



February 13, 2015

30-025-41565

Devon Energy Production Co., L. P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

HOBBS OCD

MAY 22 2015

Attn: David Cook

RECEIVED

Re: **Gaucha Unit 13H**

Please find enclosed a copy of the survey from 0' to 5065.42' ran on the above referenced well.

Please note that this survey was ran from 715ft down. It was a drop and we did not get data above 715ft. At a later date, we are supposed to be going back to run from surface to 715ft.

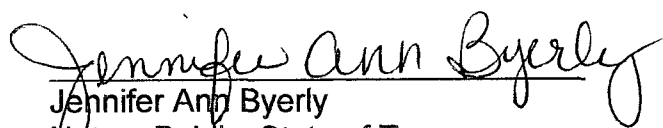
If I can be of any further service please do not hesitate to call me at 800-606-4976.

Sincerely,

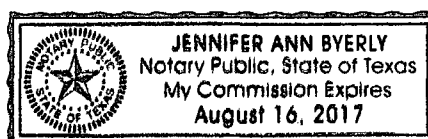

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 13 day of Feb,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

VES Survey International
P.O. Box 261021 Corpus Christi, TX 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com



JUN 02 2015



Company: Devon Energy
Lease/Well: Gaucho Unit /13H
Location: S17 - T 22/S - R 34/E
Rig Name: H&P 391
State/County: New Mexico/Lea
Latitude: 32.38, Longitude: -103.49
GRID North is 0.45 Degrees East of True North
VS-Azi: 0.00 Degrees



HOBBS OCD

MAY 22 2015

RECEIVED

Depth Reference : RKB = 25 FT

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: ves gyro survey.ut

Minimum Curvature Method

Report Date/Time: 2/13/2015 / 09:06

VES Survey International

West Texas

(432) 563-5444

Surveyor: Cody Johnson

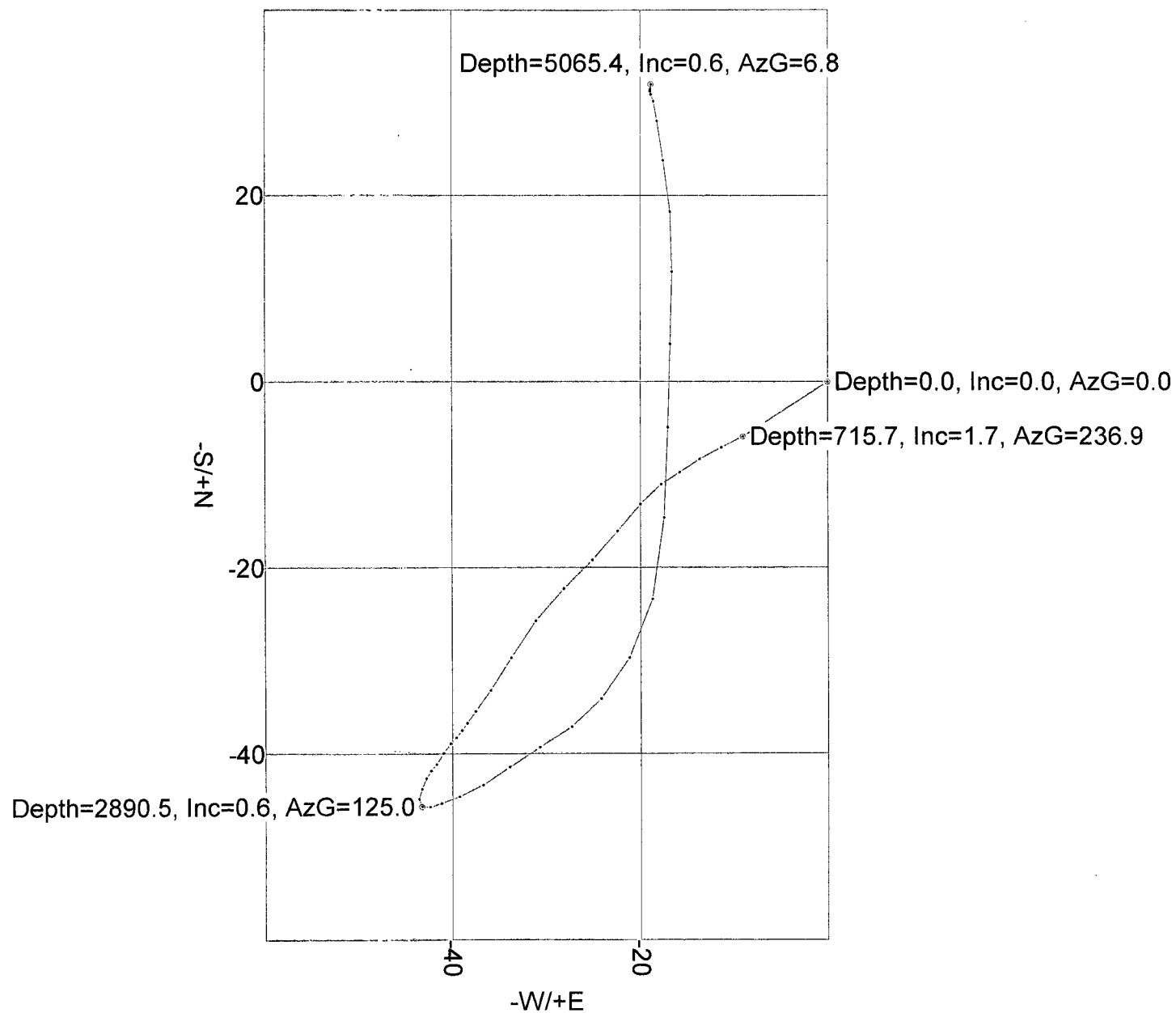
Gaucho Unit 13H / API 30-025-41565

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
715.66	1.73	236.88	715.55	-5.91	-9.06	-5.91	10.82	236.88	0.24
810.22	1.45	251.21	810.07	-7.08	-11.39	-7.08	13.41	238.15	0.51
904.78	1.77	233.03	904.60	-8.34	-13.69	-8.34	16.03	238.65	0.63
999.34	1.36	240.23	999.12	-9.78	-15.83	-9.78	18.61	238.30	0.48
1093.90	1.51	235.06	1093.65	-11.05	-17.83	-11.05	20.98	238.21	0.21
1188.46	2.22	220.08	1188.16	-13.17	-20.03	-13.17	23.97	236.69	0.90
1283.02	2.41	219.57	1282.65	-16.10	-22.48	-16.10	27.65	234.39	0.20
1377.58	2.54	222.22	1377.12	-19.18	-25.15	-19.18	31.63	232.67	0.18
1472.14	2.67	226.76	1471.58	-22.24	-28.16	-22.24	35.89	231.70	0.26
1566.70	2.85	215.52	1566.03	-25.66	-31.13	-25.66	40.35	230.50	0.60
1661.26	2.95	210.55	1660.47	-29.67	-33.73	-29.67	44.93	228.67	0.29
1755.82	2.04	215.25	1754.94	-33.14	-35.94	-33.14	48.89	227.32	0.98
1850.38	1.31	214.71	1849.46	-35.41	-37.53	-35.41	51.60	226.67	0.77
1944.94	0.59	215.17	1944.00	-36.69	-38.43	-36.69	53.13	226.32	0.77
2039.50	0.58	218.58	2038.56	-37.46	-39.01	-37.46	54.08	226.16	0.04
2134.06	0.59	215.04	2133.11	-38.24	-39.58	-38.24	55.04	225.99	0.04
2228.62	0.54	232.28	2227.67	-38.91	-40.21	-38.91	55.95	225.95	0.19
2323.18	1.01	208.41	2322.22	-39.91	-40.96	-39.91	57.19	225.74	0.59

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
2417.74	0.71	217.43	2416.77	-41.10	-41.71	-41.10	58.56	225.42	0.35
2512.30	0.41	226.45	2511.33	-41.80	-42.31	-41.80	59.48	225.35	0.33
2606.86	0.78	205.07	2605.88	-42.62	-42.83	-42.62	60.42	225.14	0.45
2701.42	0.74	199.41	2700.43	-43.77	-43.30	-43.77	61.57	224.69	0.09
2795.98	0.64	191.23	2794.99	-44.87	-43.61	-44.87	62.57	224.18	0.15
2890.54	0.64	124.98	2889.54	-45.69	-43.28	-45.69	62.94	223.45	0.74
2985.10	0.63	58.72	2984.10	-45.72	-42.41	-45.72	62.36	222.84	0.73
3079.66	0.94	80.61	3078.65	-45.33	-41.19	-45.33	61.25	222.27	0.45
3174.22	1.55	63.18	3173.19	-44.62	-39.28	-44.62	59.45	221.36	0.75
3268.78	1.89	63.81	3267.70	-43.35	-36.74	-43.35	56.83	220.28	0.36
3363.34	2.27	48.89	3362.20	-41.43	-33.93	-41.43	53.55	219.31	0.70
3457.90	2.44	63.44	3456.68	-39.30	-30.72	-39.30	49.88	218.01	0.65
3552.46	2.49	50.17	3551.16	-37.09	-27.34	-37.09	46.08	216.40	0.60
3647.02	2.79	41.92	3645.62	-34.06	-24.23	-34.06	41.80	215.43	0.51
3741.58	3.69	28.65	3740.02	-29.68	-21.23	-29.68	36.49	215.58	1.23
3836.14	4.59	15.38	3834.34	-23.36	-18.77	-23.36	29.97	218.78	1.38
3930.70	6.14	2.81	3928.48	-14.66	-17.52	-14.66	22.85	230.08	2.05
4025.26	5.69	1.89	4022.54	-4.92	-17.12	-4.92	17.81	253.96	0.49
4119.82	5.21	1.65	4116.67	4.05	-16.84	4.05	17.32	283.52	0.51
4214.38	4.22	0.87	4210.91	11.82	-16.66	11.82	20.43	305.34	1.04
4308.94	3.60	355.32	4305.25	18.26	-16.85	18.26	24.85	317.30	0.77
4403.50	3.17	349.17	4399.65	23.79	-17.59	23.79	29.59	323.53	0.60
4498.06	2.03	354.17	4494.11	28.02	-18.25	28.02	33.44	326.93	1.23
4592.62	0.61	336.49	4588.64	30.15	-18.62	30.15	35.43	328.30	1.54
4687.18	0.34	345.17	4683.20	30.88	-18.89	30.88	36.20	328.55	0.29
4781.74	0.08	353.85	4777.76	31.22	-18.97	31.22	36.53	328.72	0.28
4876.30	0.10	9.39	4872.32	31.37	-18.96	31.37	36.65	328.84	0.04
4970.86	0.04	7.70	4966.88	31.48	-18.95	31.48	36.74	328.96	0.07
5065.42	0.57	6.80	5061.44	31.97	-18.89	31.97	37.13	329.43	0.56



VES Survey International
West Texas
(432) 563-5444
Surveyor: Cody Johnson
Gaucho Unit 13H / API 30-025-41565



VES Survey Date: 2/2/2015

DEVON ENERGY

Wildcat (Lea County, NM)
Lea County, NM (Grid North)
Gaucho Unit #13H
VH - Job #320115-KW-0104

Survey: Gyro

Regulatory Report (Grid North)

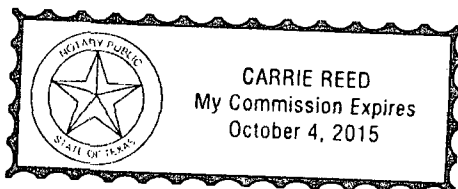
This survey is correct to the best of my knowledge and is supported by actual field data.

Janis Hathorn

Notarized this date 11th of February, 2015.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Regulatory Report (Grid North)

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Gaucho Unit #13H
Project:	Wildcat (Lea County, NM)	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Gaucha Unit #13H	North Reference:	Grid
Wellbore:	VH - Job #320115-KW-0104	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #320115-KW-0104	Database:	MID - Regulatory

Project:	Wildcat (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:	Lea County, NM (Grid North)		
Site Position:		Northing:	419,798.73 usft
From:	Lat/Long	Easting:	689,831.11 usft
Position Uncertainty:	0.0 usft	Slot Radius:	0"
		Latitude:	32° 9' 9.565 N
		Longitude:	103° 43' 11.824 W
		Grid Convergence:	0.33 °

Well:	Gaucho Unit #13H - Horizontal		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 23' 3.009 N
		Longitude:	103° 29' 7.465 W
		Ground Level:	0.0 usft

Wellbore:	VH - Job #320115-KW-0104		
Magnetics	Model Name	Sample Date	Declination
	BGGM2014	1/30/2015	7.28
			Dip Angle
			60.25
			Field Strength
			48,338

Design:	VH - Job #320115-KW-0104		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			358.69

Survey Program	Date 2/8/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	3,574.0	Gyro (VH - Job #320115-KW-0104)	Keeper
			Description
			Keeper Gyro

Survey	MD	Inc	Azi	TVD	N/S	E/W	Closure Azimuth	Closure Distance
	(usft)	(°)	(grid_north_azim)	(usft)	(usft)	(usft)	(°)	(usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0
	100.0	0.49	261.00	100.0	-0.1	-0.4	261.00	0.4
	200.0	0.79	243.40	200.0	-0.4	-1.5	253.15	1.5
	300.0	1.18	256.03	300.0	-1.0	-3.1	252.00	3.2
	400.0	0.97	259.11	400.0	-1.4	-4.9	253.99	5.1
	500.0	1.33	251.90	499.9	-1.9	-6.8	254.26	7.1
	600.0	1.36	238.03	599.9	-2.9	-9.0	251.95	9.4
	700.0	1.20	236.10	699.9	-4.1	-10.8	249.12	11.6
	800.0	1.24	234.99	799.9	-5.3	-12.6	247.02	13.7
	900.0	1.72	231.02	899.8	-6.9	-14.6	244.76	16.2
	1,000.0	1.81	224.00	999.8	-9.0	-16.9	242.02	19.1
	1,100.0	1.97	221.43	1,099.7	-11.4	-19.1	239.20	22.3

Regulatory Report (Grid North)

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well Gaucho Unit #13H
Project:	Wildcat (Lea County, NM)	TVD Reference:	Mean Sea Level (System)
Site:	Lea County, NM (Grid North)	MD Reference:	Mean Sea Level (System)
Well:	Gaucho Unit #13H	North Reference:	Grid
Wellbore:	VH- Job #320115-KW-0104	Survey Calculation Method:	Minimum Curvature
Design:	VH- Job #320115-KW-0104	Database:	MID-Regulatory

Survey								
MD (usft)	Inc (°)	Azi (grid north azimuth)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,200.0	2.06	219.02	1,199.7	-14.1	-21.4	236.64	25.6	
1,300.0	2.04	219.94	1,299.6	-16.9	-23.7	234.56	29.1	
1,400.0	2.25	216.94	1,399.5	-19.8	-26.0	232.73	32.7	
1,500.0	2.30	218.04	1,499.5	-22.9	-28.4	231.09	36.5	
1,600.0	2.19	216.84	1,599.4	-26.0	-30.8	229.78	40.3	
1,700.0	0.84	214.34	1,699.3	-28.2	-32.4	228.95	42.9	
1,800.0	0.72	194.32	1,799.3	-29.4	-32.9	228.25	44.1	
1,900.0	0.69	195.96	1,899.3	-30.6	-33.2	227.39	45.2	
2,000.0	0.86	210.22	1,999.3	-31.8	-33.8	226.73	46.4	
2,100.0	0.50	194.55	2,099.3	-32.9	-34.3	226.19	47.5	
2,200.0	0.41	227.86	2,199.3	-33.5	-34.7	225.93	48.2	
2,300.0	0.56	224.05	2,299.3	-34.1	-35.3	225.93	49.1	
2,400.0	0.39	215.95	2,399.3	-34.8	-35.8	225.84	49.9	
2,500.0	0.46	213.09	2,499.3	-35.4	-36.2	225.68	50.6	
2,600.0	0.29	195.80	2,599.3	-35.9	-36.5	225.44	51.2	
2,700.0	0.21	185.22	2,699.3	-36.4	-36.6	225.17	51.6	
2,800.0	0.25	78.34	2,799.3	-36.5	-36.4	224.90	51.6	
2,900.0	0.90	67.49	2,899.3	-36.2	-35.5	224.43	50.6	
3,000.0	1.37	65.09	2,999.3	-35.4	-33.6	223.57	48.8	
3,100.0	1.54	65.86	3,099.2	-34.3	-31.3	222.40	46.5	
3,200.0	1.82	70.31	3,199.2	-33.2	-28.6	220.73	43.8	
3,300.0	2.07	71.99	3,299.1	-32.1	-25.4	218.32	41.0	
3,400.0	2.52	76.11	3,399.0	-31.0	-21.5	214.76	37.8	
3,500.0	2.66	67.60	3,498.9	-29.6	-17.3	210.23	34.3	
3,574.0	2.92	69.67	3,572.9	-28.3	-13.9	206.16	31.6	

Checked By: _____	Approved By: _____	Date: _____
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Scientific Drilling

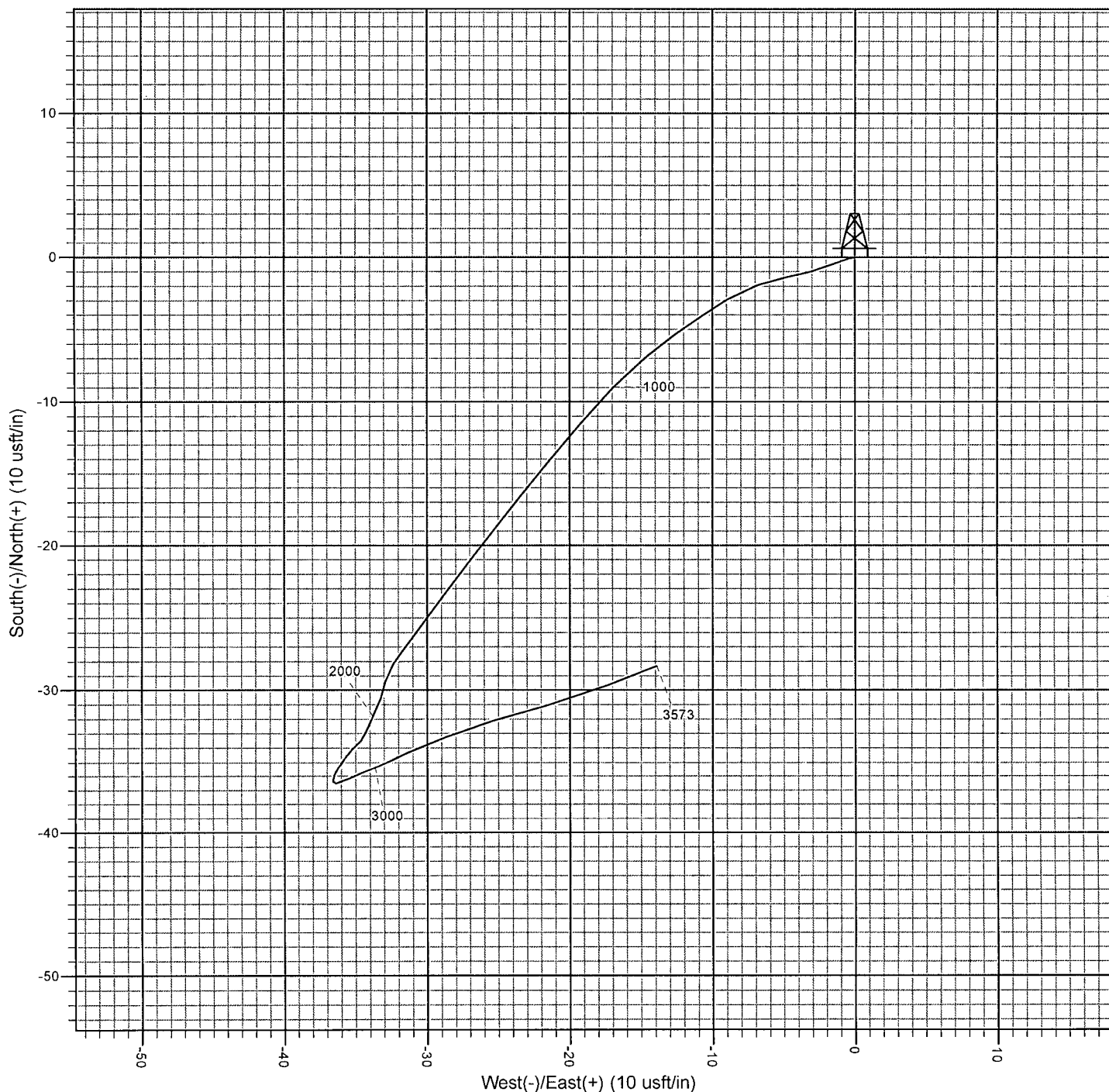
Project: Wildcat (Lea County, NM)
Lea County, NM (Grid North)
Well: Gaucho Unit #13H
Wellbore: VH - Job #320115-KW-0104
Design: VH - Job #320115-KW-0104

WELL DETAILS: Gaucho Unit #13H

Mean Sea Level (System)

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	504513.06	761754.96	32° 23' 3.009 N	103° 29' 7.465 W	



PROJECT DETAILS: Wildcat (Lea County, NM)	SITE DETAILS: Lea County, NM (Grid North)
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 9' 9.565 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 103° 43' 11.824 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.0
Zone: New Mexico East 3001	Convergence: 0.33
System Datum: Mean Sea Level	Local North: Grid



Directional Survey

Sub-Division DELAWARE BASIN	County LEA	Field Name OJO CHISO	Region DELAWARE BASIN EAST	State/Province NM
Surface Legal Location Sec. 20 T22S R34E	API/UWI 3002541565	Latitude (°) 32° 23' 3.009" N	Longitude (°) 103° 29' 7.465" W	Ground Elev. M. 3,466.00
				Orig KB Elev (ft) 3,491.00
				Tubing Head Elevation (ft)

Wellbores				
Wellbore Name OH	Parent Wellbore OH	SAP Well ID 37826	Vertical Section Direction (°) 358.69	

Kick Offs & Key Depths				
Date 2/9/2015	Type Kick Off	Top Depth (ftKB) 9,804.0		

Actual Deviation Survey VES VAUGHN, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey
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Deviation Survey					
Date 2/3/2015	Description VES VAUGHN				
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EWTie In (ft)

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
2/3/2015	100.00	0.49	261.00	100.00	0.06	-0.07	-0.42	0.49	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	200.00	0.79	243.40	199.99	-0.41	-0.44	-1.46	0.36	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	300.00	1.18	256.03	299.98	-0.93	-1.00	-3.08	0.44	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	400.00	0.97	259.11	399.96	-1.30	-1.41	-4.91	0.22	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	500.00	1.33	251.90	499.94	-1.77	-1.93	-6.84	0.39	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	600.00	1.36	238.03	599.91	-2.71	-2.92	-8.95	0.33	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	715.66	1.73	236.88	715.53	-4.33	-4.60	-11.58	0.32	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	810.22	1.45	251.21	810.05	-5.44	-5.76	-13.91	0.51	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	904.78	1.77	233.03	904.58	-6.65	-7.03	-16.21	0.63	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	999.34	1.36	240.23	999.10	-8.04	-8.46	-18.35	0.48	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,093.90	1.51	235.06	1,093.63	-9.27	-9.73	-20.34	0.21	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,188.46	2.22	220.08	1,188.14	-11.33	-11.85	-22.54	0.90	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,283.02	2.41	219.57	1,282.62	-14.21	-14.78	-24.99	0.20	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,377.58	2.54	222.22	1,377.10	-17.23	-17.87	-27.66	0.18	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,472.14	2.67	226.76	1,471.56	-20.22	-20.93	-30.67	0.26	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,566.70	2.85	215.52	1,566.01	-23.57	-24.35	-33.65	0.60	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,661.26	2.95	210.55	1,660.45	-27.52	-28.36	-36.25	0.29	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,755.82	2.04	215.25	1,754.92	-30.94	-31.83	-38.46	0.99	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,850.38	1.31	214.71	1,849.44	-33.17	-34.09	-40.04	0.77	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	1,944.94	0.59	215.17	1,943.98	-34.43	-35.38	-40.94	0.76	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,039.50	0.58	218.58	2,038.54	-35.19	-36.15	-41.52	0.04	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,134.06	0.59	215.04	2,133.09	-35.95	-36.92	-42.10	0.04	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,228.62	0.54	232.28	2,227.65	-36.61	-37.59	-42.73	0.19	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,323.18	1.01	208.41	2,322.20	-37.60	-38.60	-43.48	0.59	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,417.74	0.71	217.43	2,416.75	-38.78	-39.80	-44.23	0.35	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,512.30	0.41	226.45	2,511.31	-39.46	-40.50	-44.83	0.33	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,606.86	0.78	205.07	2,605.86	-40.26	-41.31	-45.35	0.45	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,701.42	0.74	199.41	2,700.41	-41.41	-42.47	-45.82	0.09	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,795.98	0.64	191.23	2,794.97	-42.50	-43.56	-46.13	0.15	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,890.54	0.64	124.98	2,889.52	-43.33	-44.39	-45.80	0.74	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	2,985.10	0.63	58.72	2,984.08	-43.38	-44.42	-44.92	0.73	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,079.66	0.94	80.61	3,078.63	-43.01	-44.02	-43.71	0.45	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,174.22	1.55	63.18	3,173.16	-42.35	-43.32	-41.81	0.75	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,268.78	1.89	63.81	3,267.68	-41.14	-42.05	-39.27	0.36	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,363.34	2.27	48.89	3,362.18	-39.29	-40.13	-36.46	0.70	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,457.90	2.44	63.44	3,456.66	-37.23	-38.00	-33.24	0.66	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,552.46	2.49	50.17	3,551.13	-35.09	-35.79	-29.87	0.60	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,647.02	2.79	41.92	3,645.59	-32.14	-32.76	-26.75	0.51	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,741.58	3.69	28.65	3,740.00	-27.83	-28.38	-23.76	1.23	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,836.14	4.59	15.38	3,834.32	-21.56	-22.06	-21.29	1.38	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	3,930.70	6.14	2.81	3,928.46	-12.90	-13.36	-20.04	2.05	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,025.26	5.69	1.89	4,022.52	-3.17	-3.62	-19.64	0.49	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,119.82	5.21	1.65	4,116.65	5.80	5.36	-19.36	0.51	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,214.38	4.22	0.87	4,210.89	-13.56	-13.13	-19.18	1.05	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,308.94	3.60	355.32	4,305.23	20.00	19.56	-19.37	0.77	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,403.50	3.17	349.17	4,399.63	25.54	25.09	-20.11	0.59	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,498.06	2.03	354.17	4,494.09	29.79	29.32	-20.77	1.23	GYRO	VAUHGN ENERGY SERVICES



Directional Survey

Sub-Division DELAWARE BASIN	County LEA	Field Name OJO CHISO	Region DELAWARE BASIN EAST	State/Province NM
Surface Legal Location Sec. 20 T22S R34E	API/UWI 3002541565	Latitude (") 32° 23' 3.009" N	Longitude (") 103° 29' 7.465" W	Ground Elev M. 3,466.00
				Orig KB Elev (ft) 3,491.00
				Tubing Head Elevation (ft)

Survey Data										
Date	MD (ftKB)	Incl (")	Azm (")	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS ("/100ft)	Survey Tool	Survey Company
2/3/2015	4,592.62	0.61	336.49	4,588.62	31.93	31.45	21.14	1.54	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,687.18	0.34	345.17	4,683.18	32.67	32.19	21.41	0.29	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,781.74	0.08	353.85	4,777.74	33.01	32.52	21.49	0.28	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,876.30	0.10	9.39	4,872.30	33.15	32.67	21.48	0.03	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	4,970.86	0.04	7.70	4,966.86	33.27	32.78	21.47	0.06	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	5,065.42	0.57	6.80	5,061.41	33.76	33.28	21.41	0.56	GYRO	VAUHGN ENERGY SERVICES
2/3/2015	5,199.00	0.31	27.74	5,194.99	34.74	34.26	21.16	0.23	MWD	WEATHERFORD
2/3/2015	5,230.00	0.31	34.05	5,225.99	34.88	34.41	21.07	0.11	MWD	WEATHERFORD
2/3/2015	5,325.00	0.50	15.59	5,320.99	35.49	35.02	20.82	0.24	MWD	WEATHERFORD
2/3/2015	5,419.00	0.44	9.98	5,414.98	36.23	35.77	20.65	0.08	MWD	WEATHERFORD
2/3/2015	5,514.00	0.31	319.29	5,509.98	36.79	36.32	20.75	0.36	MWD	WEATHERFORD
2/3/2015	5,608.00	0.25	316.11	5,603.98	37.14	36.66	21.06	0.07	MWD	WEATHERFORD
2/3/2015	5,703.00	0.28	310.46	5,698.98	37.44	36.96	21.38	0.04	MWD	WEATHERFORD
2/3/2015	5,797.00	0.22	250.97	5,792.98	37.54	37.05	21.72	0.27	MWD	WEATHERFORD
2/3/2015	5,892.00	0.21	213.38	5,887.98	37.34	36.85	21.99	0.15	MWD	WEATHERFORD
2/3/2015	5,987.00	0.36	227.14	5,982.98	37.00	36.50	22.31	0.17	MWD	WEATHERFORD
2/3/2015	6,082.00	0.49	230.98	6,077.98	36.55	36.04	22.84	0.14	MWD	WEATHERFORD
2/3/2015	6,176.00	0.49	229.65	6,171.97	36.06	35.53	23.46	0.01	MWD	WEATHERFORD
2/3/2015	6,271.00	0.56	257.24	6,266.97	35.71	35.16	24.22	0.27	MWD	WEATHERFORD
2/3/2015	6,365.00	0.58	246.02	6,360.96	35.43	34.87	25.10	0.12	MWD	WEATHERFORD
2/3/2015	6,460.00	0.58	258.73	6,455.96	35.16	34.58	26.02	0.14	MWD	WEATHERFORD
2/3/2015	6,555.00	0.56	253.20	6,550.95	34.96	34.35	26.93	0.06	MWD	WEATHERFORD
2/3/2015	6,649.00	0.70	262.59	6,644.95	34.77	34.14	27.94	0.18	MWD	WEATHERFORD
2/3/2015	6,744.00	0.80	250.91	6,739.94	34.51	33.85	29.14	0.19	MWD	WEATHERFORD
2/3/2015	6,839.00	0.55	202.26	6,834.93	33.89	33.21	29.94	0.63	MWD	WEATHERFORD
2/3/2015	6,933.00	0.40	117.23	6,928.93	33.32	32.65	29.82	0.69	MWD	WEATHERFORD
2/3/2015	7,028.00	0.58	80.21	7,023.93	33.23	32.58	29.05	0.37	MWD	WEATHERFORD
2/3/2015	7,123.00	0.55	78.59	7,118.92	33.38	32.75	28.13	0.04	MWD	WEATHERFORD
2/3/2015	7,217.00	0.38	85.84	7,212.92	33.48	32.86	27.38	0.19	MWD	WEATHERFORD
2/3/2015	7,312.00	0.16	55.15	7,307.92	33.57	32.96	26.96	0.27	MWD	WEATHERFORD
2/3/2015	7,406.00	0.07	246.78	7,401.92	33.62	33.01	26.90	0.24	MWD	WEATHERFORD
2/3/2015	7,501.00	0.16	195.16	7,496.92	33.47	32.86	26.99	0.14	MWD	WEATHERFORD
2/3/2015	7,595.00	0.16	321.98	7,590.92	33.45	32.84	27.10	0.30	MWD	WEATHERFORD
2/3/2015	7,690.00	0.22	244.97	7,685.92	33.48	32.86	27.35	0.25	MWD	WEATHERFORD
2/3/2015	7,784.00	0.22	282.36	7,779.92	33.45	32.83	27.69	0.15	MWD	WEATHERFORD
2/3/2015	7,879.00	0.36	298.54	7,874.92	33.64	33.01	28.13	0.17	MWD	WEATHERFORD
2/3/2015	7,974.00	0.41	312.81	7,969.91	34.03	33.38	28.64	0.11	MWD	WEATHERFORD
2/3/2015	8,068.00	0.51	293.57	8,063.91	34.44	33.78	29.27	0.19	MWD	WEATHERFORD
2/3/2015	8,163.00	0.35	104.70	8,158.91	34.54	33.87	29.38	0.90	MWD	WEATHERFORD
2/3/2015	8,258.00	0.25	118.36	8,253.91	34.35	33.70	28.92	0.13	MWD	WEATHERFORD
2/3/2015	8,352.00	0.22	87.30	8,347.91	34.26	33.61	28.56	0.14	MWD	WEATHERFORD
2/3/2015	8,447.00	0.35	85.10	8,442.91	34.28	33.64	28.08	0.14	MWD	WEATHERFORD
2/3/2015	8,541.00	0.35	55.49	8,536.91	34.45	33.83	27.56	0.19	MWD	WEATHERFORD
2/3/2015	8,636.00	0.71	30.36	8,631.90	35.11	34.50	27.03	0.44	MWD	WEATHERFORD
2/3/2015	8,731.00	0.91	50.08	8,726.89	36.08	35.50	26.15	0.36	MWD	WEATHERFORD
2/3/2015	8,825.00	1.27	49.58	8,820.88	37.21	36.65	24.78	0.38	MWD	WEATHERFORD
2/3/2015	8,920.00	0.22	56.36	8,915.87	37.97	37.43	23.83	1.11	MWD	WEATHERFORD
2/3/2015	9,015.00	0.51	122.85	9,010.86	37.83	37.31	23.32	0.49	MWD	WEATHERFORD
2/3/2015	9,110.00	1.24	152.39	9,105.85	36.67	36.17	22.49	0.88	MWD	WEATHERFORD
2/3/2015	9,204.00	0.35	116.82	9,199.84	35.62	35.14	21.76	1.04	MWD	WEATHERFORD
2/3/2015	9,299.00	0.20	50.99	9,294.84	35.59	35.11	21.38	0.34	MWD	WEATHERFORD
2/3/2015	9,393.00	0.44	283.12	9,388.84	35.78	35.29	21.60	0.62	MWD	WEATHERFORD
2/3/2015	9,487.00	0.84	265.05	9,482.84	35.82	35.32	22.64	0.47	MWD	WEATHERFORD
2/3/2015	9,582.00	1.17	268.85	9,577.82	35.78	35.24	24.30	0.35	MWD	WEATHERFORD
2/3/2015	9,677.00	0.88	254.27	9,672.81	35.60	35.02	25.97	0.41	MWD	WEATHERFORD
2/3/2015	9,740.00	0.98	254.57	9,735.80	35.35	34.74	26.96	0.16	MWD	WEATHERFORD
2/3/2015	9,772.00	1.07	261.17	9,767.79	35.25	34.63	27.52	0.46	MWD	WEATHERFORD
2/3/2015	9,791.80	0.97	283.31	9,787.59	35.26	34.64	27.86	2.04	MWD	WEATHERFORD



Directional Survey

Sub-Division DELAWARE BASIN	County LEA	Field Name OJO CHISO	Region DELAWARE BASIN EAST	State/Province NM
Surface Legal Location Sec. 20 T22S R34E	API/UWI 3002541565	Latitude (°) 32° 23' 3.009" N	Longitude (°) 103° 29' 7.465" W	Ground Elev M. 3,466.00
				Orig KB Elev (ft) 3,491.00
				Tubing Head Elevation (ft)

Survey Data										
Date	MD (ftKB)	Incl. (°)	Azm. (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
2/3/2015	9,803.00	1.35	310.36	9,798.79	35.38	34.74	-28.06	5.86	MWD	WEATHERFORD
2/3/2015	9,835.00	2.58	337.23	9,830.77	36.30	35.65	-28.62	4.70	MWD	WEATHERFORD
2/3/2015	9,867.00	3.62	342.05	9,862.72	37.94	37.28	-29.21	3.35	MWD	WEATHERFORD
2/3/2015	9,898.00	5.40	347.85	9,893.62	40.31	39.63	-29.82	5.92	MWD	WEATHERFORD
2/3/2015	9,930.00	7.71	350.83	9,925.41	43.91	43.23	-30.48	7.29	MWD	WEATHERFORD
2/3/2015	9,961.00	10.28	351.39	9,956.03	48.72	48.01	-31.23	8.30	MWD	WEATHERFORD
2/3/2015	9,993.00	13.71	351.15	9,987.33	55.31	54.59	-32.24	10.72	MWD	WEATHERFORD
2/3/2015	10,024.00	16.77	352.86	10,017.23	63.40	62.66	-33.36	9.98	MWD	WEATHERFORD
2/3/2015	10,056.00	19.41	357.15	10,047.65	73.31	72.55	-34.20	9.24	MWD	WEATHERFORD
2/3/2015	10,087.00	22.09	359.77	10,076.64	84.29	83.53	-34.48	9.15	MWD	WEATHERFORD
2/3/2015	10,119.00	24.90	359.81	10,105.98	97.05	96.28	-34.52	8.78	MWD	WEATHERFORD
2/3/2015	10,151.00	27.27	359.60	10,134.72	111.11	110.35	-34.60	7.41	MWD	WEATHERFORD
2/3/2015	10,182.00	29.93	359.28	10,161.93	125.95	125.19	-34.74	8.59	MWD	WEATHERFORD
2/3/2015	10,213.00	33.01	359.72	10,188.37	142.13	141.37	-34.88	9.96	MWD	WEATHERFORD
2/3/2015	10,245.00	36.45	0.33	10,214.67	160.35	159.60	-34.87	10.80	MWD	WEATHERFORD
2/3/2015	10,276.00	40.63	0.95	10,238.91	179.65	178.91	-34.65	13.54	MWD	WEATHERFORD
2/3/2015	10,308.00	44.31	1.81	10,262.51	201.23	200.50	-34.12	11.64	MWD	WEATHERFORD
2/3/2015	10,339.00	47.67	2.57	10,284.04	223.48	222.78	-33.27	10.98	MWD	WEATHERFORD
2/3/2015	10,371.00	51.52	2.70	10,304.78	247.79	247.11	-32.15	12.04	MWD	WEATHERFORD
2/3/2015	10,402.00	55.92	2.64	10,323.12	272.71	272.07	-30.98	14.19	MWD	WEATHERFORD
2/3/2015	10,434.00	59.74	2.93	10,340.16	299.72	299.12	-29.67	11.96	MWD	WEATHERFORD
2/3/2015	10,466.00	64.10	2.84	10,355.21	327.87	327.31	-28.24	13.63	MWD	WEATHERFORD
2/3/2015	10,497.00	68.52	2.70	10,367.67	356.18	355.66	-26.87	14.26	MWD	WEATHERFORD
2/3/2015	10,529.00	71.80	2.24	10,378.53	386.21	385.73	-25.58	10.34	MWD	WEATHERFORD
2/3/2015	10,560.00	76.38	1.35	10,387.02	415.97	415.52	-24.65	15.03	MWD	WEATHERFORD
2/3/2015	10,592.00	79.81	0.54	10,393.62	447.26	446.82	-24.13	11.00	MWD	WEATHERFORD
2/3/2015	10,623.00	84.33	0.10	10,397.90	477.94	477.52	-23.96	14.65	MWD	WEATHERFORD
2/3/2015	10,643.00	86.22	359.25	10,399.55	497.87	497.45	-24.07	10.36	MWD	WEATHERFORD
2/3/2015	10,738.00	89.44	358.60	10,403.14	592.78	592.35	-25.86	3.46	MWD	WEATHERFORD
2/3/2015	10,833.00	89.09	359.07	10,404.36	687.78	687.32	-27.79	0.62	MWD	WEATHERFORD
2/3/2015	10,927.00	90.28	359.83	10,404.88	781.76	781.31	-28.69	1.50	MWD	WEATHERFORD
2/3/2015	11,022.00	89.93	359.91	10,404.70	876.74	876.31	-28.91	0.38	MWD	WEATHERFORD
2/3/2015	11,117.00	89.30	0.21	10,405.34	971.71	971.31	-28.81	0.73	MWD	WEATHERFORD
2/3/2015	11,211.00	88.11	0.24	10,407.47	1,065.65	1,065.28	-28.44	1.27	MWD	WEATHERFORD
2/3/2015	11,305.00	88.46	359.47	10,410.28	1,159.59	1,159.24	-28.67	0.90	MWD	WEATHERFORD
2/3/2015	11,400.00	89.37	358.51	10,412.08	1,254.57	1,254.21	-30.35	1.39	MWD	WEATHERFORD
2/3/2015	11,495.00	90.56	357.60	10,412.14	1,349.56	1,349.15	-33.57	1.58	MWD	WEATHERFORD
2/3/2015	11,589.00	91.40	356.77	10,410.53	1,443.52	1,443.02	-38.19	1.26	MWD	WEATHERFORD
2/3/2015	11,684.00	90.84	357.22	10,408.67	1,538.45	1,537.87	-43.17	0.76	MWD	WEATHERFORD
2/3/2015	11,779.00	89.72	356.88	10,408.21	1,633.41	1,632.74	-48.06	1.23	MWD	WEATHERFORD
2/3/2015	11,873.00	90.63	357.36	10,407.92	1,727.38	1,726.62	-52.78	1.09	MWD	WEATHERFORD
2/3/2015	11,968.00	90.77	356.96	10,406.76	1,822.34	1,821.50	-57.49	0.45	MWD	WEATHERFORD
2/3/2015	12,063.00	91.75	357.64	10,404.67	1,917.28	1,916.37	-61.96	1.26	MWD	WEATHERFORD
2/3/2015	12,158.00	90.84	357.78	10,402.52	2,012.24	2,011.27	-65.76	0.97	MWD	WEATHERFORD
2/15/2015	12,252.00	90.49	358.27	10,401.43	2,106.23	2,105.20	-68.99	0.64	MWD	WEATHERFORD
2/15/2015	12,346.00	90.98	358.84	10,400.23	2,200.22	2,199.16	-71.36	0.80	MWD	WEATHERFORD
2/15/2015	12,441.00	91.82	0.02	10,397.91	2,295.18	2,294.13	-72.31	1.52	MWD	WEATHERFORD
2/15/2015	12,536.00	91.12	359.93	10,395.47	2,390.13	2,389.10	-72.35	0.74	MWD	WEATHERFORD
2/15/2015	12,630.00	91.68	0.04	10,393.17	2,484.07	2,483.07	-72.38	0.61	MWD	WEATHERFORD
2/15/2015	12,725.00	93.22	358.73	10,389.11	2,578.98	2,577.97	-73.39	2.13	MWD	WEATHERFORD
2/15/2015	12,820.00	93.15	358.74	10,383.83	2,673.83	2,672.80	-75.49	0.07	MWD	WEATHERFORD
2/15/2015	12,914.00	93.15	358.75	10,378.67	2,767.69	2,766.64	-77.54	0.01	MWD	WEATHERFORD
2/15/2015	13,009.00	92.17	359.72	10,374.26	2,862.58	2,861.52	-78.81	1.45	MWD	WEATHERFORD
2/15/2015	13,104.00	91.47	359.45	10,371.24	2,957.52	2,956.47	-79.50	0.79	MWD	WEATHERFORD
2/15/2015	13,198.00	91.26	359.53	10,369.00	3,051.48	3,050.44	-80.33	0.24	MWD	WEATHERFORD
2/15/2015	13,293.00	90.98	359.77	10,367.15	3,146.45	3,145.42	-80.91	0.39	MWD	WEATHERFORD
2/15/2015	13,387.00	90.91	0.64	10,365.60	3,240.40	3,239.41	-80.58	0.93	MWD	WEATHERFORD
2/15/2015	13,481.00	90.63	0.87	10,364.33	3,334.33	3,333.39	-79.34	0.39	MWD	WEATHERFORD



Directional Survey

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Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (%/100ft)	Survey Tool	Survey Company
2/15/2015	13,576.00	90.00	359.83	10,363.81	3,429.29	3,428.39	-78.76	1.28	MWD	WEATHERFORD
2/15/2015	13,671.00	90.77	359.17	10,363.17	3,524.28	3,523.38	-79.59	1.07	MWD	WEATHERFORD
2/15/2015	13,765.00	89.86	358.80	10,362.65	3,618.27	3,617.36	-81.25	1.05	MWD	WEATHERFORD
2/15/2015	13,860.00	90.35	358.48	10,362.48	3,713.27	3,712.33	-83.51	0.62	MWD	WEATHERFORD
2/15/2015	13,955.00	91.33	358.02	10,361.09	3,808.26	3,807.28	-86.41	1.14	MWD	WEATHERFORD
2/15/2015	14,049.00	89.23	357.68	10,360.63	3,902.24	3,901.21	-89.94	2.26	MWD	WEATHERFORD
2/15/2015	14,144.00	90.56	357.03	10,360.80	3,997.21	3,996.10	-94.32	1.56	MWD	WEATHERFORD
2/15/2015	14,239.00	92.59	356.77	10,358.19	4,092.13	4,090.92	-99.45	2.15	MWD	WEATHERFORD
2/15/2015	14,333.00	92.45	356.84	10,354.06	4,185.98	4,184.69	-104.69	0.17	MWD	WEATHERFORD
2/15/2015	14,428.00	90.98	357.00	10,351.22	4,280.89	4,279.50	-109.79	1.56	MWD	WEATHERFORD
2/15/2015	14,523.00	89.79	356.47	10,350.58	4,375.83	4,374.34	-115.20	1.37	MWD	WEATHERFORD
2/15/2015	14,617.00	89.44	356.06	10,351.21	4,469.75	4,468.14	-121.32	0.57	MWD	WEATHERFORD
2/15/2015	14,712.00	90.77	356.84	10,351.03	4,564.67	4,562.96	-127.21	1.62	MWD	WEATHERFORD
2/15/2015	14,807.00	91.89	357.32	10,348.83	4,659.61	4,657.81	-132.04	1.28	MWD	WEATHERFORD
2/15/2015	14,901.00	91.12	358.05	10,346.36	4,753.56	4,751.70	-135.84	1.13	MWD	WEATHERFORD
2/15/2015	14,996.00	91.33	358.42	10,344.33	4,848.53	4,846.63	-138.77	0.45	MWD	WEATHERFORD
2/15/2015	15,091.00	92.38	358.79	10,341.25	4,943.48	4,941.55	-141.08	1.17	MWD	WEATHERFORD
2/15/2015	15,185.00	92.45	359.46	10,337.29	5,037.40	5,035.45	-142.51	0.72	MWD	WEATHERFORD
2/15/2015	15,280.00	92.17	359.17	10,333.46	5,132.31	5,130.37	-143.65	0.42	MWD	WEATHERFORD
2/15/2015	15,311.00	92.10	359.29	10,332.31	5,163.29	5,161.35	-144.06	0.45	MWD	WEATHERFORD
2/15/2015	15,378.00	92.10	359.29	10,329.85	5,230.24	5,228.30	-144.89	0.00	BIT	WEATHERFORD