

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs
HOBBS OCD

JAN 08 2014

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter a
abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.
State of NM (SL), Fee & NMNM077054
6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE – Other instructions on page 2.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
MANZANO, LLC

3a. Address
P.O. BOX 2107
ROSWELL, NM 88202-2107

3b. Phone No. (include area code)
575-623-1996

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
@ SURFACE: 1547' FSL & 2280' FEL OF SECTION 36-T19S-R32E
@ BOTTOM HOLE: 330' FSL & 22800' FEL OF SECTION 1-T20S-R32E

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.
GAS NINETIES COM #1H

9. API Well No.
30-025-40827

10. Field and Pool or Exploratory Area
GEM, BONE SPRINGS

11. County or Parish, State
LEA, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Manzano hereby requests to change the approved directional drilling plan as well as the approved casing program for this well. The approved directional plan provided for a pilot hole to be directionally drilled from 3010' to 10,270'MD/10,100'TVD, then plugging back to 9200', then drilling a curve and and lateral to 15003'MD/9955'TVD. Manzano now proposes to alter the approved directional plan and the associated casing program as follows (also see attached Well Plan 2 Rev 1 dated 12/30/13):

1. Eliminate the slant/pilot hole from 3010'-10270'MD/10,100'TVD (no changes to approved casing program)
2. Drill vertical hole to KOP @ 9500' (no changes to approved casing program)
3. Build curve from 9500'-10232'MD/9961'TVD. The approved casing program provided for 7" casing to be set thru curve. Manzano proposes to eliminate setting the 7" casing string but still plan to drill 8.75" hole from 9 5/8" casing point thru the curve.
4. Drill 7.875" lateral from 10232'MD/9961'TVD - 16305'MD/9990'TVD. The approved casing program provided for a 4.5" casing liner with "port and packer" system to be run from the KOP to total depth. Manzano proposes to run 5.5" 17.0#/ft HCP-110 casing from TD to surface & cement with with 1600sx EconoCem-H + 0.5% Halad-332 + 0.25#/sk D-AIR 5000 + 0.2% HR-601 (weight=11.9#/Yield=2.29), Tail in w/2100sx VersaCem-H + 0.5% Halad-344 + 0.4% CFR-3 + 1#/sk salt + 0.1% HR-601 (weight=14.2/yield=1.28). The 5.5" casing will be centralized on every other joint from TD-8900'

Manzano requests that the above changes be approved so that additional reserves can be recovered from this wellbore (see attached NMOCD C-102)

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)
MIKE HANAGAN

Title MANAGING MEMBER

Signature

Date 12/30/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

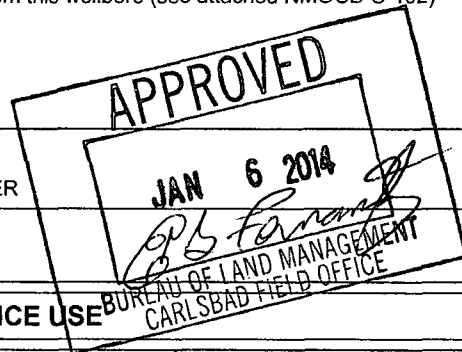
Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)



JAN 28 2014

JAN 28 2014



Weatherford™

HOBBS OCD

JAN 08 2014

RECEIVED

Drilling Services

Proposal

MANZANO LLC

GAY NINETIES FED COM #1H

LEA CO, NM

WELL FILE: **PLAN 2 Rev1**

DECEMBER 30, 2013

Weatherford International, Ltd.

P.O. Box 61028

Midland, TX 79711 USA

+1.432.561.8892 Main

+1.432.561.8895 Fax

www.weatherford.com

Attached to Form 3160-5 dated 12/30/13

Manzano, LLC

Gay Nineties Fed Com #1H
Lea County, New Mexico

Drill Straight To BHL

KB ELEV: 3581
GL ELEV: 3563

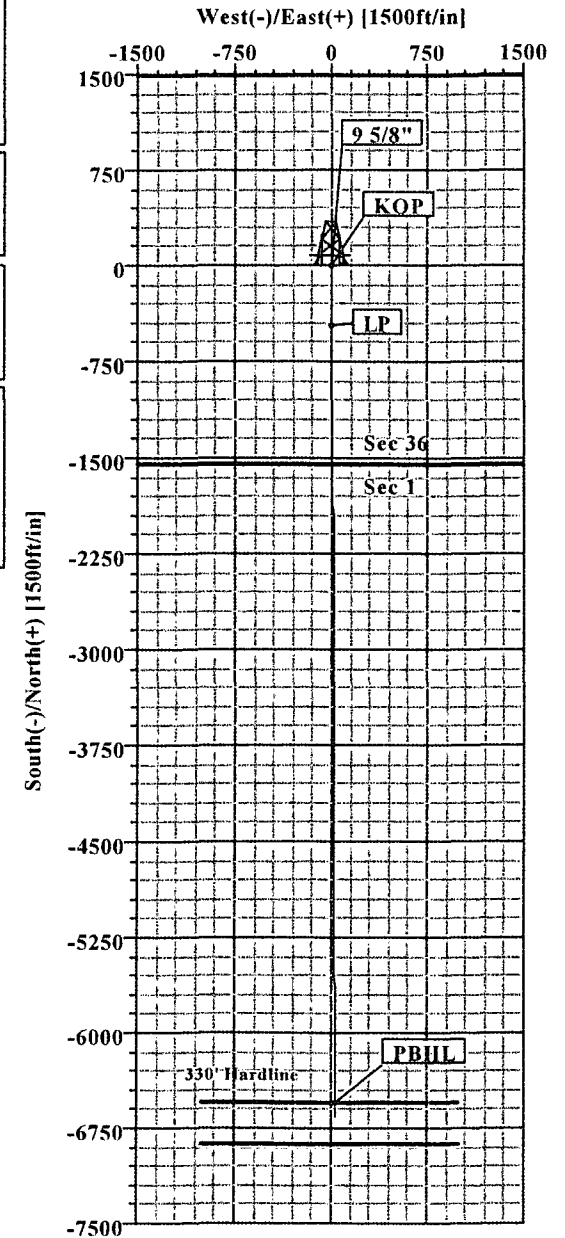
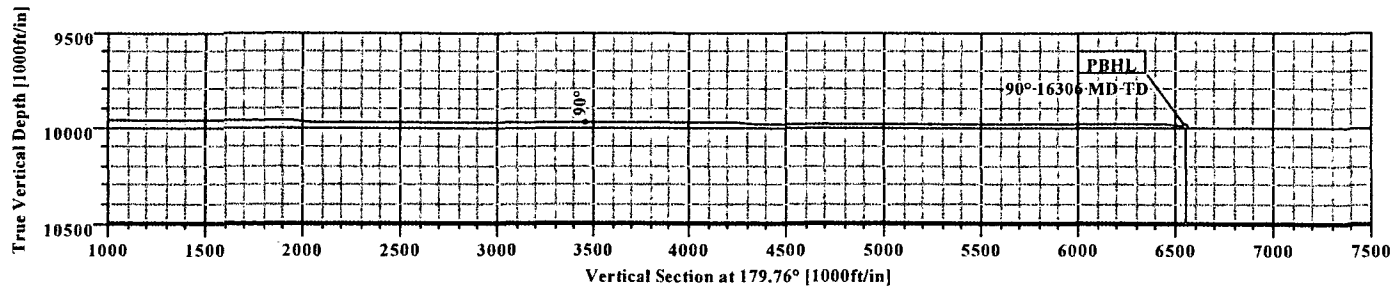
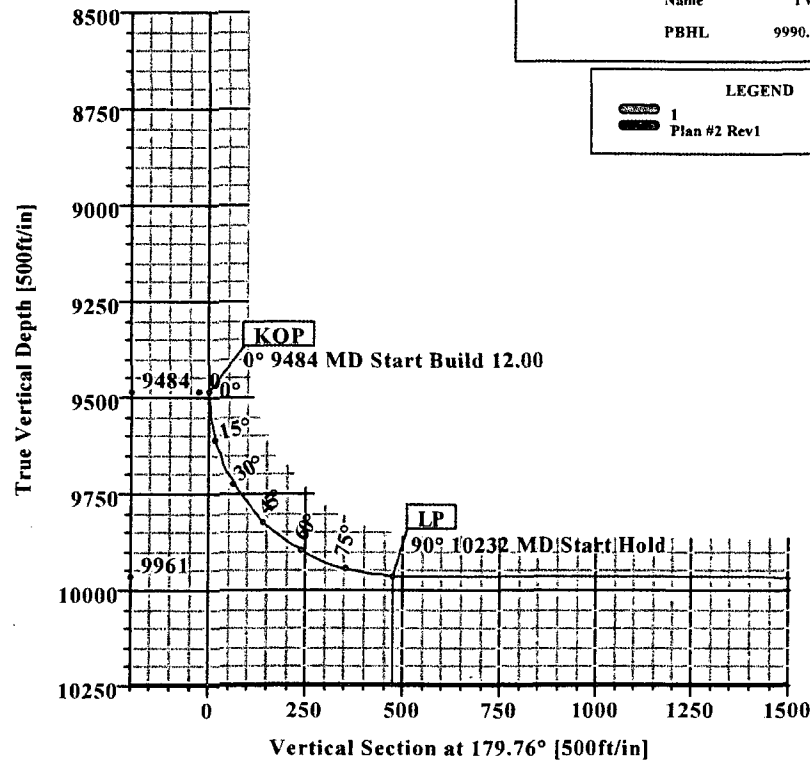
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	179.76	0.00	0.00	0.00	0.00	0.00	0.00	
2	9483.92	0.00	179.76	9483.92	0.00	0.00	0.00	0.00	0.00	
3	10231.67	89.73	179.76	9961.38	-475.21	1.99	12.00	179.76	475.21	
4	16305.62	89.73	179.76	9990.00	-6549.04	27.46	0.00	0.00	6549.10	PBHL

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Gay Nineties Fed Com #1H	0.00	0.00	587618.21	730643.04	32°36'50.060N	103°43'06.689W	N/A

TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	9990.00	-6549.04	27.46	581069.17	730670.50	Point

LEGEND	
	1
	Plan #2 Rev1

SITE DETAILS	
Gay Nineties Fed Com #1H	
Site Centre Northing:	587618.21
Easting:	730643.04
Ground Level:	3563.00
Positional Uncertainty:	0.00
Convergence:	0.33





Weatherford

Company: Manzano LLC						Date: 12/30/2013		Time: 12:28:50		Page: 1	
Field: Lea Co., NM (NAD 83)						Co-ordinate(NE) Reference: Well: Gay Nineties Fed Com #1H					
Site: Gay Nineties Fed Com #1H						Vertical (TVD) Reference: SITE 3581.0					
Well: Gay Nineties Fed Com #1H						Section (VS) Reference: Well (0.00N,0.00E,179.76Azi)					
Wellpath: 1						Survey Calculation Method: Minimum Curvature					
						Db: Sybase					

Plan:	Plan #2 Rev1	Date Composed:	12/12/2013
Principal:	Yes	Version:	1
		Tied-to:	From Surface

Site:	Gay Nineties Fed Com #1H		
Site Position:	Northing: 587618.21 ft	Latitude: 32 36 50.060 N	
From: Map	Easting: 730643.04 ft	Longitude: 103 43 6.689 W	
Position Uncertainty: 0.00 ft		North Reference: Grid	
Ground Level: 3563.00 ft		Grid Convergence: 0.33 deg	

Well:	Gay Nineties Fed Com #1H			Slot Name:	
Well Position:	+N/-S 0.00 ft	Northing: 587618.21 ft	Latitude: 32 36 50.060 N		
	+E/-W 0.00 ft	Easting : 730643.04 ft	Longitude: 103 43 6.689 W		
Position Uncertainty:	0.00 ft				

Wellpath: 1	Drilled From: OldNegative VS Land 373N Of Ri
Current Datum: SITE	Tie-on Depth: 0.00 ft
Magnetic Data: 12/12/2013	Above System Datum: Mean Sea Level
Field Strength: 48611 nT	Declination: 7.38 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 60.46 deg
ft	+N/-S ft
	+E/-W ft
	Direction deg
0.00	0.00 0.00 179.76

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	179.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9483.92	0.00	179.76	9483.92	0.00	0.00	0.00	0.00	0.00	0.00	
10231.67	89.73	179.76	9961.38	-475.21	1.99	12.00	12.00	0.00	179.76	
16305.62	89.73	179.76	9990.00	-6549.04	27.46	0.00	0.00	0.00	0.00	PBHL

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comments
9400.00	0.00	179.76	9400.00	0.00	0.00	0.00	0.00	587618.21	730643.04	
9483.92	0.00	179.76	9483.92	0.00	0.00	0.00	0.00	587618.21	730643.04	KOP
9500.00	1.93	179.76	9500.00	-0.27	0.00	0.27	12.00	587617.94	730643.04	
9600.00	13.93	179.76	9598.86	-14.04	0.06	14.04	12.00	587604.17	730643.10	
9700.00	25.93	179.76	9692.70	-48.07	0.20	48.07	12.00	587570.14	730643.24	
9800.00	37.93	179.76	9777.41	-100.86	0.42	100.86	12.00	587517.35	730643.46	
9900.00	49.93	179.76	9849.30	-170.11	0.71	170.11	12.00	587448.10	730643.75	
10000.00	61.93	179.76	9905.22	-252.79	1.06	252.79	12.00	587365.42	730644.10	
10100.00	73.93	179.76	9942.72	-345.29	1.45	345.30	12.00	587272.92	730644.49	
10200.00	85.93	179.76	9960.18	-443.57	1.86	443.58	12.00	587174.64	730644.90	
10231.67	89.73	179.76	9961.38	-475.21	1.99	475.21	12.00	587143.00	730645.03	LP
10300.00	89.73	179.76	9961.70	-543.54	2.28	543.55	0.00	587074.67	730645.32	
10400.00	89.73	179.76	9962.17	-643.54	2.70	643.55	0.00	586974.67	730645.74	
10500.00	89.73	179.76	9962.64	-743.54						

Weatherford

Wft Plan Report X Y's.



Weatherford

Company: Manzano LLC Field: Lea Co., NM (NAD 83) Site: Gay Nineties Fed Com #1H Well: Gay Nineties Fed Com #1H Wellpath: 1	Date: 12/30/2013 Time: 12:28:50 Page: 2 Co-ordinate(NE) Reference: Well: Gay Nineties Fed Com #1H Vertical (TVD) Reference: SITE 3581.0 Section (VS) Reference: Well (0.00N,0.00E,179.76Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
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Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
11500.00	89.73	179.76	9967.35	-1743.52	7.31	1743.53	0.00	585874.69	730650.35	
11600.00	89.73	179.76	9967.83	-1843.52	7.73	1843.53	0.00	585774.69	730650.77	
11700.00	89.73	179.76	9968.30	-1943.51	8.15	1943.53	0.00	585674.70	730651.19	
11800.00	89.73	179.76	9968.77	-2043.51	8.57	2043.53	0.00	585574.70	730651.61	
11900.00	89.73	179.76	9969.24	-2143.51	8.99	2143.53	0.00	585474.70	730652.03	
12000.00	89.73	179.76	9969.71	-2243.51	9.41	2243.53	0.00	585374.70	730652.45	
12100.00	89.73	179.76	9970.18	-2343.51	9.83	2343.53	0.00	585274.70	730652.87	
12200.00	89.73	179.76	9970.65	-2443.50	10.25	2443.53	0.00	585174.71	730653.29	
12300.00	89.73	179.76	9971.12	-2543.50	10.66	2543.52	0.00	585074.71	730653.70	
12400.00	89.73	179.76	9971.60	-2643.50	11.08	2643.52	0.00	584974.71	730654.12	
12500.00	89.73	179.76	9972.07	-2743.50	11.50	2743.52	0.00	584874.71	730654.54	
12600.00	89.73	179.76	9972.54	-2843.50	11.92	2843.52	0.00	584774.71	730654.96	
12700.00	89.73	179.76	9973.01	-2943.49	12.34	2943.52	0.00	584674.72	730655.38	
12800.00	89.73	179.76	9973.48	-3043.49	12.76	3043.52	0.00	584574.72	730655.80	
12900.00	89.73	179.76	9973.95	-3143.49	13.18	3143.52	0.00	584474.72	730656.22	
13000.00	89.73	179.76	9974.42	-3243.49	13.60	3243.52	0.00	584374.72	730656.64	
13100.00	89.73	179.76	9974.89	-3343.49	14.02	3343.52	0.00	584274.72	730657.06	
13200.00	89.73	179.76	9975.37	-3443.48	14.44	3443.51	0.00	584174.73	730657.48	
13300.00	89.73	179.76	9975.84	-3543.48	14.86	3543.51	0.00	584074.73	730657.90	
13400.00	89.73	179.76	9976.31	-3643.48	15.28	3643.51	0.00	583974.73	730658.32	
13500.00	89.73	179.76	9976.78	-3743.48	15.70	3743.51	0.00	583874.73	730658.74	
13600.00	89.73	179.76	9977.25	-3843.48	16.12	3843.51	0.00	583774.73	730659.16	
13700.00	89.73	179.76	9977.72	-3943.47	16.53	3943.51	0.00	583674.74	730659.57	
13800.00	89.73	179.76	9978.19	-4043.47	16.95	4043.51	0.00	583574.74	730659.99	
13900.00	89.73	179.76	9978.66	-4143.47	17.37	4143.51	0.00	583474.74	730660.41	
14000.00	89.73	179.76	9979.14	-4243.47	17.79	4243.51	0.00	583374.74	730660.83	
14100.00	89.73	179.76	9979.61	-4343.47	18.21	4343.50	0.00	583274.74	730661.25	
14200.00	89.73	179.76	9980.08	-4443.46	18.63	4443.50	0.00	583174.75	730661.67	
14300.00	89.73	179.76	9980.55	-4543.46	19.05	4543.50	0.00	583074.75	730662.09	
14400.00	89.73	179.76	9981.02	-4643.46	19.47	4643.50	0.00	582974.75	730662.51	
14500.00	89.73	179.76	9981.49	-4743.46	19.89	4743.50	0.00	582874.75	730662.93	
14600.00	89.73	179.76	9981.96	-4843.46	20.31	4843.50	0.00	582774.75	730663.35	
14700.00	89.73	179.76	9982.43	-4943.45	20.73	4943.50	0.00	582674.76	730663.77	
14800.00	89.73	179.76	9982.90	-5043.45	21.15	5043.50	0.00	582574.76	730664.19	
14900.00	89.73	179.76	9983.38	-5143.45	21.57	5143.50	0.00	582474.76	730664.61	
15000.00	89.73	179.76	9983.85	-5243.45	21.99	5243.49	0.00	582374.76	730665.03	
15100.00	89.73	179.76	9984.32	-5343.45	22.40	5343.49	0.00	582274.76	730665.44	
15200.00	89.73	179.76	9984.79	-5443.44	22.82	5443.49	0.00	582174.77	730665.86	
15300.00	89.73	179.76	9985.26	-5543.44	23.24	5543.49	0.00	582074.77	730666.28	
15400.00	89.73	179.76	9985.73	-5643.44	23.66	5643.49	0.00	581974.77	730666.70	
15500.00	89.73	179.76	9986.20	-5743.44	24.08	5743.49	0.00	581874.77	730667.12	
15600.00	89.73	179.76	9986.67	-5843.44	24.50	5843.49	0.00	581774.77	730667.54	
15700.00	89.73	179.76	9987.15	-5943.43	24.92	5943.49	0.00	581674.78	730667.96	
15800.00	89.73	179.76	9987.62	-6043.43	25.34	6043.49	0.00	581574.78	730668.38	
15900.00	89.73	179.76	9988.09	-6143.43	25.76	6143.48	0.00	581474.78	730668.80	
16000.00	89.73	179.76	9988.56	-6243.43	26.18	6243.48	0.00	581374.78	730669.22	
16100.00	89.73	179.76	9989.03	-6343.43	26.60	6343.48	0.00	581274.78	730669.64	
16200.00	89.73	179.76	9989.50	-6443.42	27.02	6443.48	0.00	581174.79	730670.06	
16300.00	89.73	179.76	9989.97	-6543.42	27.44	6543.48	0.00	581074.79	730670.48	
16305.62	89.73	179.76	9990.00	-6549.04	27.46	6549.10	0.00	581069.17	730670.50	PBHL

Weatherford

Wft Plan Report X Y's.



Weatherford

Company: Manzano LLC Field: Lea Co., NM (NAD 83) Site: Gay Nineties Fed Com #1H Well: Gay Nineties Fed Com #1H Wellpath: 1	Date: 12/30/2013 Time: 12:28:50 Page: 3 Co-ordinate(NE) Reference: Well: Gay Nineties Fed Com #1H Vertical (TVD) Reference: SITE 3581.0 Section (VS) Reference: Well (0.00N,0.00E,179.76Azi) Survey Calculation Method: Minimum Curvature Db: Sybase
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Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->				
								Deg	Min	Sec	Deg	Min	Sec		
PBHL			9990.00	-6549.04	27.46	581069.17	730670.50	32	35	45.256	N	103	43	6.811	W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
4500.00	4500.00	9.625	12.250	9 5/8"

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

Annotation

MD ft	TVD ft	
9483.92	9483.92	KOP
10231.67	9961.38	LP
16305.61	9990.00	PBHL

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: December 12, 2013
Job Number: _____
Customer: Manzano, LLC
Well Name: Gay Nineties Fed Com #1H
API Number: _____
Rig Name: _____
Location: Lea County, New Mexico
Block: _____
Engineer: R Joyner

US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 587618.208 USFT	Latitude 32.6139087 DEG
East/West 730643.044 USFT	Longitude -103.7185200 DEG
Grid Convergence: .33°	
Total Correction: +7.16°	

Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.61391° N	32° 36 min 50.071 sec
Longitude =	103.71852° W	103° 43 min 6.672 sec

Magnetic Declination =	7.49°	[True North Offset]
Local Gravity =	.9988 g	Checksum = 6613
Local Field Strength =	48590 nT	Magnetic Vector X = 23760 nT
Magnetic Dip =	60.45°	Magnetic Vector Y = 3123 nT
Magnetic Model =	bggm2013	Magnetic Vector Z = 42268 nT
Spud Date =	Dec 30, 2013	Magnetic Vector H = 23965 nT

Signed: _____

Date: _____

DISTRICT I
1825 N. French Dr., Hobbs, NM 88240
Phone (575) 353-5161 Fax: (575) 353-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (505) 748-1253 Fax: (505) 748-8720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-8170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-40827	Pool Code	Pool Name Lusk S.E. Bone Springs
Property Code	Property Name GAY NINETIES FEDERAL COM	Well Number 1
OGRID No. 231429	Operator Name MANZANO, LLC	Elevation 3563'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	36	19 S	32 E		1547	SOUTH	2280	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	1	20 S	32 E		330	SOUTH	1980	EAST	LEA

Dedicated Acres 240	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

ADDITIONAL AREA
TO BE
COMMUNITIZED
(W/2 SE/4)

SURFACE LOCATION
Lot - N 32°36'50.07"
Long - W 103°43'06.67"
NMSPCE- N 587618.208
E 730643.044
(NAD-83)

**PROPOSED BOTTOM
HOLE LOCATION**
Lot - N 32°35'45.25"
Long - W 103°43'03.29"
NMSPCE- N 581059.169
E 730970.504
(NAD-83)

ORIGINAL COMMUNITIZED
Area
(W/2 E/2)

OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the Division.

Paul Ragsdale 6-12-12
Signature Date
Paul Ragsdale
Printed Name
Paul@manzanocenergy.com
Email Address

SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

GARY L. JONES
Date Surveyed
Signature & Seal of Professional Surveyor
Certificate No. Gary L. Jones 7977
BASIN SURVEYS 26633

ATTACHED TO FORM 3160-5 dated 12/30/13

1 Plat

General	Company: Manzano, LLC		Prospect: Hinkle	
	Well Name: Gay Nineties Com #1H		TD (MD/TVD): 16300MD/9990'TVD	
	County: Lea		Elevation: 3561'GL/3578'KB	
	State: New Mexico		Latitude & longitude:	
	API Number: 30-025-40827		Section-Township-Range: SL: Section 36-T19S-R32E	
	Directions: From Maljamar Road (Lusk Plant Rd) - Turn east onto Dry Lake Road & go 4.9 miles, Turn right & go 2.0 miles, Turn right & go 0.80 miles. Turn right @ Y in road & go 0.5 miles. Turn left &		Surface Location: 1547'FSL & 2280'FEL- Sec 36-19S-R32E	
		Bottom Hole Location: 330'FSL & 2280'FEL-Sec 1-20S-R32E		

Formation	Depth		Casing Profile	Hole Size	Casing Specifications	Mud, Bit & Cement Program	
	MD	TVD					
Rustler	1170'	1170'		26"	20" 106.5#/ft J-55 BTC	MW 8.4-9.4, Vis 32-34, WL n/c, Chl 6k 26" Baker Hughes GTX-C20 Button Bit Cement w/1500sx C + 400sx Tail Lead @ 12.5#/1.15 - Tail @ 14.8#/1.34 MW 10+, Vis 28, WL n/c, Chl 186k	
20" set @ 1195'							
Top of Salt	1310'	1310'			17 1/2"	0-100': 13 3/8" 68# J-55 BTC 100-2000': 13 3/8" 54.5# J-55 BTC	17.5" Ultrerra U616S PDC bit w/motor Cement w/2600sx EconoCem C + 400sx HalCem-C Neat Lead @ 12.9#/1.87 - Tail @ 14.8#/1.33
Base of Salt	2730'	2730'				2000'-3200': 13 3/8" 68# J-55 BTC	
Yates	3010'	3010'					
13 3/8" set @ 3200'				3200'	0-100': 9 5/8" 40# HCP-110 LTC 100'-4000': 9 5/8" 40# J-55 LTC	MW 8.4-8.6, Vis 28, WL n/c, Chl 10k 12.25" Ultrerra U716M PDC Bit w/motor Cement w/1000sx EconoCem-C + 250sx HalCem-C Neat Lead @ 12.9#/1.87 - Tail @ 14.8#/1.33	
Capitan Reef	3380'	3380'		12 1/4"	4000'-4500': 9 5/8" 40# HCP-110 LTC		
9 5/8" set @ 4500'				4500'		Rig up Mudlogger & H2S Equipment MW 8.4-8.7, Vis 28, WL n/c, Chl 20k	
Delaware	4700'	4700'		8 3/4"	16300' of 5 1/2" 17#/ft P-110 LTC	8.75" Baker Hughes T607X PDC Bit w/motor or STC MS1813MNWPX w/motor Cement w/1600sx EconoCem-H + 2100sx VersaCem-H Lead @ 11.9/2.29 - Tail @ 14.2/1.28 Circulate Cement to Surface	
Bone Springs Ls	7850'	7850'		8900'		MW 8.4-9.1, Vis 30-32, WL 20-40, Chl <30k (curve)	
NO 7" set				CURVE	5 1/2" 17.0#/ft HCP-110 LTC	8.75" Baker Hughes DPD406F PDC Bit	
1st Bone Spring SS	8925'	8925'					
KOP	9480'	9480'					
2nd Bone Spring SS	9600'	9580'					
2nd SS Lower	9990'	9875'					
End of Curve	10230'	9961'					
End of Lateral	16300'	9990'		LATERAL	7 7/8"	MW 8.6-9.1, Vis 30-32, WL 20-40, Chl <30k 7.875" Ultrerra U711M PDC Bit	
5 1/2" @ 16,300'							

Comments	

Attached to Form 3160-5 Dated 12/30/13

CONDITIONS OF APPROVAL

Sundry dated 1/6/2014

OPERATOR'S NAME:	MANZANO OIL CORPORATION
LEASE NO.:	NM77054 30-025-40827
WELL NAME & NO.:	1H-GAY NINETIES FED COM
SURFACE HOLE FOOTAGE:	1547'/S. & 2280'/E. -sec. 36-19S-32E (NWSE)
BOTTOM HOLE FOOTAGE:	330'/S. & 1980'/E. -sec. 1-20S-32E (SWSE)
COUNTY:	Lea County, New Mexico

**Original COA still stands with the following drilling modifications:
New directional plan approved**

1. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
(Set casing in the base of the reef at approximately 4500')

Operator has proposed DV tool at depth of approximately 3250'; if an ECP is used; it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

- a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

- b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

**Eliminate the slant/pilot hole, 7" casing and 4-1/2" liner
Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

2. The minimum required fill of cement behind the 5-1/2" inch production casing is:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

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