Form 3160-3
(June 2015)

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FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

F/F

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM004312

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
BUFFALO 12-1 FED COM 2BS
4H (322717)

2. Name of Operator
CHISHOLM ENERGY OPERATING LLC (372137)

9. API Well No.
30-025-

3a. Address
801 Cherry St., Suite 1200 Unit 20 Fort Worth TX 76102

3b. Phone No. *(include area code)*
(817)469-1104

10. Field and Pool, or Exploratory (8146)
BUFFALO / BONE SPRING, SE

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface LOT O / 443 FSL / 1350 FEL / LAT 32.668658 / LONG -103.6124186

At proposed prod. zone LOT 2 / 330 FNL / 1660 FEL / LAT 32.6960216 / LONG -103.6133535

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 12 / T19S / R33E / NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
330 feet	650.45	325.09
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. in file**
60 feet	10050 feet / 19883 feet	FED: NMB001468
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3728 feet	08/15/2018	30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Jennifer Elrod / Ph: (817)953-3728	02/06/2018
Title: Senior Regulatory Technician		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	08/23/2018
Title: Assistant Field Manager Lands & Minerals	Office: CARLSBAD	

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.

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.

Requested GCP 09/07/18
GCP Rec 09/07/18

KA 09/07/18

APPROVED WITH CONDITIONS

Approval Date: 08/23/2018

(Continued on page 2)

*(Instructions on page 2)

Double sided

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: LOT O / 443 FSL / 1350 FEL / TWSP: 19S / RANGE: 33E / SECTION: 12 / LAT: 32.668658 / LONG: -103.6124186 (TVD: 0 feet, MD: 0 feet)
   PPP: LOT O / 830 FSL / 1660 FEL / TWSP: 19S / RANGE: 33E / SECTION: 12 / LAT: 32.6697249 / LONG: -103.6134231 (TVD: 10050 feet, MD: 10406 feet)
   BHL: LOT 2 / 330 FNL / 1660 FEL / TWSP: 19S / RANGE: 33E / SECTION: 1 / LAT: 32.6960216 / LONG: -103.6133535 (TVD: 10050 feet, MD: 19883 feet)

BLM Point of Contact

Name: Katrina Ponder

Title: Geologist

Phone: 5752345969

Email: kponder@blm.gov

Approval Date: 08/23/2018

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

08/23/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently 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 the company I represent, 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.

NAME: Jennifer Elrod **Signed on:** 01/31/2018

Title: Senior Regulatory Technician

Street Address: 801 CHERRY STREET, SUITE 1200-UNIT 20

City: Fort Worth **State:** TX **Zip:** 76102

Phone: (817)953-3728

Email address: jelrod@chisholmenergy.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

APD ID: 10400026141 **Submission Date:** 02/06/2018

Operator Name: CHISHOLM ENERGY OPERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400026141 **Tie to previous NOS?** 10400022930 **Submission Date:** 02/06/2018

BLM Office: CARLSBAD **User:** Jennifer Elrod **Title:** Senior Regulatory Technician

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM004312 **Lease Acres:** 650.45

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO **APD Operator:** CHISHOLM ENERGY OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: CHISHOLM ENERGY OPERATING LLC

Operator Address: 801 Cherry St., Suite 1200 Unit 20 **Zip:** 76102

Operator PO Box:

Operator City: Fort Worth **State:** TX

Operator Phone: (817)469-1104

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Mater Development Plan name:**

Well in Master SUPO? NEW **Master SUPO name:** Buffalo

Well in Master Drilling Plan? NEW **Master Drilling Plan name:** BUFFALO

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** BUFFALO **Pool Name:** BONE SPRING

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

Operator Name: CHISHOLM ENE, OPERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** BUFFALO 12-1 EAST **Number:** 4H,5H,9H,10H,11H

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 14 Miles **Distance to nearest well:** 60 FT **Distance to lease line:** 330 FT

Reservoir well spacing assigned acres Measurement: 325.09 Acres

Well plat: BUFFALO_12_1_FED_COM_2BS_4H_C102_11292017_20180109123225.pdf

Well work start Date: 08/15/2018 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 5737

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	443	FSL	1350	FEL	19S	33E	12	Lot O	32.666658	-103.6124186	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 004312	3728	0	0
KOP Leg #1	443	FSL	1350	FEL	19S	33E	12	Lot O	32.666658	-103.6124186	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 004312	-5665	9393	9393
PPP Leg #1	830	FSL	1660	FEL	19S	33E	12	Lot O	32.669724 9	-103.6134231	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 004312	-6322	10406	10050

Operator Name: CHISHOLM EN OPERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FNL	1660	FEL	19S	33E	1	Lot 2	32.6960216	-103.6133535	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 004312	-6322	19883	10050
BHL Leg #1	330	FNL	1660	FEL	19S	33E	1	Lot 2	32.6960216	-103.6133535	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 004312	-6322	19883	10050

Operator Name: CHISHOLM ENERG . ERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1500	0	1500	3728	2228	1500	J-55	54.5	BUTT	1.72	4.17	DRY	11.12	DRY	10.43
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5300	0	5300	3728	-1572	5300	J-55	40	LTC	1.37	1.41	DRY	2.45	DRY	2.97
3	PRODUCTION	8.75	5.5	NEW	API	N	0	19883	0	10050	3728	-6322	19883	P-110	17	BUTT	1.51	2.14	DRY	3.32	DRY	3.2

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Buffalo_Casing_Assumptions_2BS_20180131124424.pdf

Operator Name: CHISHOLM ENER PERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Buffalo_Casing_Assumptions_2BS_20180131124435.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Buffalo_Casing_Assumptions_2BS_20180131124453.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1150	789	2.53	12	1997	150	Class C	Sodium Metasilicate, Defoamer, KCL
SURFACE	Tail		1150	1500	460	1.32	14.8	608	150	Class C	none
INTERMEDIATE	Lead		0	4950	1405	2.31	12	3245	150	Class H	Sodium Metasilicate, Defoamer, KCL, Kol-Seal, Cellophane Flakes, ROF SealCheck
INTERMEDIATE	Tail		4950	5300	226	1.21	14.4	274	150	Class H	Fluid Loss, Dispercent, Retarder

Operator Name: CHISHOLM ENERG . ERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		4300	9550	725	2.21	11.5	1603	25	Class C	Bentonite, Compressive Strength Enhancer, Silica Fume Alternative, Fluid Loss, Defoamer, Sodium Metasilicate, Retarder
PRODUCTION	Tail		9550	19883	2837	1.15	15.8	3263	25	Class H	Fluid Loss, Suspension Agent, Retarder, Defoamer, Dispersant

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: Pason PVT system will be in place throughout the well as well as visual checks

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1500	SPUD MUD	8.5	9.2							
5300	10050	WATER-BASED MUD	8.8	9.5							
1500	5300	SALT SATURATED	9.8	10.2							

Operator Name: CHISHOLM ENER PERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

None

List of open and cased hole logs run in the well:

CBL,DS,GR,MWD

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5025 **Anticipated Surface Pressure:** 2814

Anticipated Bottom Hole Temperature(F): 163

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

H2S_Plan_20180109125732.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Buffalo_12_1_Fed_Com_2BS_4H_Plan_Numbers_20180117122520.pdf

Buffalo_12_1_Fed_Com_2BS_4H_Plot_20180117122520.pdf

Other proposed operations facets description:

We propose utilizing a cactus speed head for this well. Please see attached diagram and pressure testing statement. Also we request to use a co flex hose. Please find attached information regarding co flex hose.

Other proposed operations facets attachment:

Cactus_Speed_Head_Installation_Procedure_20180109125752.pdf

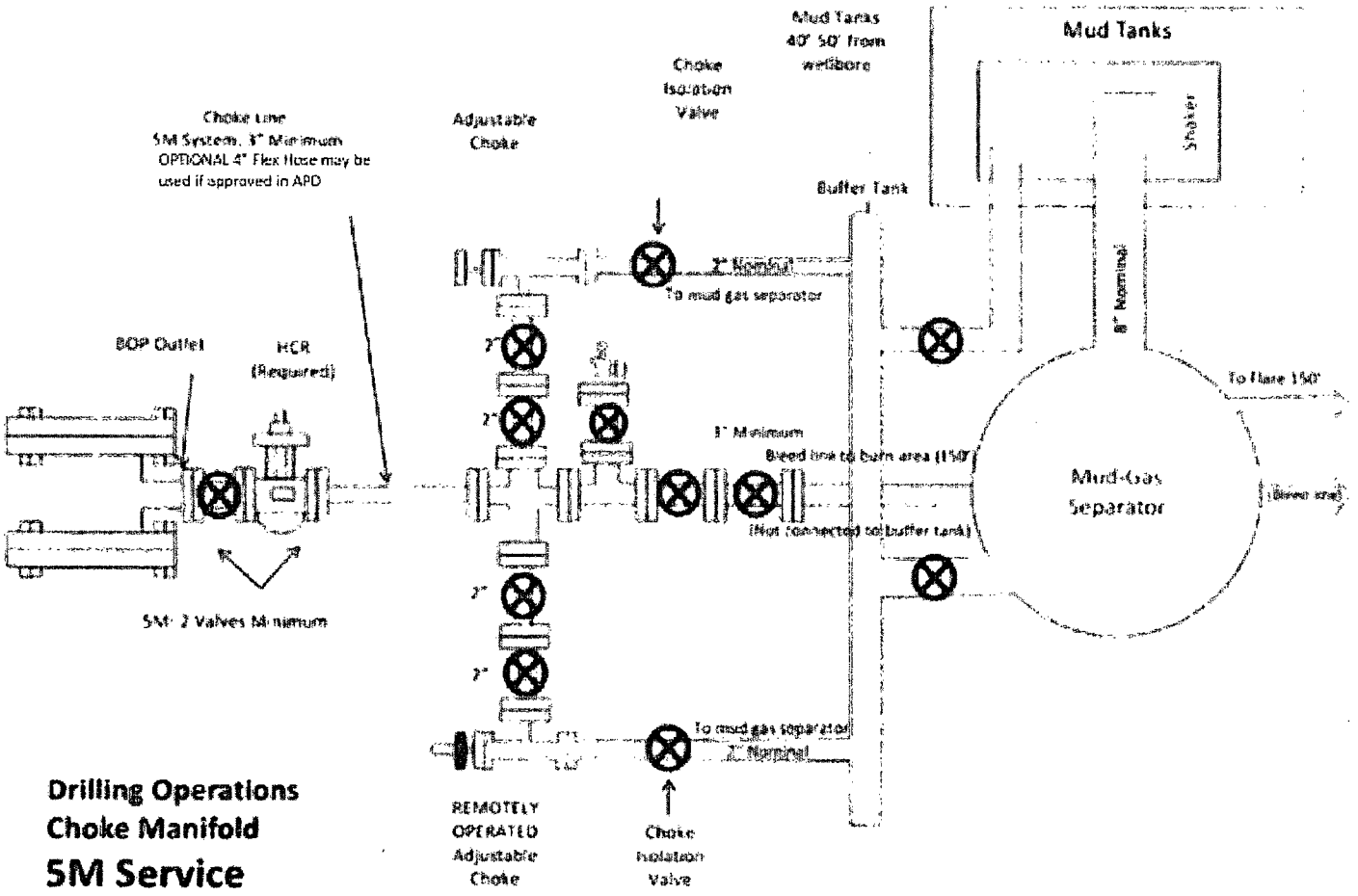
Cactus_Speedhead_Diagram_20180109125753.pdf

Cactus_Speed_Head_Pressure_Testing_Statement_20180109125753.pdf

Choke_Hose_M55_1_20180131125808.pdf

Choke_Hose_M55_2_20180131125809.pdf

Other Variance attachment:



Drilling Operations
Choke Manifold
5M Service

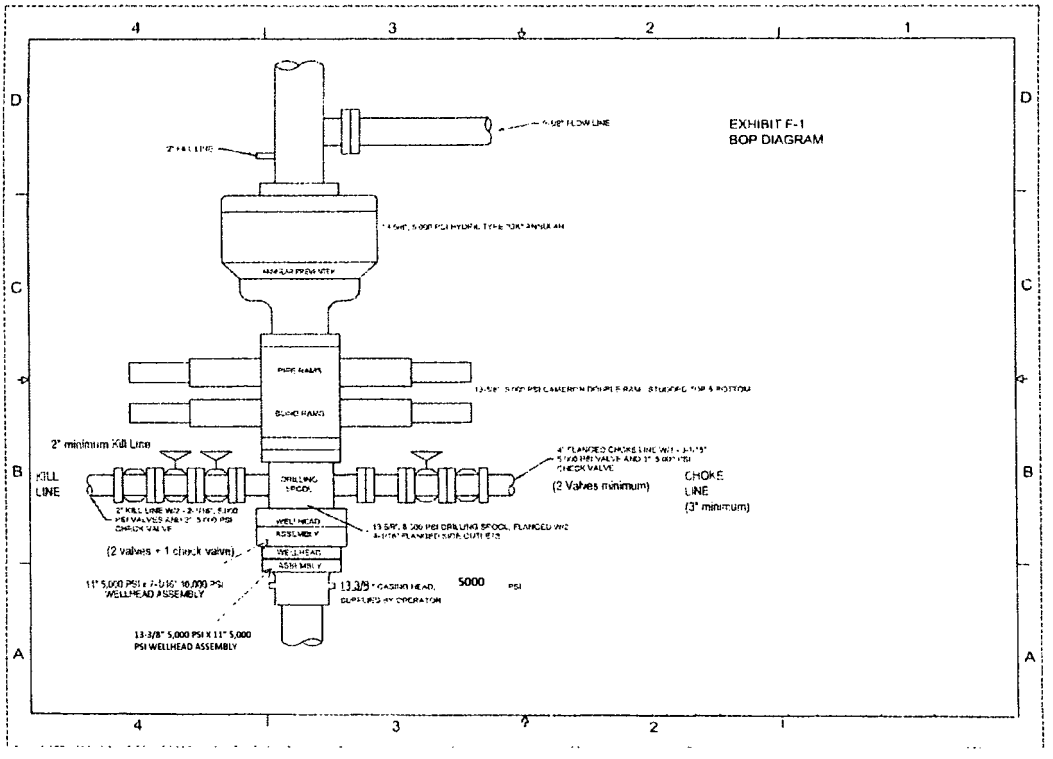


EXHIBIT F-1
BOP DIAGRAM
2" minimum Kill Line
KILL
LINE
(2 Valves minimum)
CHOKE
LINE
(3" minimum)
(2 Valves + 1 check valve)
5000
PSI
13-3/8" 5,000 PSI X 11" 5,000
PSI WELLHEAD ASSEMBLY

Casing Program: **Minis (13 3/8" x 9 5/8" x 5 1/2")**

Open Hole Size (Inches)	Casing Depth; From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	Anticipated Mud Weight (ppg)	Burst (psi)	Burst SF (1.125)	Collapse (psi)	Collapse SF (1.125)	Tension Joint (klbs)	Air Weight (lbs)	Tension Joint SF (1.8)	Tension Body (klbs)	Air Weight (lbs)	Tension Body SF (1.8)
Surface																			
17.5"	0'	1,500'	1,500'	13 3/8"	54.5	J-55	BTC	New	8.4	2730	4.17	1130	1.72	909,000	81,750	11.12	853,000	81,750	10.43
Intermediate																			
12.25"	0'	5,300'	5,300'	9 5/8"	40	J-55	LTC	New	10.2	3950	1.41	2570	1.37	520,000	212,000	2.45	630,000	212,000	2.97
Production																			
8.75"	0'	19,883'	10,050'	5 1/2"	17	P110	BTC	New	9.5	10640	2.14	7480	1.51	568,000	170,850	3.32	546,000	170,850	3.20

Casing Design Criteria and Casing Loading Assumptions:

Surface

Tension	A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	8.4 ppg
Collapse	A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	8.4 ppg
Burst	A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	8.4 ppg

Intermediate

Tension	A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	10.2 ppg
Collapse	A 1.125 design factor with 1/3 TVD internal evacuation and collapse force equal to a mud gradient of:	10.2 ppg
Burst	A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	10.2 ppg

Production

Tension	A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	9.5 ppg
Collapse	A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	9.5 ppg
Burst	A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	9.5 ppg

Casing Program: **Minis (13 3/8" x 9 5/8" x 5 1/2")**

Open Hole Size (Inches)	Casing Depth; From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	Anticipated Mud Weight (ppg)	Burst (psi)	Burst SF (1.125)	Collapse (psi)	Collapse SF (1.125)	Tension Joint (klbs)	Air Weight (lbs)	Tension Joint SF (1.8)	Tension Body (klbs)	Air Weight (lbs)	Tension Body SF (1.8)
Surface																			
17.5"	0'	1,500'	1,500'	13 3/8"	54.5	J-55	BTC	New	8.4	2730	4.17	1130	1.72	909,000	81,750	11.12	853,000	81,750	10.43
Intermediate																			
12.25"	0'	5,300'	5,300'	9 5/8"	40	J-55	LTC	New	10.2	3950	1.41	2570	1.37	520,000	212,000	2.45	630,000	212,000	2.97
Production																			
8.75"	0'	19,883'	10,050'	5 1/2"	17	P110	BTC	New	9.5	10640	2.14	7480	1.51	568,000	170,850	3.32	546,000	170,850	3.20

Casing Design Criteria and Casing Loading Assumptions:

Surface

Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	8.4 ppg
Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	8.4 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	8.4 ppg

Intermediate

Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	10.2 ppg
Collapse A 1.125 design factor with 1/3 TVD internal evacuation and collapse force equal to a mud gradient of:	10.2 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	10.2 ppg

Production

Tension A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	9.5 ppg
Collapse A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	9.5 ppg
Burst A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	9.5 ppg

Casing Program: **Minis (13 3/8" x 9 5/8" x 5 1/2")**

Open Hole Size (Inches)	Casing Depth; From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft) TVD	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Condition	Anticipated Mud Weight (ppg)	Burst (psi)	Burst SF (1.125)	Collapse (psi)	Collapse SF (1.125)	Tension Joint (klbs)	Air Weight (lbs)	Tension Joint SF (1.8)	Tension Body (klbs)	Air Weight (lbs)	Tension Body SF (1.8)
Surface																			
17.5"	0'	1,500'	1,500'	13 3/8"	54.5	J-55	BTC	New	8.4	2730	4.17	1130	1.72	909,000	81,750	11.12	853,000	81,750	10.43
Intermediate																			
12.25"	0'	5,300'	5,300'	9 5/8"	40	J-55	LTC	New	10.2	3950	1.41	2570	1.37	520,000	212,000	2.45	630,000	212,000	2.97
Production																			
8.75"	0'	19,883'	10,050'	5 1/2"	17	P110	BTC	New	9.5	10640	2.14	7480	1.51	568,000	170,850	3.32	546,000	170,850	3.20

Casing Design Criteria and Casing Loading Assumptions:

Surface

Tension	A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	8.4 ppg
Collapse	A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	8.4 ppg
Burst	A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	8.4 ppg

Intermediate

Tension	A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	10.2 ppg
Collapse	A 1.125 design factor with 1/3 TVD internal evacuation and collapse force equal to a mud gradient of:	10.2 ppg
Burst	A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	10.2 ppg

Production

Tension	A 1.8 design factor with effects of buoyancy with a fluid equal to a mud weight of:	9.5 ppg
Collapse	A 1.125 design factor with full internal evacuation and collapse force equal to a mud gradient of:	9.5 ppg
Burst	A 1.125 design factor with full external evacuation and burst force equal to a mud gradient of:	9.5 ppg

Hydrogen Sulfide Drilling Operations Plan
Lea Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H2S
B. Physical effects and hazards
C. Principal and operation of H2S detectors, warning system and briefing areas.
D. Evacuation procedure, routes and first aid.
E. Proper use of safety equipment & life support systems
F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30-minute pressure demand air packs.

2 H2S Detection and Alarm Systems:

A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.
B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:

A. Windsock at mudpit area should be high enough to be visible.
B. Windsock on the rig floor and/ or top doghouse should be high enough to be visible.

4 Condition Flags and Signs

A. Warning sign on access road to location.
B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit BOP and Choke Diagrams

6 Communication:

A. While working under masks chalkboards will be used for communication.
B. Hand signals will be used where chalk board is inappropriate.
C. Two-way radio will be used to communicate off location in case of emergency help is required. In most cases, cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drill stem Testing:
No DSTs are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.

9 If H_25 is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

Emergency Procedures

In the event of a release of gas containing H2S, the first responder(s) must:

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with H2S monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the response.
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training in the: Detection of H2S,
and
Measures for protection against the gas.
Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered. take care to protect against exposure to Sulfur Dioxide (S02). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H2S and SO,

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H2S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO2	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Chisholm Energy Operating personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to sit e. The following call list of essential and potential responders has been prepared for use during a release.
Nearburg Producing Company's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMERP).

Cactus Speed Head Pressure Testing Statement

Our procedure is to nipple up BOP's to the surface casing, pressure test the BOP's to 5000 psi high and 250 psi low. We do not anticipate breaking any seals on the BOP from that point until rig release, however if we do break any seal, the entire BOP will be retested to 5000 psi high and 250 psi low.

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE

CERT. N°: 702

PURCHASER:	ContiTech Oil & Marine Corp.	P.O. N°:	4500421193
CONTITECH ORDER N°:	538448	HOSE TYPE: 3" ID	Choke & Kill Hose
HOSE SERIAL N°:	67554	NOMINAL / ACTUAL LENGTH:	10,67 m / 10,66 m

W.P.	68,9	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 = 20 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	1525	1519	AISI 4130	A0579N
4 1/16" 10K API Swivel Flange end			AISI 4130	035608
Hub			AISI 4130	A1126U

Not Designed For Well Testing **API Spec 16 C**

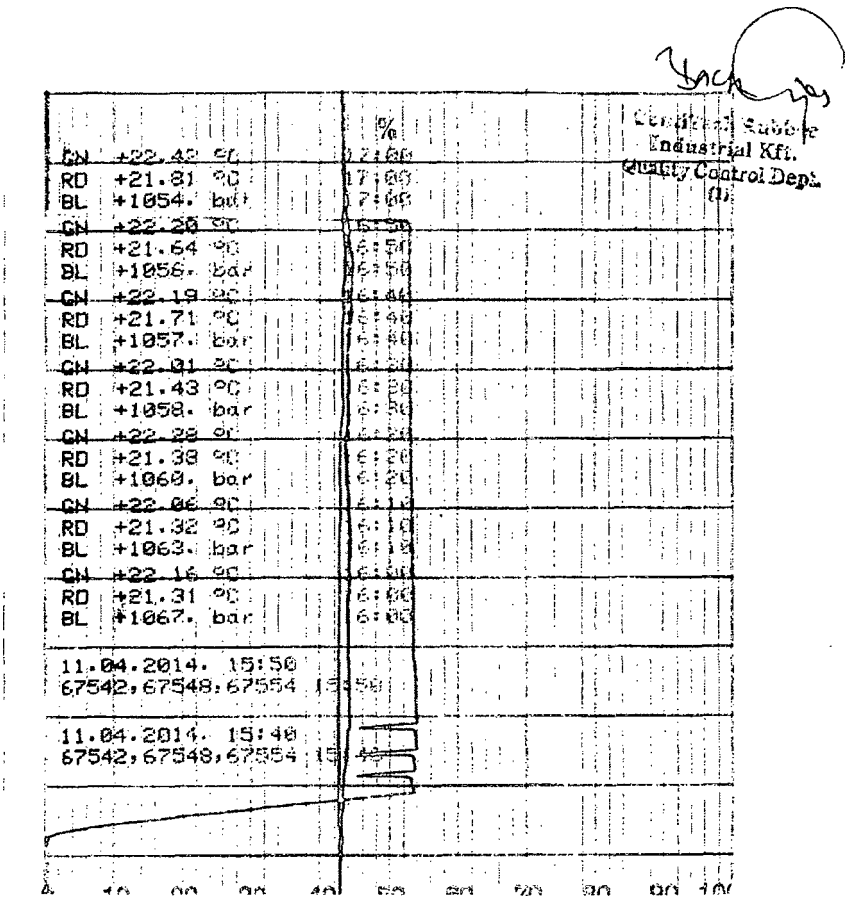
Tag No.: 66 – 1225 **Temperature rate:"B"**

All metal parts are flawless

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.

Date:	Inspector	Quality Control
14. April 2014.		ContiTech Rubber Industrial Kft. Quality Control Dept. (1)


Certified Subsidiary
Industrial Kft.
Quality Control Dept.
(1)
%
GN +22.42 °C
RD +21.81 °C
BL +1054. bar
GN +22.20 °C
RD +21.64 °C
BL +1056. bar
GN +22.19 °C
RD +21.71 °C
BL +1057. bar
GN +22.01 °C
RD +21.43 °C
BL +1058. bar
GN +22.28 °C
RD +21.38 °C
BL +1060. bar
GN +22.06 °C
RD +21.32 °C
BL +1063. bar
GN +22.16 °C
RD +21.31 °C
BL +1067. bar
11.04.2014. 15:50
67542,67548,67554
11.04.2014. 15:40
67542,67548,67554

Hose Data Sheet

CRI Order No.	538448
Customer	ContiTech Oil & Marine Corp.
Customer Order No	CBC557116 4500421193
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGE SOURC/W BX155 ST/ST INLAID R.GR.
Type of coupling other end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGE SOUR C/W BX155 ST/ST INLAID R.GR.
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	Yes
Lifting collar	Yes
Element C	Yes
Safety chain	Yes
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°:	731	
PURCHASER:	ContiTech Oil & Marine Corp.			P.O. N°:	4500300249	
CONTITECH RUBBER order N°:	536555	HOSE TYPE:	3" ID	Choke and Kill Hose		
HOSE SERIAL N°:	65346	NOMINAL / ACTUAL LENGTH:		7,62 m / 7,66 m		
W.P. 68,9 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 = 20 MPa

COUPLINGS Type	Serial N°	Quality	Heat N°
3" coupling with	3428 3433	AISI 4130	A1031U
4 1/16" API 10K Swivel Flange end		AISI 4130	034435 54961
Hub		AISI 4130	A0462U

NOT DESIGNED FOR WELL TESTING **API Spec 16 C**

66 – 1042 NBRSN661042 **Temperature rate:"B"**

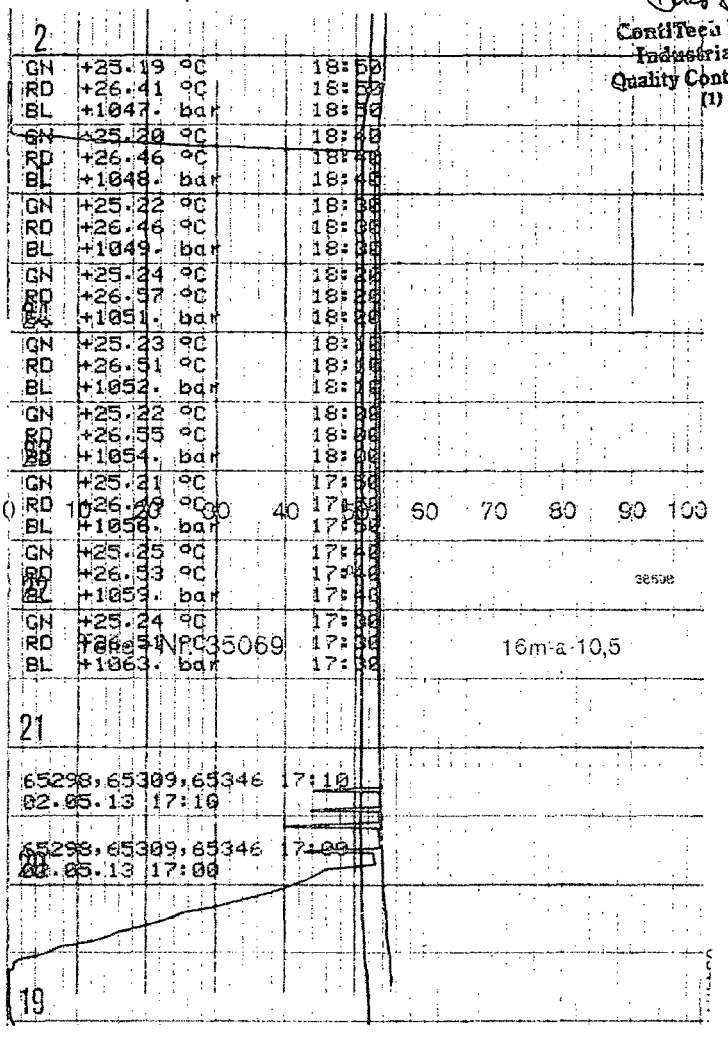
All metal parts are flawless

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.

Date:	Inspector	Quality Control
03. May 2013.		ContiTech Rubber Industrial Kft. Quality Control Dept. (1)

ContiTech Rubber Industrial Kft. Quality Control Dept. (1)



Hose Data Sheet

CRI Order No.	536555
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500300249 CBC384527
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	25 ft
Type of coupling one end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGEC/W BX155 ST/ST INLAID RING GR
Type of coupling other end	FLANGE 4.1/16" 10KPSI API SPEC 17D SV SWIVEL FLANGE C/W BX155 ST/ST INLAID RING GR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL RESISTANT
Safety clamp	Yes
Lifting collar	Yes
Element C	Yes
Safety chain	Yes
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
MBR operating [m]	1,60
MBR storage [m]	1,40
Type of packing	WOODEN CRATE ISPM-15

APD ID: 10400026141 **Submission Date:** 02/06/2018

Operator Name: CHISHOLM ENERGY OPERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

BUFFALO_12_1_FED_COM_2BS_4H_VICINITY_MAP_11292017_20180109125852.pdf
BUFFALO_12_1_FED_COM_2BS_4H_ACCESS_ROUTE_MAP_11292017_20180109130101.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

BUFFALO_12_1_FED_COM_2BS_4H_SITE_MAP_20180109130030.pdf

New road type: RESOURCE

Length: 1100 Feet **Width (ft.):** 30

Max slope (%): 2 **Max grade (%):** 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 15

New road access erosion control: Road will be crowned and ditched to prevent erosion

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: BOTH

Access surfacing type description: 6" rolled and compacted caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description: Surfacing material will consist of native caliche obtained from the well site if possible. Otherwise, caliche will be hauled from nearest caliche pit
Onsite topsoil removal process: Grading

Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and be consistent with local drainage patterns.
Road Drainage Control Structures (DCS) description: No drainage control necessary

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

BUFFALO_12_1_FED_COM_2BS_4H_MILE_RADIUS_MAP_11292017_20180109130126.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: If well is productive, a tank battery will be installed on well pad. Tank battery construction and instillation plans will be submitted via Sundry Notice.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING
Water source type: GW WELL
Describe type:
Source latitude:
Source longitude:
Source datum:
Water source permit type: PRIVATE CONTRACT
Source land ownership: PRIVATE
Water source transport method: PIPELINE
Source transportation land ownership: PRIVATE
Water source volume (barrels): 120000
Source volume (acre-feet): 15.467172
Source volume (gal): 5040000

Water source and transportation map:

BUFFALO_12_1_FED_COM_2BS_4H_ACCESS_ROUTE_MAP_11292017_20180109130221.pdf

Water source comments:

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**
Well target aquifer:
Est. depth to top of aquifer(ft): **Est thickness of aquifer:**
Aquifer comments:
Aquifer documentation:

Well depth (ft): **Well casing type:**
Well casing outside diameter (in.): **Well casing inside diameter (in.):**
New water well casing? **Used casing source:**
Drilling method: **Drill material:**
Grout material: **Grout depth:**
Casing length (ft.): **Casing top depth (ft.):**
Well Production type: **Completion Method:**
Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Construction materials from the location will be used. No additional needs are anticipated.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling Fluids and Cuttings

Amount of waste: 6000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel Tanks

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: Trucked to approved disposal facility

Waste type: COMPLETIONS/STIMULATION

Waste content description: Completions Fluids

Amount of waste: 2000 barrels

Waste disposal frequency : Daily

Safe containment description: Steel Tanks

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: FLOWBACK

Waste content description: Oil

Amount of waste: 1000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Frac Tanks

Safe containmant attachment:

Waste disposal type: OTHER **Disposal location ownership:** PRIVATE

Disposal type description: Private

Disposal location description: Haul to tank battery

Waste type: SEWAGE

Waste content description: Human Waste

Amount of waste: 50 pounds

Waste disposal frequency : Weekly

Safe containment description: Portable Toilets

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Serviced by toilet rental company

Waste type: GARBAGE

Waste content description: Trash and Debris

Amount of waste: 200 pounds

Waste disposal frequency : One Time Only

Safe containment description: roll off bin with netted top

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Truck to commercial waste facility

Waste type: PRODUCED WATER

Waste content description: Produced water

Amount of waste: 4000 barrels

Waste disposal frequency : One Time Only

Safe containment description: Steel Tanks

Safe containmant attachment:

Waste disposal type: OTHER **Disposal location ownership:** PRIVATE

Disposal type description: Private

Disposal location description: Trucked to tank battery

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Stored in steel bin and hauled to disposal site by truck

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

BUFFALO_12_1_FED_COM_2BS_4H_SITE_MAP_20180109131811.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: BUFFALO 12-1 EAST

Multiple Well Pad Number: 4H,5H,9H,10H,11H

Recontouring attachment:

Drainage/Erosion control construction: Drainage systems, if an, will be reshaped to the original configuration with provisions made to alleviate erosion.
Drainage/Erosion control reclamation: Any portion of the site that is not needed for future operations will be reclaimed to the original state as much as possible.

Well pad proposed disturbance (acres): 0
Road proposed disturbance (acres): 0
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 0
Total proposed disturbance: 0

Well pad interim reclamation (acres): 4.78
Road interim reclamation (acres): 0.76
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 5.54

Well pad long term disturbance (acres): 4.78
Road long term disturbance (acres): 0.76
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0
Total long term disturbance: 5.54

Disturbance Comments:

Reconstruction method: No interim reclamation planned due to future development on this pad, as well as tank battery construction if the well is productive.
Topsoil redistribution: After the area has been reshaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible.
Soil treatment: No treatment necessary

Existing Vegetation at the well pad: mesquite, shinnery oak

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: mesquite, shinnery oak

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: mesquite, shinnery oak

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: no other disturbance

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: PERENNIAL GRASS

Seed source: COMMERCIAL

Seed name: LPC-Seed Mix 2

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location: WELL PAD,WELL PAD

PLS pounds per acre: 5

Proposed seeding season: SPRING

Seed Summary

Total pounds/Acre: 5

Seed Type	Pounds/Acre
PERENNIAL GRASS	5

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Tim

Last Name: Green

Phone: (432)686-8235

Email: tgreen@chisholmenergy.com

Seedbed prep: Rip and add topsoil

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: All areas will be monitored, and weeds will be treated

Weed treatment plan attachment:

Monitoring plan description: Monitoring by lease operators during each visit

Monitoring plan attachment:

Success standards: N/A

Pit closure description: No pit, utilizing closed loop system

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

Operator Name: CHISHOLM ENE. OPERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS

ROW Applications

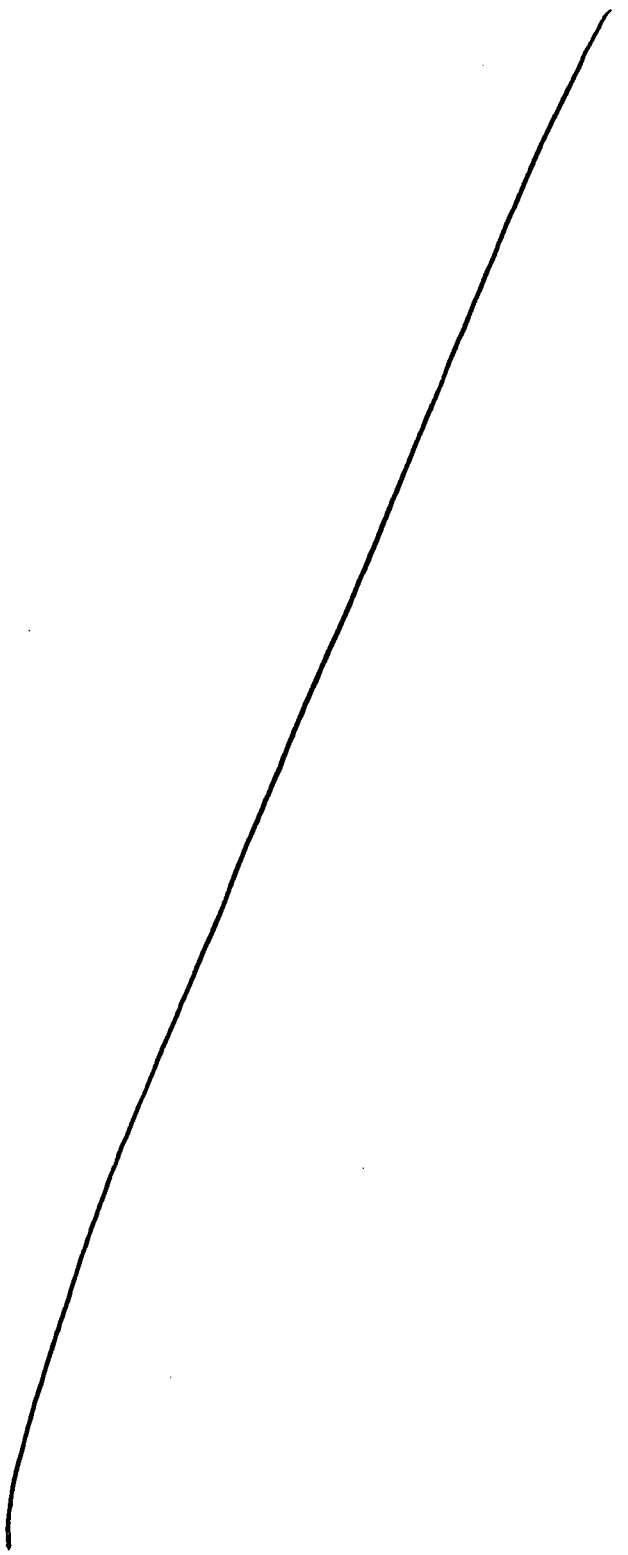
SUPO Additional Information: APD Receipt Attached

Use a previously conducted onsite? YES

Previous Onsite information: Onsite was conducted 10/26/2017; SHL was moved from Section 1 to Section 12.

Other SUPO Attachment

Buffalo_12_1_APD_Receipt_20180206081045.pdf
BUFFALO_12_1_FED_COM_2BS_4H_AERIAL_MAP_11292017_20180206081121.pdf
BUFFALO_12_1_FED_COM_2BS_4H_LOC_VERIFICATION_11292017_20180206081122.pdf



Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

08/23/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001468

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

APD ID: 10400026141 **Submission Date:** 02/06/2018

Operator Name: CHISHOLM ENERGY OPERATING LLC

Well Name: BUFFALO 12-1 FED COM 2BS **Well Number:** 4H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3728	0	0	ANHYDRITE	USEABLE WATER	No
2	SALADO	1897	1831	1831	SALT	NONE	No
3	SEVEN RIVERS	42	3686	3686	DOLOMITE,ANHYDRITE	NATURAL GAS,OIL	No
4	QUEEN	-658	4386	4386	LIMESTONE,SANDSTONE,DOLOMITE	NATURAL GAS,OIL	No
5	DELAWARE	-2578	6306	6306	SHALE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL	No
6	BONE SPRING	-3958	7686	7686	LIMESTONE,SHALE	NATURAL GAS,OIL	No
7	BONE SPRING 1ST	-5212	8940	8940	SHALE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL	No
8	BONE SPRING 2ND	-5777	9505	9505	SHALE,SANDSTONE,SILTSTONE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 12000

Equipment: Rotating Head, remote kill line, mud-gas sperator

Requesting Variance? NO

Variance request:

Testing Procedure: BOP will be tested by an independent service company to 250 psi low and 5000 psi high, per onshore order 2. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked each trip out of the hole.

Choke Diagram Attachment:

5M_Choke_Manifold_Diagram_20180109125559.pdf

BOP Diagram Attachment:

5m_BOP_Diagram_20180109125607.pdf