320814-K-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	49.07

Survey Program:		Date 8/31/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
108.0	1,315.0	drop Gyro (VH - Job #320814-K-1071)	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
108.0	0.43	203.61	108.0	-0.4	-0.2	203.61	0.4
232.0	0.64	213.91	232.0	-1.4	-0.7	208.17	1.6
350.0	0.85	259.88	350.0	-2.1	-2.0	223.46	2.9
411.0	0.97	234.23	411.0	-2.5	-2.8	229.05	3.7
535.0	0.92	285.23	535.0	-2.8	-4.6	238.84	5.4
637.0	0.94	283.77	636.9	-2.4	-6.2	249.04	6.7
763.0	1.02	283.26	762.9	-1.9	-8.3	257.24	8.6
889.0	1.07	298.99	888.9	-1.1	-10.5	264.20	10.5
1,014.0	0.87	309.10	1,013.9	0.1	-12.2	270.48	12.2
1,137.0	0.57	301.53	1,136.9	1.0	-13.5	274.30	13.5
1,200.0	0.52	312.42	1,199.9	1.4	-13.9	275.60	14.0

SDI

SDI Survey Report

Company:	APACHE CORP	Local Co-ordinate Reference:	Well West Blinebry Drinkard Unit #202D
Project:	Eunice	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	West Blinebry Drinkard Unit #202D	North Reference:	Grid
Wellbore:	VH - Job #320814-K-1071	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320814-K-1071	Database:	EDM-Regulatory

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	Closure Azimuth (°)	Closure Distance (usft)		
1,262.0	0.47	304.59	1,261.9	1.7	-14.4	276.76	14.5		
1,315.0	0.47	306.88	1,314.9	2.0	-14.7	277.57	14.8		



Scientific Drilling

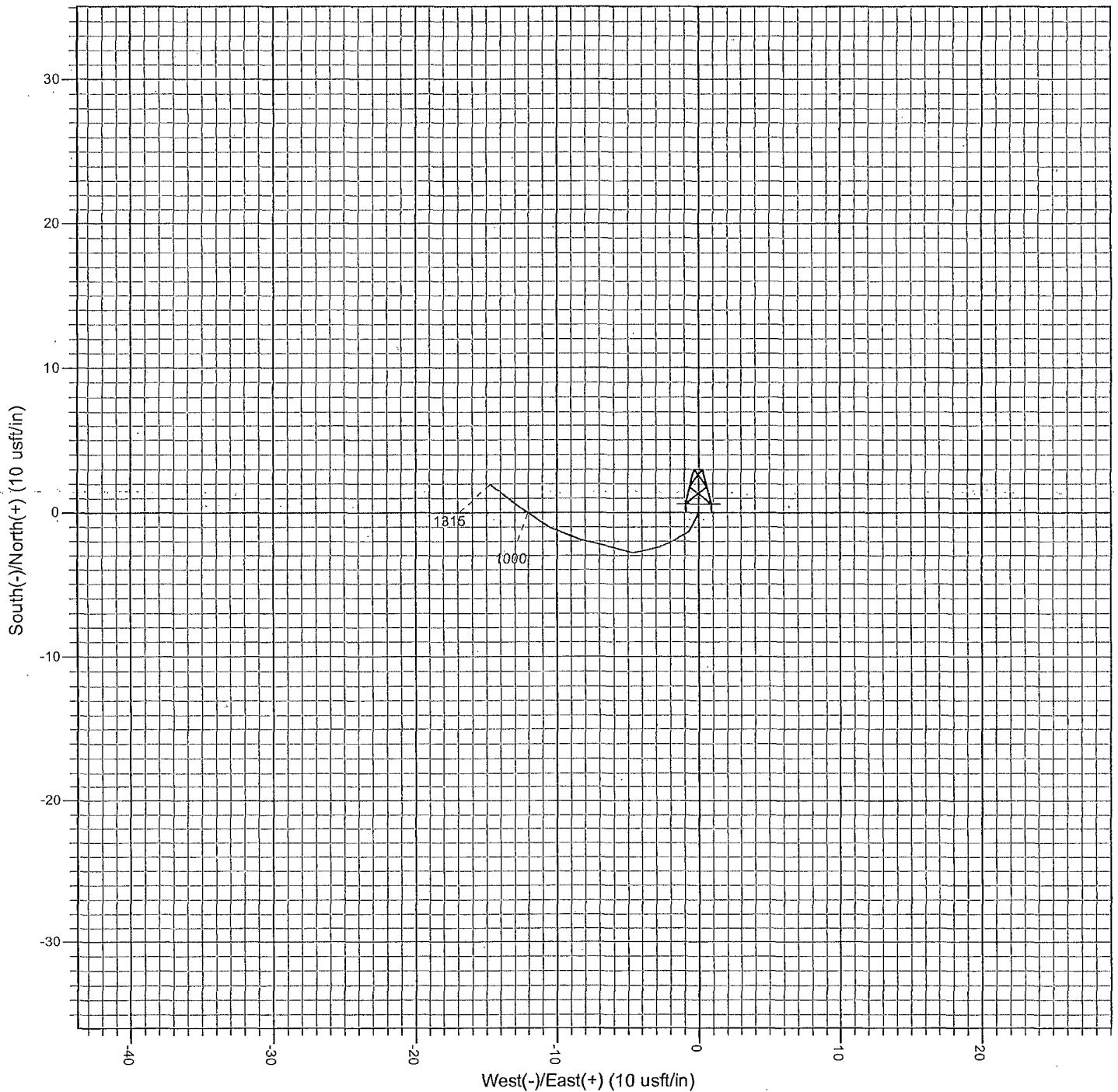
Project: Eunice
Lea County, NM (Grid North)
Well: West Blinbry Drinkard Unit #202D
Wellbore: VH - Job #320814-K-1071
Design: VH - Job #320814-K-1071

WELL DETAILS: West Blinbry Drinkard Unit #202D

Mean Sea Level (System)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	545701.68	860732.58	32° 29' 41.298 N	103° 9' 48.125 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