

HOBBS OCD

Form 3160-1
(March 2012)

RECEIVED

MAY 19 2014

OCD HOBBS

ATS-13-1177

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-066272(BH); NMNM-092781
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Devon Energy Production Company, L.P. (6177)		7. If Unit or CA Agreement, Name and No. GAUCHO UNIT NM 94480X
3a. Address 333 W. Sheridan Oklahoma City, OK 73102-5010		8. Lease Name and Well No. GAUCHO UNIT 16H (30863)
3b. Phone No. (include area code) 405-235-3611		9. API Well No. 30-025-41853
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 200' FSL & 670' FEL, P At proposed prod. zone 330' FNL & 660' FEL, A Sec 19 PP: 200' FSL & 670' FEL Sec 19		10. Field and Pool, or Exploratory WC-025 G-06 52274214; B5 (77922)
11. Sec., T. R. M. or Blk. and Survey or Area Sec 19, T22S, R34E		12. County or Parish LEA
13. State NM		14. Distance in miles and direction from nearest town or post office* Approx. 20 miles SW of Eunice, NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) See Attached Map	16. No. of acres in lease 120 ac (NMNM-066272) 960 ac (NMNM-092781)	17. Spacing Unit dedicated to this well 160 ac
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See Attached Map	19. Proposed Depth TVD: 10533' PU: 10,700' MD: 14988'	20. BLM/BIA Bond No. on file CO-1104; NMB-000801
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3446.9 (GL)	22. Approximate date work will start* As Soon As Possible	23. Estimated duration 45 Days

24. Attachments

To be pad drilled w/ GAUCHO UNIT 17H

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature (Signature)	Name (Printed/Typed) David Cook	Date 9/25/2013
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Title
Regulatory Compliance Specialist

Approved by (Signature)	Name (Printed/Typed) IS/ STEPHEN J. CAFFEY	Date 5-12-14
-------------------------	---	-----------------

Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE
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Application approval 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.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHEDK2
05/19/14SEE ATTACHED FOR
CONDITIONS OF APPROVAL

CAPITAN CONTROLLED WATER BASIN

Witness Surface &
Intermediate Casing

MAY 20 2014

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

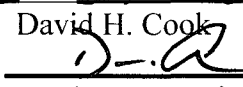
Kim Henderson - Operations Engineer
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 552-6505 (office)
(405) 479-3869 (Cellular)

Don Mayberry - Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(575) 748-3371 (office)
(575) 746-4945 (home)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 29th day of August, 2013.
Printed Name: David H. Cook
Signed Name: 
Position Title: Regulatory Specialist
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-552-7848

HOBBS OCD**MAY 19 2014****RECEIVED**

DRILLING PROGRAM

Devon Energy Production Company, L.P.

GAUCHO UNIT 16H

Surface Location: 200 FSL & 670 FEL, Unit P, Sec 19 T22S R34E, LEA, NM

Bottom Hole Location: 330 FNL & 660 FEL, Unit A, Sec 19 T22S R34E, LEA, NM

1) **Geologic Name of Surface Formation:** Quaternary

2) **Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:**

a.	Fresh Water	300'	
b.	Rustler	1640'	Barren
c.	Top of Salt	1925'	Barren
d.	Base of Salt	3700'	Barren
e.	Yates	3930'	Barren
f.	Queen	4101'	Barren
g.	Greyburg	4548'	Barren
h.	Delaware	5256'	Oil/Gas
i.	Cherry Canyon	6016'	Oil/Gas
j.	Lower Brushy Canyon	8264'	Oil/Gas
k.	Bone Spring Lime	8443'	Oil/Gas
l.	1st Bone Spring Sand	9497'	Oil/Gas
m.	2nd Bone Spring Sand	10046'	Oil/Gas
	Total Depth	10533'	TVD
		14988'	MD

3) Pressure Control Equipment:

The BOP system used to drill the intermediate hole will consist of a 13-5/8" Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2, a 3M system will be installed and tested prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2, a 3M system will be installed and tested prior to drilling out the intermediate casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

Auxiliary Well Control and Monitoring Equipment

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

4) Casing Program: (All casing is new and API approved)

See COA

Hole Size (in)	Hole Interval (ft)	Casing OD (in)	Casing Interval (ft)	Weight (lb)	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17-1/2	0-1700 1830	13-3/8	0-1700	54.5	BTC	J-55	1.42	3.43	9.81
12-1/4	1700-5150 5000	9-5/8	0-5150	40	BTC	HCK-55	1.58	1.47	4.50
8-3/4	5150-9800	5-1/2	0-9800	17	LTC	HCP-110	1.83	2.27	2.67
8-3/4	9800-14988	5-1/2	9800-14988	17	BTC	HCP-110	1.70	2.11	2.23

*An 8-3/4 pilot hole will be drilled to 10700' and plugged back to KOP (for volumes and TOC see below).

Maximum Lateral TVD: 10533'

5) Proposed Mud Circulation System:

Depth (ft)	Mud Weight	Viscosity	Fluid Loss	Type System
0-1700 1830	8.5-8.9	35-45	N/C	FW
1700-5150 5000	9.8-10.0	29-36	N/C	BRINE
5150-9910	8.4-8.8	29-36	<100	Cut Brine
9910-14988	8.6-9.0	29-36	<100	Cut Brine

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

6) Cementing Program:

String	No. of sx	Wt. #/gal	Yld. cf/sx	Stage; Lead/Tail	Slurry Description
Surface 13 3/4	960	13.5	1.75	Lead	Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water
	550	14.8	1.34	Tail	Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water
Intermediate 9 5/8	1070	12.9	1.85	Lead	(65:35) Class H Cement:Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.9% Fresh Water
Production 5 1/2	390	11.5	2.57	1st Lead	(50:50) Class H Cement:Poz (Fly Ash) + 10% BWOC Bentonite + 0.15% SA-1015 + 0.1% BWOC HR-601 + 0.25 lb/sk D-Air 5000 + 80.01 % Fresh Water
	330	12.5	1.96	2nd Lead	(65:35) Class H Cement:Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	1330	14.5	1.21	Tail	(50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
Contingency Plan For loss of Circulation					
	490	11.5	2.57	Lead	(50:50) Class H Cement:Poz (Fly Ash) + 10% BWOC Bentonite + 0.15% SA-1015 + 0.1% BWOC HR-601 + 0.25 lb/sk D-Air 5000 + 80.01 % Fresh Water
	1410	14.5	1.21	Tail	(50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
2nd STAGE (DV tool at 6000 ft)					
	130	12.5	1.96	Lead	(65:35) Class H Cement:Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly-E-Flake + 74.1 % Fresh Water
	120	14.8	1.33	Tail	Class C Cement + 63.9% Fresh Water
Pilot Plug	355	15.6	1.18		Class H

TOC For All Strings:

Surface @ 0'

Intermediate @ 0'

Production @ 4650'

see COA

Cementing Notes:

*Cement volumes are based on excess of at least 100% surface, 75% intermediate, and 25% production.

*Actual cement volumes will be adjusted based on fluid caliper and caliper log data.

7) Logging, Coring, and Testing Program:

- a. Drill stem tests will be based on geological sample shows.
- b. If a drill stem test is anticipated, a procedure, equipment to be used, and safety measures will be provided via sundry notice to the BLM.
- c. The open hole electrical logging program will be:
 - i. Total Depth to Intermediate Casing:
 - Dual Laterolog
 - Micro Laterolog with SP & Gamma Ray
 - Compensated Neutron
 - Z-Density Log with Gamma Ray and Caliper
 - ii. Total Depth to Surface:
 - Compensated Neutron with Gamma Ray
 - iii. No coring program is planned
 - iv. Additional testing will be initiated subsequent to setting the 5-1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows, and drill stem tests.

8) Potential Hazards

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation being used to drill this well. Estimated BHP 4600psi and Estimated BHT 160 degrees. No H₂S is anticipated to be encountered.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13-3/8" casing shoe until the 5-1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13-3/8" shoe until total depth is reached.

9) Anticipated Starting Date and Duration of Operations:

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



Devon Energy

Location: Lea County, NM
Field: (Gaucho) Sec 17, T22S, R34E
Facility: Gaucho Unit No.16H & No.17H

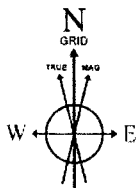
Slot: No.16H SHL
Well: No.16H
Wellbore: No.16H PWB



Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	25.00	0.000	359.754	25.00	0.00	0.00	0.00	0.00
Est KOP	9910.08	0.000	359.754	9910.08	0.00	0.00	0.00	0.00
EOC	10803.23	89.315	359.754	10483.00	566.10	-2.43	10.00	566.11
TL	10803.26	89.315	359.754	10483.00	566.13	-2.43	2.00	566.13
No.16H PBHL	14987.64	89.315	359.754	10533.00	4750.17	-20.37	0.00	4750.22

Plot reference wellpath is Rev-A.0

True vertical depths are referenced to Rig on No.16H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No.16H SHL (KB)	North Reference: Grid north
Rig on No.16H SHL (KB) to Mean Sea Level: 3471.9 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No.16H SHL): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentry on 08/05/2013

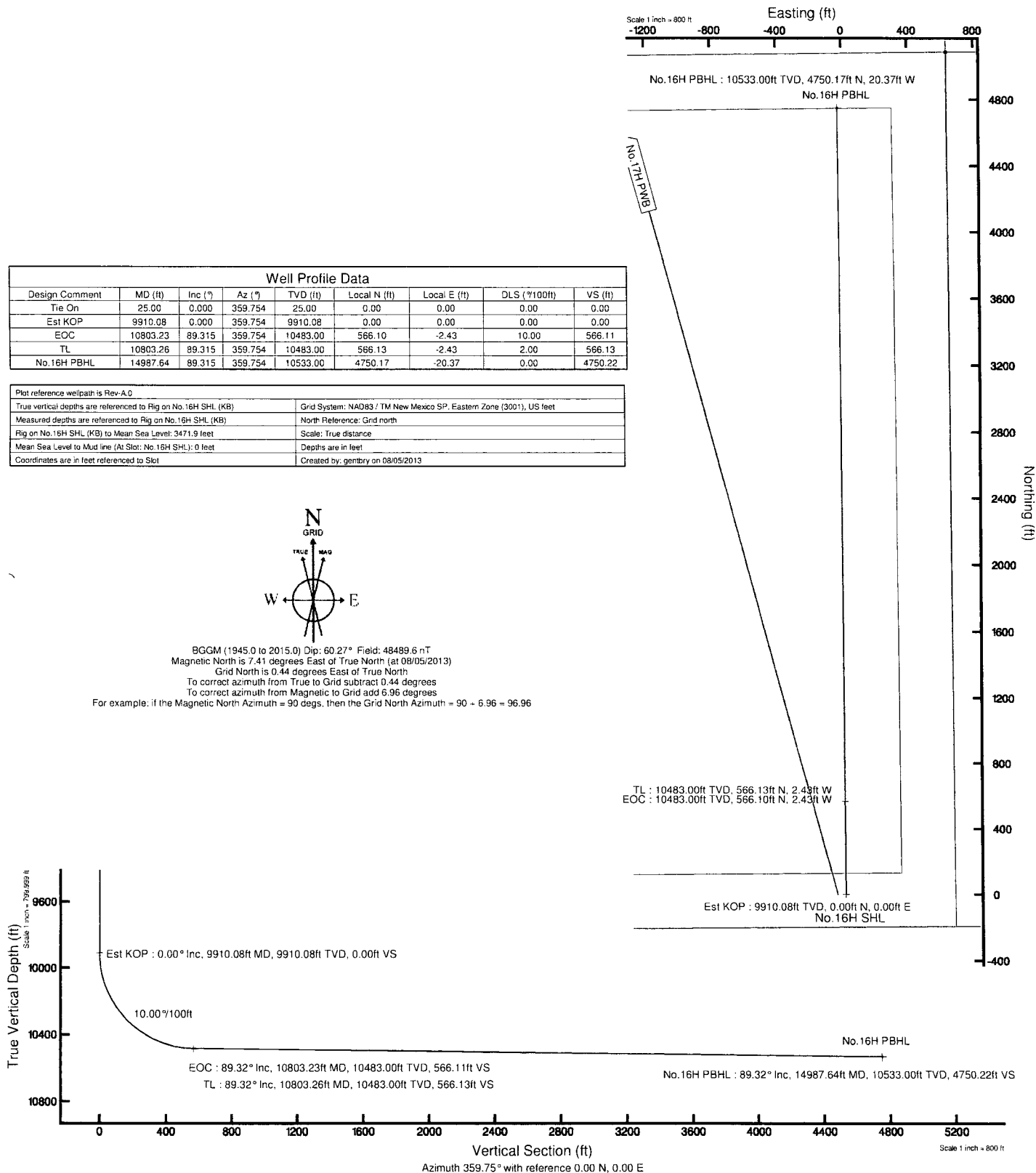


BGGM (1945.0 to 2015.0) Dip: 60.27° Field: 48489.6 nT
Magnetic North is 7.41 degrees East of True North (at 08/05/2013)
Grid North is 0.44 degrees East of True North

To correct azimuth from True to Grid subtract 0.44 degrees

To correct azimuth from Magnetic to Grid add 6.96 degrees

For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 6.96 = 96.96



Rev-A.0



Planned Wellpath Report

Rev-A.0
Page 1 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.16H SHL
Area	Lea County, NM	Well	No.16H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.16H PWB
Facility	Gaucho Unit No.16H & No.17H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999984	Report Generated	08/05/2013 at 11:53:17 AM
Convergence at slot	0.44° East	Database/Source file	WA Midland/No.16H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W
Facility Reference Pt			797750.19	499509.37	32°22'13.749"N	103°30'10.150"W
Field Reference Pt			800357.93	506259.73	32°23'20.341"N	103°29'39.128"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.16H SHL (KB) to Facility Vertical Datum	3471.90ft
Horizontal Reference Pt	Slot	Rig on No.16H SHL (KB) to Mean Sea Level	3471.90ft
Vertical Reference Pt	Rig on No.16H SHL (KB)	Rig on No.16H SHL (KB) to Mud Line at Slot (No.16H SHL)	3471.90ft
MD Reference Pt	Rig on No.16H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.75°



Planned Wellpath Report

Rev-A.0
Page 2 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.16H SHL
Area	Lea County, NM	Well	No.16H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.16H PWB
Facility	Gaucho Unit No.16H & No.17H		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	359.754	0.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
25.00	0.000	359.754	25.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Tie On
125.00†	0.000	359.754	125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
225.00†	0.000	359.754	225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
325.00†	0.000	359.754	325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
425.00†	0.000	359.754	425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
525.00†	0.000	359.754	525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
625.00†	0.000	359.754	625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
725.00†	0.000	359.754	725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
825.00†	0.000	359.754	825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
925.00†	0.000	359.754	925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1025.00†	0.000	359.754	1025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1125.00†	0.000	359.754	1125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1225.00†	0.000	359.754	1225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1325.00†	0.000	359.754	1325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1425.00†	0.000	359.754	1425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1525.00†	0.000	359.754	1525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1625.00†	0.000	359.754	1625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1640.00†	0.000	359.754	1640.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Rustler
1725.00†	0.000	359.754	1725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1825.00†	0.000	359.754	1825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
1925.00†	0.000	359.754	1925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Top Salt
2025.00†	0.000	359.754	2025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2125.00†	0.000	359.754	2125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2225.00†	0.000	359.754	2225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2325.00†	0.000	359.754	2325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2425.00†	0.000	359.754	2425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2525.00†	0.000	359.754	2525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2625.00†	0.000	359.754	2625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2725.00†	0.000	359.754	2725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2825.00†	0.000	359.754	2825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
2925.00†	0.000	359.754	2925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3025.00†	0.000	359.754	3025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3125.00†	0.000	359.754	3125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3225.00†	0.000	359.754	3225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3325.00†	0.000	359.754	3325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3425.00†	0.000	359.754	3425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3525.00†	0.000	359.754	3525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3625.00†	0.000	359.754	3625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3700.00†	0.000	359.754	3700.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Base Salt
3725.00†	0.000	359.754	3725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3825.00†	0.000	359.754	3825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3925.00†	0.000	359.754	3925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
3930.00†	0.000	359.754	3930.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Yates
4025.00†	0.000	359.754	4025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	



Planned Wellpath Report

Rev-A.0

Page 3 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.16H SHL
Area	Lea County, NM	Well	No.16H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.16H PWB
Facility	Gaucho Unit No.16H & No.17H		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4125.00†	0.000	359.754	4125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4225.00†	0.000	359.754	4225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4325.00†	0.000	359.754	4325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4425.00†	0.000	359.754	4425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4525.00†	0.000	359.754	4525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4625.00†	0.000	359.754	4625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4725.00†	0.000	359.754	4725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4825.00†	0.000	359.754	4825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
4925.00†	0.000	359.754	4925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5025.00†	0.000	359.754	5025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5125.00†	0.000	359.754	5125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5225.00†	0.000	359.754	5225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5256.00†	0.000	359.754	5256.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Delaware
5325.00†	0.000	359.754	5325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5425.00†	0.000	359.754	5425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5525.00†	0.000	359.754	5525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5625.00†	0.000	359.754	5625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5725.00†	0.000	359.754	5725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5825.00†	0.000	359.754	5825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
5925.00†	0.000	359.754	5925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6016.00†	0.000	359.754	6016.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Cherry Canyon
6025.00†	0.000	359.754	6025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6125.00†	0.000	359.754	6125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6225.00†	0.000	359.754	6225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6325.00†	0.000	359.754	6325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6425.00†	0.000	359.754	6425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6525.00†	0.000	359.754	6525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6625.00†	0.000	359.754	6625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6725.00†	0.000	359.754	6725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6825.00†	0.000	359.754	6825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
6925.00†	0.000	359.754	6925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7025.00†	0.000	359.754	7025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7125.00†	0.000	359.754	7125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7225.00†	0.000	359.754	7225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7325.00†	0.000	359.754	7325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7425.00†	0.000	359.754	7425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7525.00†	0.000	359.754	7525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7625.00†	0.000	359.754	7625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7725.00†	0.000	359.754	7725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7825.00†	0.000	359.754	7825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
7925.00†	0.000	359.754	7925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8025.00†	0.000	359.754	8025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8125.00†	0.000	359.754	8125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8225.00†	0.000	359.754	8225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8264.00†	0.000	359.754	8264.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Lwr Brushy Canyon



Planned Wellpath Report

Rev-A.0

Page 4 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.16H SHL
Area	Lea County, NM	Well	No.16H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.16H PWB
Facility	Gaucho Unit No.16H & No.17H		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8325.00†	0.000	359.754	8325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8425.00†	0.000	359.754	8425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8443.00†	0.000	359.754	8443.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Bone Spring Lime
8525.00†	0.000	359.754	8525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8625.00†	0.000	359.754	8625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8725.00†	0.000	359.754	8725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8825.00†	0.000	359.754	8825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
8925.00†	0.000	359.754	8925.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9025.00†	0.000	359.754	9025.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9125.00†	0.000	359.754	9125.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9225.00†	0.000	359.754	9225.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9325.00†	0.000	359.754	9325.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9425.00†	0.000	359.754	9425.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9497.00†	0.000	359.754	9497.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	1st Bone Spring Sand
9525.00†	0.000	359.754	9525.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9625.00†	0.000	359.754	9625.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9725.00†	0.000	359.754	9725.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9825.00†	0.000	359.754	9825.00	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	
9910.08	0.000	359.754	9910.08	0.00	0.00	0.00	797750.19	499509.37	32°22'13.749"N	103°30'10.150"W	0.00	Est KOP
9925.00†	11.492	359.754	9925.00	0.19	0.19	0.00	797750.19	499509.56	32°22'13.751"N	103°30'10.150"W	10.00	
10025.00†	11.492	359.754	10024.23	11.49	11.49	-0.05	797750.14	499520.86	32°22'13.862"N	103°30'10.149"W	10.00	
10047.31†	13.722	359.754	10046.00	16.35	16.35	-0.07	797750.12	499525.72	32°22'13.911"N	103°30'10.149"W	10.00	2nd Bone Spring Sand
10125.00†	21.492	359.754	10120.00	39.84	39.84	-0.17	797750.02	499549.21	32°22'14.143"N	103°30'10.148"W	10.00	
10225.00†	31.492	359.754	10209.38	84.39	84.39	-0.36	797749.83	499593.76	32°22'14.584"N	103°30'10.146"W	10.00	
10325.00†	41.492	359.754	10289.67	143.78	143.78	-0.62	797749.57	499653.15	32°22'15.171"N	103°30'10.144"W	10.00	
10425.00†	51.492	359.754	10358.43	216.22	216.22	-0.93	797749.26	499725.58	32°22'15.888"N	103°30'10.141"W	10.00	
10525.00†	61.492	359.754	10413.57	299.49	299.49	-1.29	797748.90	499808.85	32°22'16.712"N	103°30'10.138"W	10.00	
10625.00†	71.492	359.754	10453.41	391.08	391.07	-1.68	797748.51	499900.44	32°22'17.618"N	103°30'10.134"W	10.00	
10725.00†	81.492	359.754	10476.74	488.19	488.18	-2.10	797748.09	499997.54	32°22'18.579"N	103°30'10.130"W	10.00	
10803.23	89.315	359.754	10483.00	566.13	566.13	-2.43	797747.76	500075.46	32°22'19.350"N	103°30'10.127"W	10.00	EOC
10803.26	89.315	359.754	10483.00	566.13	566.13	-2.43	797747.76	500075.49	32°22'19.351"N	103°30'10.127"W	2.00	TL
10825.00†	89.315	359.754	10483.26	587.87	587.87	-2.52	797747.67	500097.23	32°22'19.566"N	103°30'10.126"W	0.00	
10925.00†	89.315	359.754	10484.46	687.87	687.86	-2.95	797747.24	500197.22	32°22'20.555"N	103°30'10.122"W	0.00	
11025.00†	89.315	359.754	10485.65	787.86	787.85	-3.38	797746.81	500297.21	32°22'21.544"N	103°30'10.118"W	0.00	
11125.00†	89.315	359.754	10486.84	887.85	887.84	-3.81	797746.38	500397.20	32°22'22.534"N	103°30'10.114"W	0.00	
11225.00†	89.315	359.754	10488.04	987.84	987.84	-4.24	797745.95	500497.19	32°22'23.523"N	103°30'10.110"W	0.00	
11325.00†	89.315	359.754	10489.23	1087.84	1087.83	-4.67	797745.52	500597.18	32°22'24.513"N	103°30'10.106"W	0.00	
11425.00†	89.315	359.754	10490.43	1187.83	1187.82	-5.10	797745.09	500697.17	32°22'25.502"N	103°30'10.102"W	0.00	
11525.00†	89.315	359.754	10491.62	1287.82	1287.81	-5.53	797744.67	500797.16	32°22'26.492"N	103°30'10.098"W	0.00	
11625.00†	89.315	359.754	10492.82	1387.82	1387.80	-5.95	797744.24	500897.15	32°22'27.481"N	103°30'10.094"W	0.00	
11725.00†	89.315	359.754	10494.01	1487.81	1487.80	-6.38	797743.81	500997.14	32°22'28.470"N	103°30'10.089"W	0.00	
11825.00†	89.315	359.754	10495.21	1587.80	1587.79	-6.81	797743.38	501097.13	32°22'29.460"N	103°30'10.085"W	0.00	
11925.00†	89.315	359.754	10496.40	1687.79	1687.78	-7.24	797742.95	501197.12	32°22'30.449"N	103°30'10.081"W	0.00	
12025.00†	89.315	359.754	10497.60	1787.79	1787.77	-7.67	797742.52	501297.11	32°22'31.439"N	103°30'10.077"W	0.00	
12125.00†	89.315	359.754	10498.79	1887.78	1887.76	-8.10	797742.09	501397.10	32°22'32.428"N	103°30'10.073"W	0.00	



Planned Wellpath Report

Rev-A.0
Page 5 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.16H SHL
Area	Lea County, NM	Well	No.16H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.16H PWB
Facility	Gaucho Unit No.16H & No.17H		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12225.00†	89.315	359.754	10499.99	1987.77	1987.76	-8.53	797741.66	501497.09	32°22'33.417"N	103°30'10.069"W	0.00	
12325.00†	89.315	359.754	10501.18	2087.77	2087.75	-8.95	797741.24	501597.08	32°22'34.407"N	103°30'10.065"W	0.00	
12425.00†	89.315	359.754	10502.38	2187.76	2187.74	-9.38	797740.81	501697.07	32°22'35.396"N	103°30'10.061"W	0.00	
12525.00†	89.315	359.754	10503.57	2287.75	2287.73	-9.81	797740.38	501797.06	32°22'36.386"N	103°30'10.057"W	0.00	
12625.00†	89.315	359.754	10504.77	2387.74	2387.72	-10.24	797739.95	501897.05	32°22'37.375"N	103°30'10.053"W	0.00	
12725.00†	89.315	359.754	10505.96	2487.74	2487.71	-10.67	797739.52	501997.04	32°22'38.365"N	103°30'10.049"W	0.00	
12825.00†	89.315	359.754	10507.16	2587.73	2587.71	-11.10	797739.09	502097.03	32°22'39.354"N	103°30'10.045"W	0.00	
12925.00†	89.315	359.754	10508.35	2687.72	2687.70	-11.53	797738.66	502197.02	32°22'40.343"N	103°30'10.041"W	0.00	
13025.00†	89.315	359.754	10509.55	2787.72	2787.69	-11.96	797738.23	502297.01	32°22'41.333"N	103°30'10.037"W	0.00	
13125.00†	89.315	359.754	10510.74	2887.71	2887.68	-12.38	797737.81	502397.00	32°22'42.322"N	103°30'10.033"W	0.00	
13225.00†	89.315	359.754	10511.94	2987.70	2987.67	-12.81	797737.38	502496.99	32°22'43.312"N	103°30'10.029"W	0.00	
13325.00†	89.315	359.754	10513.13	3087.69	3087.67	-13.24	797736.95	502596.98	32°22'44.301"N	103°30'10.025"W	0.00	
13425.00†	89.315	359.754	10514.33	3187.69	3187.66	-13.67	797736.52	502696.97	32°22'45.290"N	103°30'10.021"W	0.00	
13525.00†	89.315	359.754	10515.52	3287.68	3287.65	-14.10	797736.09	502796.96	32°22'46.280"N	103°30'10.017"W	0.00	
13625.00†	89.315	359.754	10516.72	3387.67	3387.64	-14.53	797735.66	502896.95	32°22'47.269"N	103°30'10.012"W	0.00	
13725.00†	89.315	359.754	10517.91	3487.67	3487.63	-14.96	797735.23	502996.94	32°22'48.259"N	103°30'10.008"W	0.00	
13825.00†	89.315	359.754	10519.11	3587.66	3587.63	-15.39	797734.80	503096.93	32°22'49.248"N	103°30'10.004"W	0.00	
13925.00†	89.315	359.754	10520.30	3687.65	3687.62	-15.81	797734.38	503196.92	32°22'50.237"N	103°30'10.000"W	0.00	
14025.00†	89.315	359.754	10521.50	3787.64	3787.61	-16.24	797733.95	503296.91	32°22'51.227"N	103°30'09.996"W	0.00	
14125.00†	89.315	359.754	10522.69	3887.64	3887.60	-16.67	797733.52	503396.90	32°22'52.216"N	103°30'09.992"W	0.00	
14225.00†	89.315	359.754	10523.89	3987.63	3987.59	-17.10	797733.09	503496.89	32°22'53.206"N	103°30'09.988"W	0.00	
14325.00†	89.315	359.754	10525.08	4087.62	4087.59	-17.53	797732.66	503596.88	32°22'54.195"N	103°30'09.984"W	0.00	
14425.00†	89.315	359.754	10526.28	4187.62	4187.58	-17.96	797732.23	503696.87	32°22'55.185"N	103°30'09.980"W	0.00	
14525.00†	89.315	359.754	10527.47	4287.61	4287.57	-18.39	797731.80	503796.86	32°22'56.174"N	103°30'09.976"W	0.00	
14625.00†	89.315	359.754	10528.67	4387.60	4387.56	-18.82	797731.37	503896.85	32°22'57.163"N	103°30'09.972"W	0.00	
14725.00†	89.315	359.754	10529.86	4487.59	4487.55	-19.24	797730.95	503996.84	32°22'58.153"N	103°30'09.968"W	0.00	
14825.00†	89.315	359.754	10531.06	4587.59	4587.55	-19.67	797730.52	504096.83	32°22'59.142"N	103°30'09.964"W	0.00	
14925.00†	89.315	359.754	10532.25	4687.58	4687.54	-20.10	797730.09	504196.82	32°23'00.132"N	103°30'09.960"W	0.00	
14987.64	89.315	359.754	10533.00†	4750.22	4750.17	-20.37	797729.82	504259.46	32°23'00.751"N	103°30'09.957"W	0.00	No.16H PBHL



Planned Wellpath Report

Rev-A.0
Page 6 of 6



REFERENCE WELLPATH IDENTIFICATION

Operator	Devon Energy	Slot	No.16H SHL
Area	Lea County, NM	Well	No.16H
Field	(Gaucho) Sec 17, T22S, R34E	Wellbore	No.16H PWB
Facility	Gaucho Unit No.16H & No.17H		

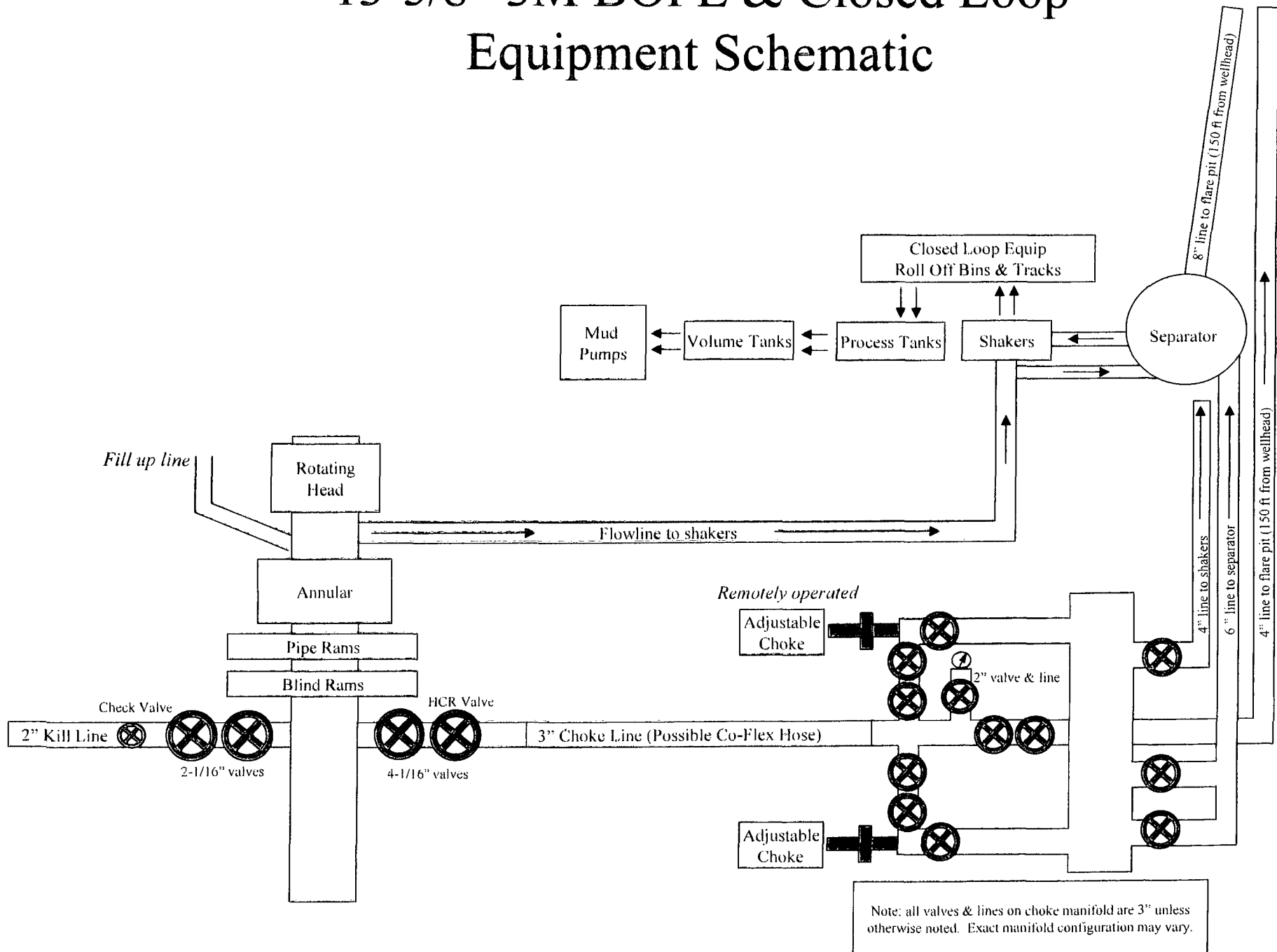
TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) No.16H PBHL	14987.64	10533.00	4750.17	-20.37	797729.82	504259.46	32°23'00.751"N	103°30'09.957"W	point

SURVEY PROGRAM - Ref Wellbore: No.16H PWB Ref Wellpath: Rev-A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
3471.90	14987.64	NaviTrak (Standard)		No.16H PWB

13-5/8" 3M BOPE & Closed Loop Equipment Schematic

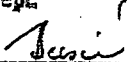


NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP
GAUCHO UNIT 16H

Surface Location: 200 FSL & 670 FEL, Unit P, Sec 19 T22S R34E, LEA, NM
Bottom Hole Location: 330 FNL & 660 FEL, Unit A, Sec 19 T22S R34E, LEA, NM

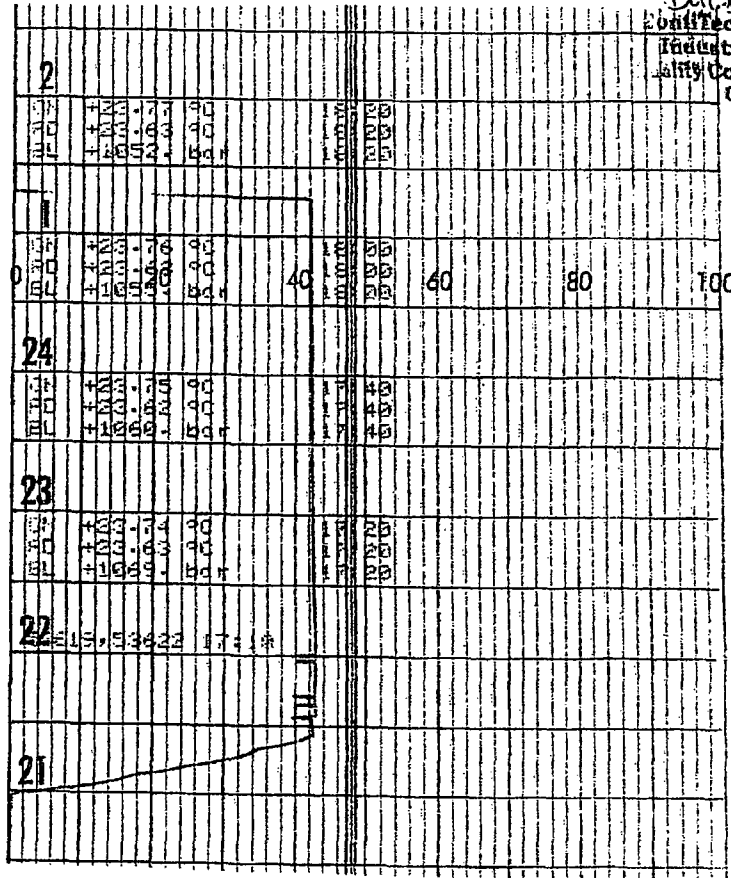
- 1) Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
- 2) Wear ring will be properly installed in head.
- 3) Blowout preventer and all associated fittings will be in operable condition to withstand a minimum of 3000psi working pressure.
- 4) All fittings will be flanged.
- 5) A full bore safety valve tested to a minimum 3000psi WP with proper thread connections will be available on the rotary rig floor at all times.
- 6) All choke lines will be anchored to prevent movement.
- 7) All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
- 8) Will maintain a kelly cock attached to the kelly.
- 9) Hand wheels and wrenches will be properly installed and tested for safe operation.
- 10) Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
- 11) All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE						CERT. N°:	1713
PURCHASER: ContiTech Beattie Co.						P.O. N°:	002808
CONTITECH ORDER N°: 426127			HOSE TYPE: 3" ID		Choke and Kill Hose		
HOSE SERIAL N°: 53622			NOMINAL / ACTUAL LENGTH: 10,67 m				
W.P. 68,96 MPa		10000 psi	T.P. 103,4 MPa	15000 psi	Duration:	60 min.	
Pressure test with water at ambient temperature							
See attachment. (1 page)							
↑ 10 mm = 10 Min. → 10 mm = 25 MPa							
COUPLINGS Type		Serial N°		Quality		Heat N°	
3" coupling with 4 1/16" Flange end		5503 2029		AISI 4130 AISI 4130		N1590P 27566	
INFOCHIP INSTALLED						API Spec 16 C Temperature rate:"B"	
All metal parts are flawless				Hose conform to NACE MR 01-75			
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.							
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.							
COUNTRY OF ORIGIN HUNGARY/EU							
Date: 25. August. 2008	Inspector		Quality Control ContiTech Rubber Industrial Kft. Quality Control Dept.  				

H&P 416

Page: 1/1

HARTMANN &





Fluid Technology

ContiTech Beattie Corp.

Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

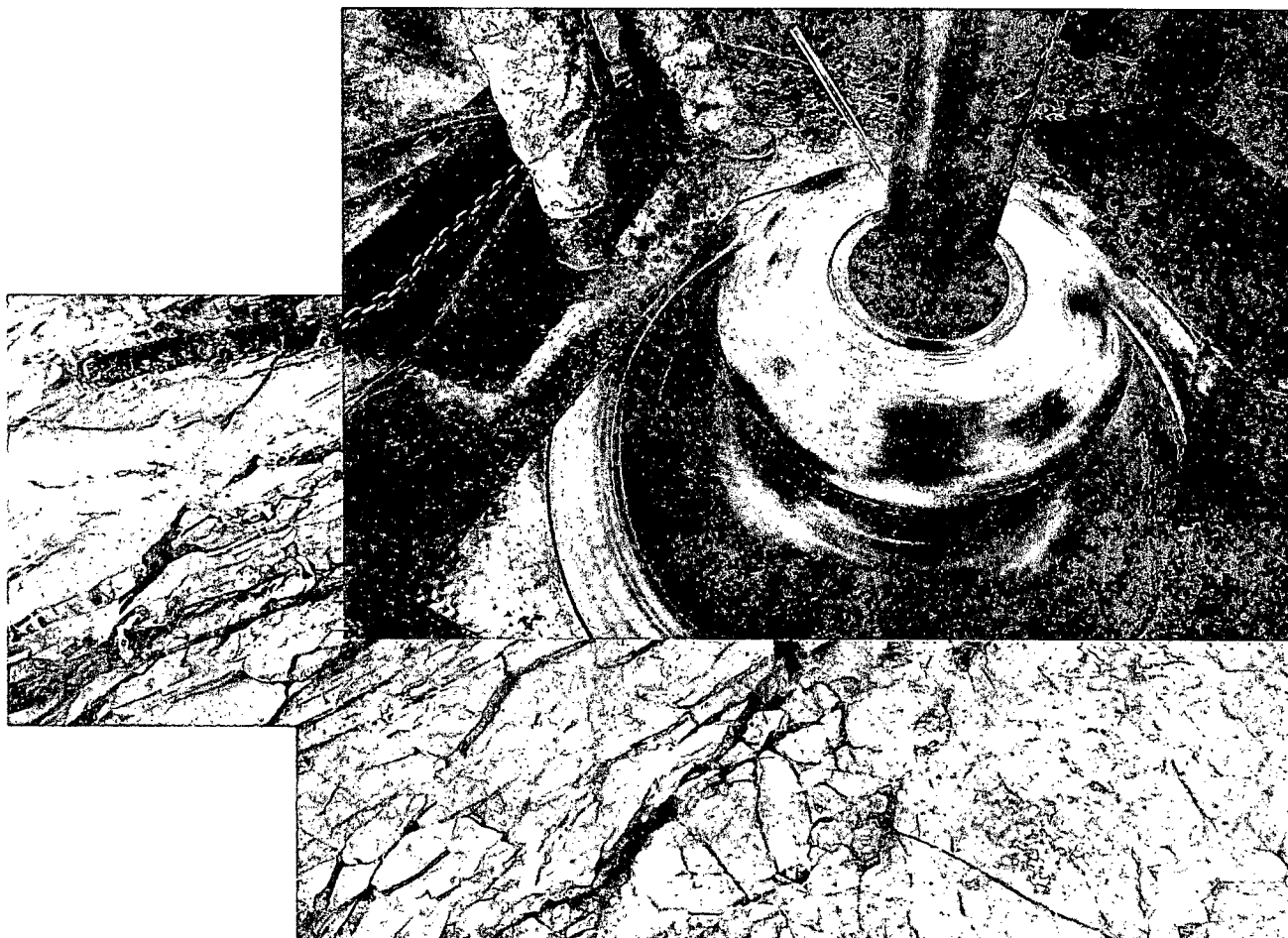
Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com





Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
August 2013

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

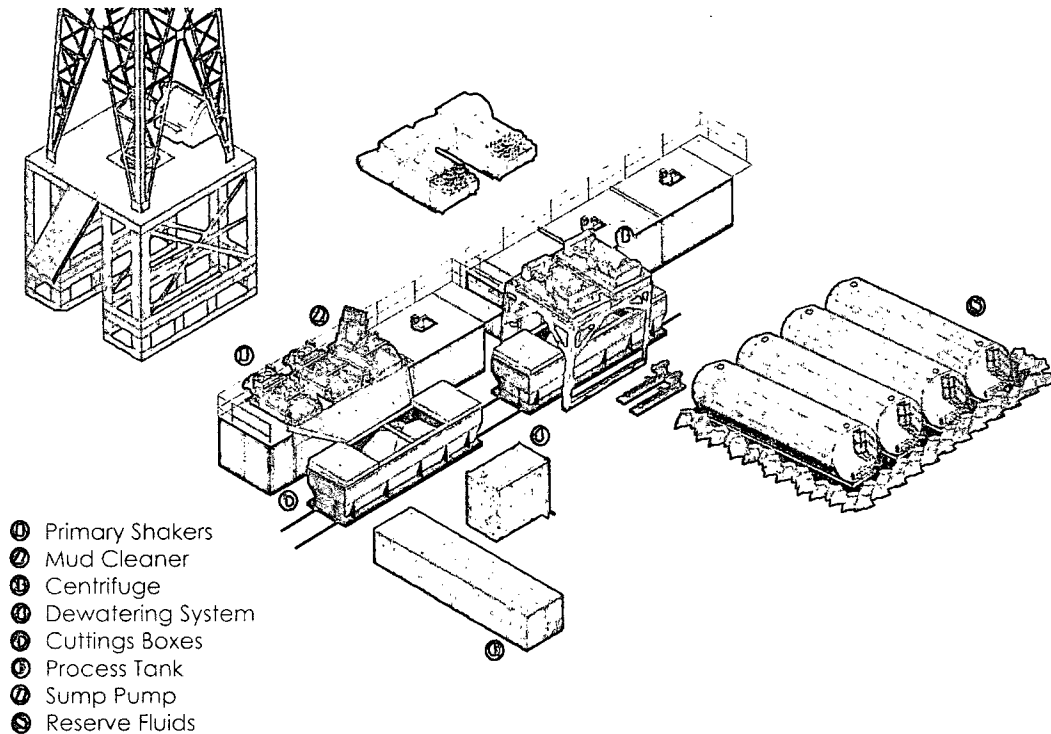
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



Closed Loop Schematic



Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

H&P Flex Rig Location Layout

2 Well Pad

