Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD
JAN 11 2019
RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC0061936

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.
CO GRIZZLY 3 34 FED
00510H (323139)

2. Name of Operator
CHEVRON USA INCORPORATED (4323)

9. API Well No.
30-025-45485

3a. Address
6301 Deauville Blvd. Midland TX 79706

3b. Phone No. *(include area code)*
(432)687-7866

10. Field and Pool, or Exploratory
~~COTTON DRAW~~ (96715)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SENE / 2640 FNL / 1065 FEL / LAT 32.159538 / LONG -103.657551
At proposed prod. zone NENE / 100 FNL / 330 FEL / LAT 32.181038 / LONG -103.65505

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 3 / T25S / R32E / NMP

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

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
330 feet

16. No of acres in lease
1879.24

17. Spacing Unit dedicated to this well
240

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
1400 feet

19. Proposed Depth
10748 feet / 18064 feet

20. BLM/BIA Bond No. in file
FED: CA0329

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3494 feet

22. Approximate date work will start*
04/01/2019

23. Estimated duration
150 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)	Laura Becerra / Ph: (432)687-7665	05/10/2018

Title
Permitting Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Ty Allen / Ph: (575)234-5978	12/21/2018
Title	Office	
Wildlife Biologist	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.

GCP Rec 1/11/19

APPROVED WITH CONDITIONS

KE 01/11/19

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 12/21/2018

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 I: 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: SENE / 2640 FNL / 1065 FEL / TWSP: 25S / RANGE: 32E / SECTION: 3 / LAT: 32.159538 / LONG: -103.657551 (TVD: 0 feet, MD: 0 feet)
   PPP: SENE / 2310 FNL / 330 FEL / TWSP: 25S / RANGE: 32E / SECTION: 3 / LAT: 32.160452 / LONG: -103.65516 (TVD: 10748 feet, MD: 18064 feet)
   BHL: NENE / 100 FNL / 330 FEL / TWSP: 24S / RANGE: 32E / SECTION: 34 / LAT: 32.181038 / LONG: -103.65505 (TVD: 10748 feet, MD: 18064 feet)

BLM Point of Contact

Name: Priscilla Perez
Title: Legal Instruments Examiner
Phone: 5752345934
Email: pperez@blm.gov

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.

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: Laura Becerra **Signed on:** 05/10/2018

Title: Permitting Specialist

Street Address: 6301 Deauville Blvd., S2211

City: Midland **State:** TX **Zip:** 79706

Phone: (432)687-7665

Email address: LBecerra@Chevron.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

APD ID: 10400030013 **Submission Date:** 05/10/2018

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400030013 **Tie to previous NOS?** **Submission Date:** 05/10/2018

BLM Office: CARLSBAD **User:** Laura Becerra **Title:** Permitting Specialist

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

Lease number: NMLC0061936 **Lease Acres:** 1879.24

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:** CHEVRON USA INCORPORATED

Operator letter of designation:

Operator Info

Operator Organization Name: CHEVRON USA INCORPORATED

Operator Address: 6301 Deauville Blvd.

Zip: 79706

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)687-7866

Operator Internet Address:

Section 2 - Well Information

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

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** COTTON DRAW **Pool Name:**

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

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:** CO GRIZZLY 3 27 FED **Number:** 0051H 0052H 0055H 0057H 00510H

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: 29 Miles **Distance to nearest well:** 1400 FT **Distance to lease line:** 330 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: CO_Grizzly_3_34_Fed_00510H_C_102_signed_20180510060802.pdf

Well work start Date: 04/01/2019 **Duration:** 150 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	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	2640	FNL	1065	FEL	25S	32E	3	Aliquot SENE	32.159538	-103.657551	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0061936	3494	0	0
KOP Leg #1	2640	FNL	1065	FEL	25S	32E	3	Aliquot SENE	32.159538	-103.657551	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0061936	3494	0	0
PPP Leg #1	2310	FNL	330	FEL	25S	32E	3	Aliquot SENE	32.160452	-103.65516	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0061936	-7254	18064	10748

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

	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	330	FEL	24S	32E	34	Aliquot NENE	32.180406	-103.65505	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0061936	-7254	18064	10748
BHL Leg #1	100	FNL	330	FEL	24S	32E	34	Aliquot NENE	32.181038	-103.65505	LEA	NEW MEXICO	NEW MEXICO	F	NMLC0061936	-7254	18064	10748

APD ID: 10400030013 **Submission Date:** 05/10/2018

Highlighted data reflects the most recent change

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Show Final Text

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

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	RUSTLER	3494	860	860	DOLOMITE	NONE	No
2	CASTILE	-26	3520	3520	ANHYDRITE	NONE	No
3	LAMAR	-1253	4747	4747	LIMESTONE	NONE	No
4	BELL CANYON	-1326	4820	4820	SANDSTONE	NONE	No
5	CHERRY CANYON	-2216	5710	5710	SANDSTONE	NONE	No
6	BRUSHY CANYON	-3606	7100	7100	SANDSTONE	NONE	No
7	BONE SPRING LIME	-5216	8710	8710	LIMESTONE,SHALE	NONE	No
8	UPPER AVALON SHALE	-5336	8830	8830	LIMESTONE,SHALE	NONE	No
9	BONE SPRING 1ST	-6216	9710	9710	SANDSTONE	NONE	No
10	BONE SPRING 2ND	-6853	10347	10347	LIMESTONE,SANDSTONE	NONE	No
11	BONE SPRING 2ND	-7254	10748	18064	SHALE	USEABLE WATER,NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 18064

Equipment: Minimum of a 5000 psi rig stack for drill out below intermediate casing. Stack will be tested as specified in testing requirements.

Requesting Variance? YES

Variance request: Chevron requests a variance to use a FMC UHS Multibowl wellhead, which will be run through the rig floor on surface casing. BOPE will be nippled up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

Testing Procedure: Stack will be tested as specified in the attached testing requirements upon NU and not to exceed 30 days.

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Choke Diagram Attachment:

Choke_Manifold_Schematic_20180510070309.pdf

BOP Diagram Attachment:

5K_BOPE_Schematic_20180510070329.pdf

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	880	0	880			880	J-55	55	STC	2.84	5.46	DRY	5.94	DRY	4.92
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4880	0	4880			4880	L-80	43.5	LTC	4.31	2.19	DRY	3.51	DRY	2.69
3	PRODUCTION	8.5	5.5	NEW	NON API	N	0	18064	0	18064			18064	P-110	20	OTHER - TXP	2.1	1.11	DRY	2.16	DRY	1.29

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CD_Grizzly_3_34_FED_00510H_9pt_Plan_20180510070840.pdf

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CD_Grizzly_3_34_FED_00510H_9pt_Plan_20180510071034.pdf

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

Inspection Document:

Spec Document:

Prod_Casing_Specs_20180510071323.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CD_Grizzly_3_34_FED_00510H_9pt_Plan_20180510071432.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	880	741	1.34	14.8	177	50	CLASS C	NONE
INTERMEDIATE	Lead		0	4280	1008	2.43	11.9	436	150	Class C	50/50 Poz
INTERMEDIATE	Tail		4280	4880	290	1.33	14.8	69	85	CLASS C	NONE
PRODUCTION	Lead	17064	4380	11000	906	2.46	11.9	397	50	CLASS C	NONE

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail		11000	17064	1408	1.34	14.8	336	35	CLASS C	NONE
PRODUCTION	Lead		17064	18064	105	2.19	15	41	0	CLASS H	ACID SOLUBLE

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: In compliance with Onshore Order # 2, a closed system will by utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.
Describe the mud monitoring system utilized: A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH. Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

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
4880	18064	OIL-BASED MUD	8.3	9.6							
0	880	SPUD MUD	8.3	8.7							
880	4880	OTHER : BRINE	9.5	10.2							

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Section 6 - Test, Logging, Coring

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

Drill stem tests are not planned. The logging program will be as follows:
TYPE: Mudlogs LOGS: 2 Man Mudlog INTERVAL: Int Csg to TD TIMING: Drillout of Int Csg VENDOR: TBD
TYPE: LWD LOGS: Mwd Gamma INTERVAL: Int & Prod hole TIMING: While Drilling VENDOR: TBD

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

GR,MWD,MUDLOG

Coring operation description for the well:

Conventional hole core samples are not planned. A directional survey will be run.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5912 **Anticipated Surface Pressure:** 3547.44

Anticipated Bottom Hole Temperature(F): 160

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:

CO_Grizzly_3_34_FED_005_10H_H2S_Summary_20180510075136.docx

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

CD_Grizzly_3_34_FED_00510H_Directional_Survey_20180510080822.pdf
10H_Prelim_1_Plot_20180510080854.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

CHOKE MANIFOLD SCHEMATIC

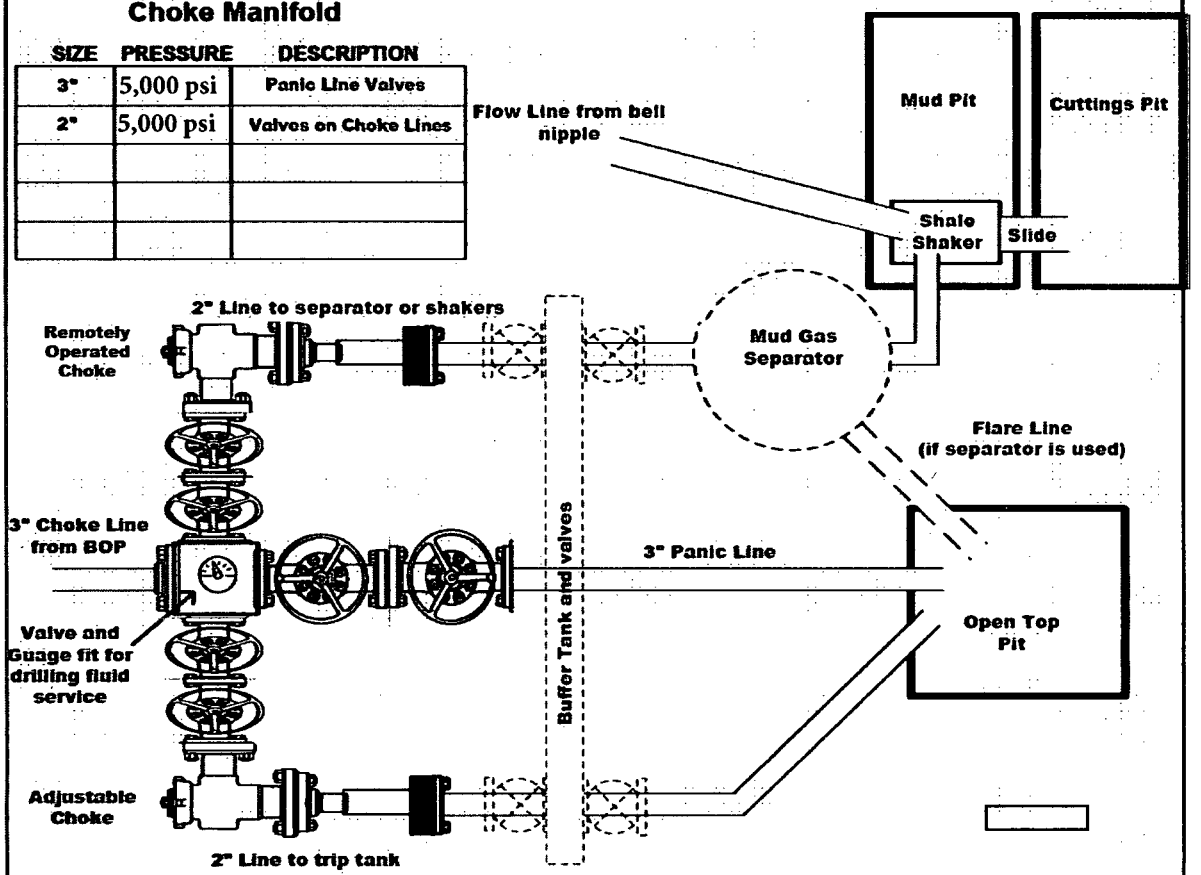
Minimum Requirements

OPERATION : Intermediate Hole Section

Minimum System Pressure Rating : 5,000 psi

Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Panic Line Valves
2"	5,000 psi	Valves on Choke Lines



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **Adjustable Chokes may be Remotely Operated but will have backup hand pump for hydraulic actuation in case of loss of rig air pressure or power.**
- ☐ **Flare and Panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.**
- ☐ **The choke line, kill line, and choke manifold lines will be straight unless turns use tee blocks or are targeted with running tess, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.**
- ☐ **All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.**
- ☐ **All manual valves will have hand wheels installed.**
- ☐ **If used, flare system will have effective method for ignition**
- ☐ **All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)**
- ☐ **If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

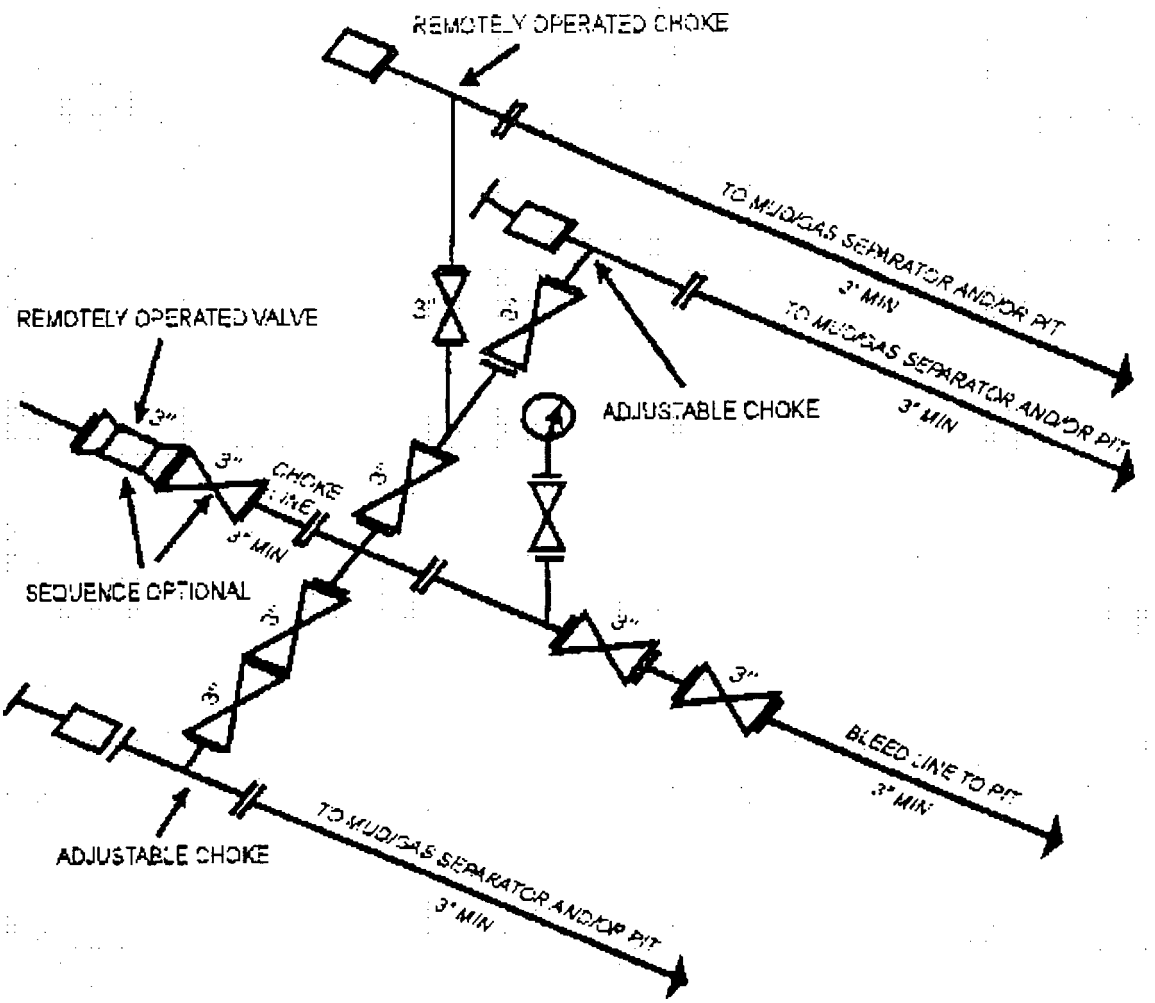
Date: _____

10M Choke Manifold SCHEMATIC

Minimum Requirements

OPERATION: Production Hole Sections

Minimum System Pressure Rating: 10,000 PSI



10M AND 15M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

(53 FR 49661, Dec. 9, 1988 and 54 FR 39528, Sept. 27, 1989)

CHOKE MANIFOLD SCHEMATIC

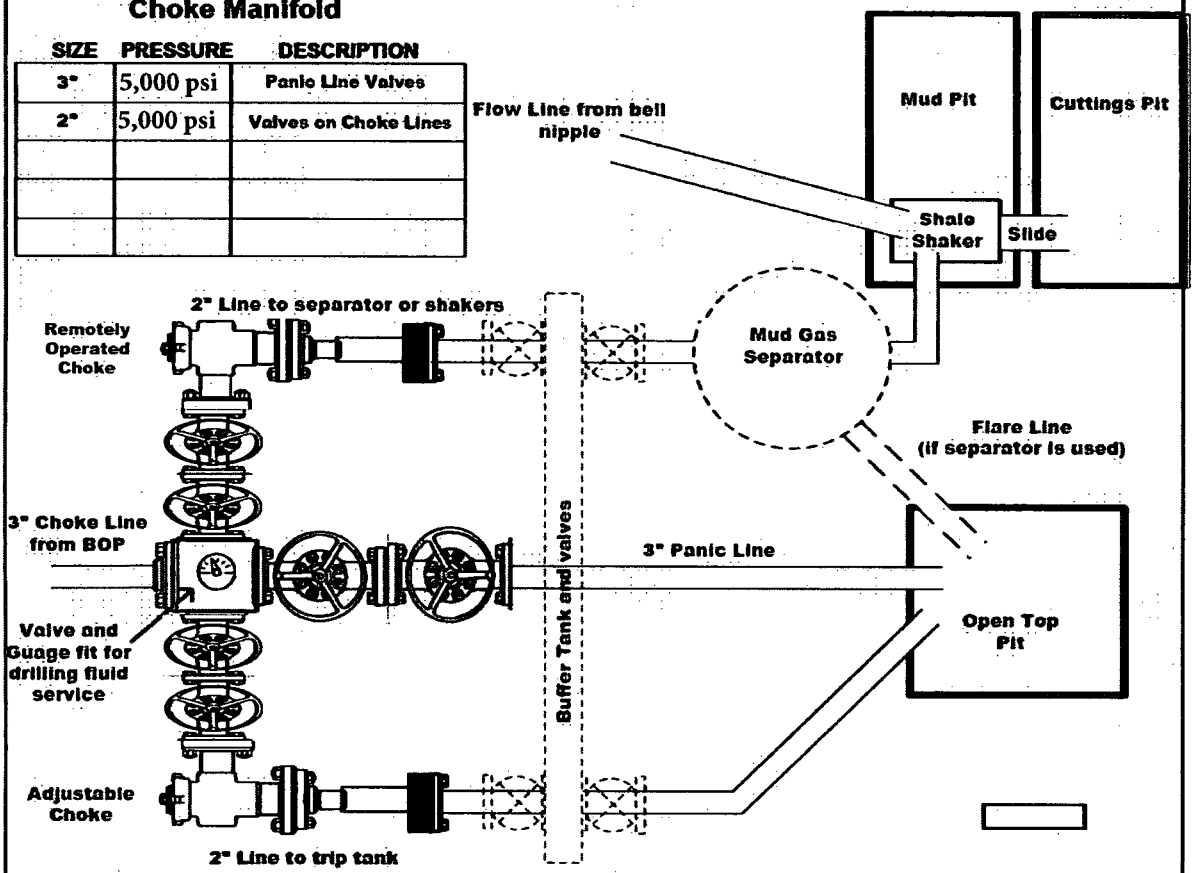
Minimum Requirements

OPERATION : Intermediate & Production Hole Section

Minimum System Pressure Rating : 5,000 psi

Choke Manifold

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Panic Line Valves
2"	5,000 psi	Valves on Choke Lines



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **Adjustable Chokes may be Remotely Operated but will have backup hand pump for hydraulic actuation in case of loss of rig air pressure or power.**
- ☐ **Flare and Panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.**
- ☐ **The choke line, kill line, and choke manifold lines will be straight unless turns use tee blocks or are targeted with running tess, and will be anchored to prevent whip and reduce vibration. This excludes the line between mud gas separator and shale shaker.**
- ☐ **All valves (except chokes) on choke line, kill line, and choke manifold will be full opening and will allow straight through flow. This excludes any valves between mud gas separator and shale shakers.**
- ☐ **All manual valves will have hand wheels installed.**
- ☐ **If used, flare system will have effective method for ignition**
- ☐ **All connections will be flanged, welded, or clamped (no threaded connections like hammer unions)**
- ☐ **If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION :Intermediate Hole Section

Minimum System Pressure Rating : 5,000 psi

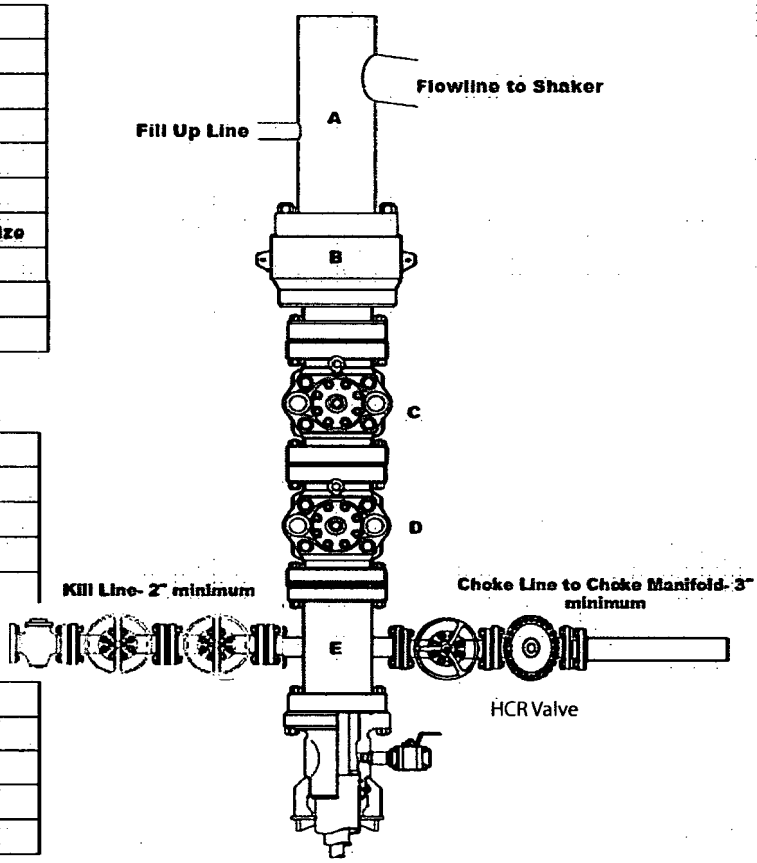
	SIZE	PRESSURE	DESCRIPTION
A		N/A	Bell Nipple
B	13 5/8"	5,000 psi	Annular
C	13 5/8"	5,000 psi	Pipe Ram
D	13 5/8"	5,000 psi	Blind Ram
E	13 5/8"	5,000 psi	Mud Cross
F			
DSA		As required for each hole size	
C-Sec			
B-Sec		13-5/8" 5K x 11" 5K	
A-Sec		13-3/8" SOW x 13-5/8" 5K	

Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000 psi	Gate Valve
2"	5,000 psi	Gate Valve
2"	5,000 psi	Check Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Gate Valve
3"	5,000 psi	HCR Valve



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **All valves on the kill line and choke line will be full opening and will allow straight though flow.**
- ☐ **The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tess, and will be anchored to prevent whip and reduce vibration.**
- ☐ **Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke line and kill line.**
- ☐ **A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.**
- ☐ **Upper kelly cock valve with handle will be available on rig floor along with safety valve and subs to fit all drill string connections in use.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION :Production Hole Section

Minimum System Pressure Rating : 10,000 psi

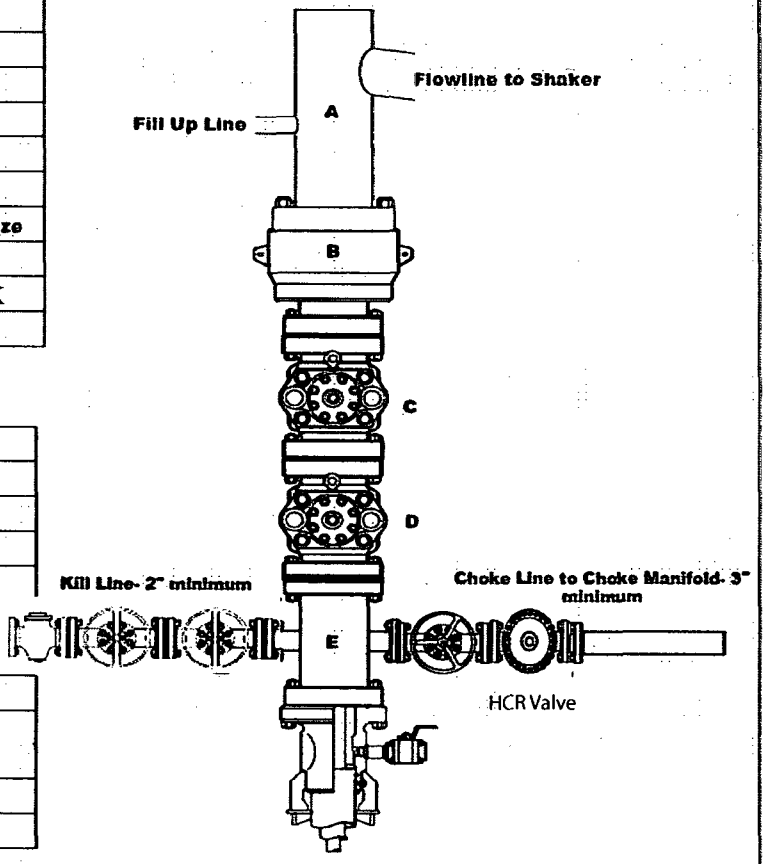
	SIZE	PRESSURE	DESCRIPTION
A		N/A	Bell Nipple
B	13 5/8"	10,000 psi	Annular
C	13 5/8"	10,000 psi	Pipe Ram
D	13 5/8"	10,000 psi	Blind Ram
E	13 5/8"	10,000 psi	Mud Cross
F			
DSA		As required for each hole size	
C-Sec		13-5/8" 10K	
B-Sec		13-5/8" 10K x 13-5/8" 5K	
A-Sec		13-3/8" SOW x 13-5/8" 5K	

Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	10,000 psi	Gate Valve
2"	10,000 psi	Gate Valve
2"	10,000 psi	Check Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	10,000 psi	Gate Valve
3"	10,000 psi	HCR Valve



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **All valves on the kill line and choke line will be full opening and will allow straight though flow.**
- ☐ **The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tess, and will be anchored to prevent whip and reduce vibration.**
- ☐ **Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke line and kill line.**
- ☐ **A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.**
- ☐ **Upper kelly cock valve with handle will be available on rig floor along with safety valve and subs to fit all drill string connections in use.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

BOPE Testing

Minimum Requirements

Closing Unit and Accumulator Checklist

The following item must be performed, verified, and checked off at least once per well prior to low/high pressure testing of BOP equipment. This must be repeated after 6 months on the same well.

☐ **Precharge pressure for each accumulator bottle must fall within the range below. Bottles may be further charged with nitrogen gas only. Tested precharge pressures must be recorded for each individual bottle and kept on location through the end of the well. Test will be conducted prior to connecting unit to BOP stack.**

Check one that applies	Accumulator working pressure rating	Minimum acceptable operating pressure	Desired precharge pressure	Maximum acceptable precharge pressure	Minimum acceptable precharge pressure
☐	1500 psi	1500 psi	750 psi	800 psi	700 psi
☐	2000 psi	2000 psi	1000 psi	1100 psi	900 psi
☐	3000 psi	3000 psi	1000 psi	1100 psi	900 psi

☐ **Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if used), close all rams, close the annular preventer, and retain a minimum of 200 psi above the maximum acceptable precharge pressure (see table above) on the closing manifold without the use of the closing pumps. This test will be performed with test pressure recorded and kept on location through the end of the well**

☐ **Accumulator fluid reservoir will be double the usable fluid volume of the accumulator system capacity. Fluid level will be maintained at manufacturer's recommendations. Usable fluid volume will be recorded. Reservior capacity will be recorded. Reservoir fluid level will be recorded along with manufacturer's recommendation. All will be kept on location through the end of the well.**

☐ **Closing unit system will have two independent power sources (not counting accumulator bottles) to close the preventers.**

☐ **Power for the closing unit pumps will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure decreases to the pre-set level. It is recommended to check that air line to accumulator pump is "ON" during each tour change.**

☐ **With accumulator bottles isolated, closing unit will be capable of opening the hydraulically-operated choke line valve (if used) plus close the annular preventer on the smallest size drill pipe within 2 minutes and obtain a minimum of 200 psi above maximum acceptable precharge pressure (see table above) on the closing manifold. Test pressure and closing time will be recorded and kept on location through the end of the well.**

☐ **Master controls for the BOPE system will be located at the accumulator and will be capable of opening and closing all preventer and the choke line valve (if used)**

☐ **Remote controls for the BOPE system will be readily accessible (clear path) to the driller and located on the rig floor (not in the dog house). Remote controls will be capable of closing all preventers.**

☐ **Record accumulator tests in drilling reports and IADC sheet**

BOPE Test Checklist

The following item must be checked off prior to beginning test

☐ **BLM will be given at least 4 hour notice prior to beginning BOPE testing**

☐ **Valve on casing head below test plug will be open**

☐ **Test will be performed using clear water.**

The following item must be performed during the BOPE testing and then checked off

☐ **BOPE will be pressure tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs, and at a minimum of 30 days intervals. Test pressure and times will be recorded by a 3rd party on a test chart and kept on location through the end of the well.**

☐ **Test plug will be used**

☐ **Ram type preventer and all related well control equipment will be tested to 250 psi (low) and 5,000 psi (high).**

☐ **Annular type preventer will be tested to 250 psi (low) and 3,500 psi (high).**

☐ **Valves will be tested from the working pressure side with all down stream valves open. The check valve will be held open to test the kill line valve(s)**

☐ **Each pressure test will be held for 10 minutes with no allowable leak off.**

☐ **Master controls and remote controls to the closing unit (accumulator) must be function tested as part of the BOP testing**

☐ **Record BOP tests and pressures in drilling reports and IADC sheet**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer along with any/all BOP and accumulator test charts and reports from 3rd parties.

Wellname: _____

Representative: _____

Date: _____

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION :Intermediate & Production Hole Section

Minimum System Pressure Rating : 5,000 psi

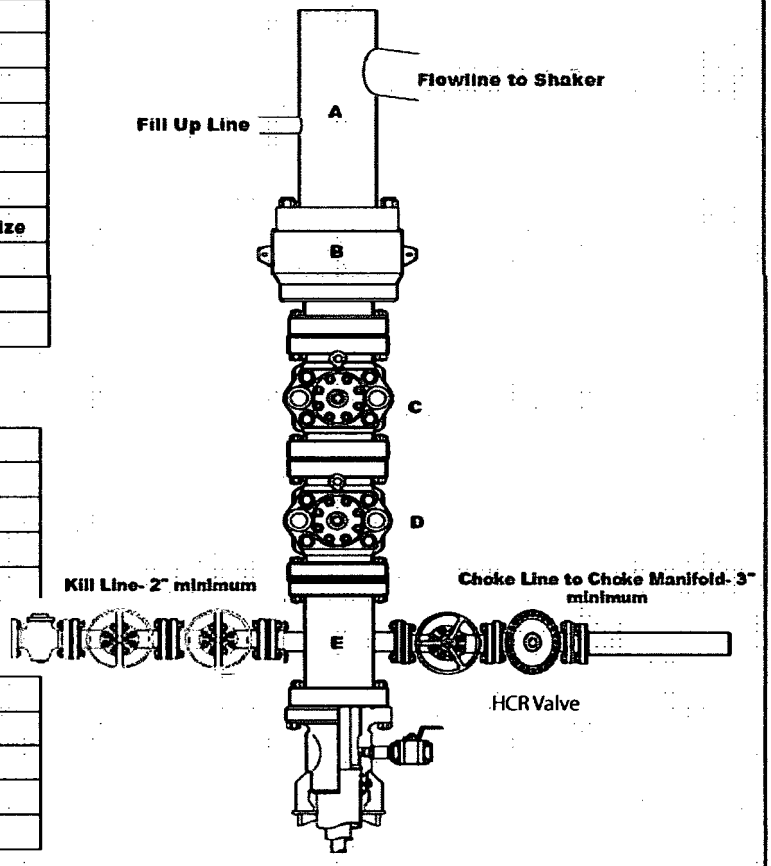
	SIZE	PRESSURE	DESCRIPTION
A		N/A	Bell Nipple
B	13 5/8"	5,000 psi	Annular
C	13 5/8"	5,000 psi	Pipe Ram
D	13 5/8"	5,000 psi	Blind Ram
E	13 5/8"	5,000 psi	Mud Cross
F			
DSA		As required for each hole size	
C-Sec			
B-Sec		13-5/8" 5K x 11" 5K	
A-Sec		13-3/8" SOW x 13-5/8" 5K	

Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000 psi	Gate Valve
2"	5,000 psi	Gate Valve
2"	5,000 psi	Check Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000 psi	Gate Valve
3"	5,000 psi	HCR Valve



Installation Checklist

The following item must be verified and checked off prior to pressure testing of BOP equipment.

- ☐ **The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.**
- ☐ **All valves on the kill line and choke line will be full opening and will allow straight though flow.**
- ☐ **The kill line and choke line will be straight unless turns use tee blocks or are targeted with running tess, and will be anchored to prevent whip and reduce vibration.**
- ☐ **Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke line and kill line.**
- ☐ **A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.**
- ☐ **Upper kelly cock valve with handle will be available on rig floor along with safety valve and subs to fit all drill string connections in use.**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer

Wellname: _____

Representative: _____

Date: _____

BOPE Testing

Minimum Requirements

Closing Unit and Accumulator Checklist

The following item must be performed, verified, and checked off at least once per well prior to low/high pressure testing of BOP equipment. This must be repeated after 6 months on the same well.

☐ **Precharge pressure for each accumulator bottle must fall within the range below. Bottles may be further charged with nitrogen gas only. Tested precharge pressures must be recorded for each individual bottle and kept on location through the end of the well. Test will be conducted prior to connecting unit to BOP stack.**

Check one that applies	Accumulator working pressure rating	Minimum acceptable operating pressure	Desired precharge pressure	Maximum acceptable precharge pressure	Minimum acceptable precharge pressure
☐	1500 psi	1500 psi	750 psi	800 psi	700 psi
☐	2000 psi	2000 psi	1000 psi	1100 psi	900 psi
☐	3000 psi	3000 psi	1000 psi	1100 psi	900 psi

☐ **Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if used), close all rams, close the annular preventer, and retain a minimum of 200 psi above the maximum acceptable precharge pressure (see table above) on the closing manifold without the use of the closing pumps. This test will be performed with test pressure recorded and kept on location through the end of the well**

☐ **Accumulator fluid reservoir will be double the usable fluid volume of the accumulator system capacity. Fluid level will be maintained at manufacturer's recommendations. Usable fluid volume will be recorded. Reservior capacity will be recorded. Reservoir fluid level will be recorded along with manufacturer's recommendation. All will be kept on location through the end of the well.**

☐ **Closing unit system will have two independent power sources (not counting accumulator bottles) to close the preventers.**

☐ **Power for the closing unit pumps will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure decreases to the pre-set level. It is recommended to check that air line to accumulator pump is "ON" during each tour change.**

☐ **With accumulator bottles isolated, closing unit will be capable of opening the hydraulically-operated choke line valve (if used) plus close the annular preventer on the smallest size drill pipe within 2 minutes and obtain a minimum of 200 psi above maximum acceptable precharge pressure (see table above) on the closing manifold. Test pressure and closing time will be recorded and kept on location through the end of the well.**

☐ **Master controls for the BOPE system will be located at the accumulator and will be capable of opening and closing all preventer and the choke line valve (if used)**

☐ **Remote controls for the BOPE system will be readily accessible (clear path) to the driller and located on the rig floor (not in the dog house). Remote controls will be capable of closing all preventers.**

☐ **Record accumulator tests in drilling reports and IADC sheet**

BOPE Test Checklist

The following item must be checked off prior to beginning test

☐ **BLM will be given at least 4 hour notice prior to beginning BOPE testing**

☐ **Valve on casing head below test plug will be open**

☐ **Test will be performed using clear water.**

The following item must be performed during the BOPE testing and then checked off

☐ **BOPE will be pressure tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs, and at a minimum of 30 days intervals. Test pressure and times will be recorded by a 3rd party on a test chart and kept on location through the end of the well.**

☐ **Test plug will be used**

☐ **Ram type preventer and all related well control equipment will be tested to 250 psi (low) and 5,000 psi (high).**

☐ **Annular type preventer will be tested to 250 psi (low) and 3,500 psi (high).**

☐ **Valves will be tested from the working pressure side with all down stream valves open. The check valve will be held open to test the kill line valve(s)**

☐ **Each pressure test will be held for 10 minutes with no allowable leak off.**

☐ **Master controls and remote controls to the closing unit (accumulator) must be function tested as part of the BOP testing**

☐ **Record BOP tests and pressures in drilling reports and IADC sheet**

After Installation Checklist is complete, fill out the information below and email to Superintendent and Drilling Engineer along with any/all BOP and accumulator test charts and reports from 3rd parties.

Wellname: _____

Representative: _____

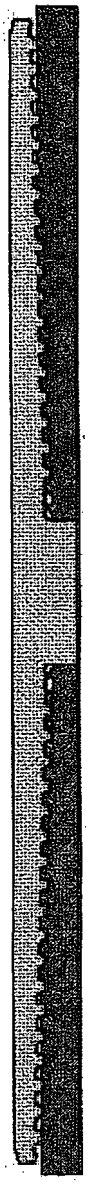
Date: _____

January 08 2015

Tenaris

Size: 5.500 in.
Wall: 0.304 in.
Weight: 17.00 lbs/ft
Grade: P110-IC
Min. Wall Thickness: 87.5 %

Connection: TenarisXP™ BTC
Casing/Tubing: CAS
Coupling Option: REGULAR API



PIPE BODY DATA

GEOMETRY

Nominal OD	**5.500** in.	Nominal Weight	**17.00** lbs/ft	Standard Drift Diameter	**4.767** in.
Nominal ID	**4.892** in.	Wall Thickness	**0.304** in.	Special Drift Diameter	**N/A**
Plain End Weight	**16.89** lbs/ft				

PERFORMANCE

Body Yield Strength	**546** x 1000 lbs	Internal Yield	**10640** psi	SMYS	**110000** psi
Collapse	**8610** psi				

TENARISXP™ BTC CONNECTION DATA

GEOMETRY

Connection OD	**6.300** in.	Coupling Length	**9.450** in.	Connection ID	**4.880** in.
Critical Section Area	**4.962** sq. in.	Threads per in.	**5.00**	Make-Up Loss	**4.204** in.

PERFORMANCE

Tension Efficiency	**100** %	Joint Yield Strength	**546** x 1000 lbs	Internal Pressure Capacity(1)	**10640** psi
Structural Compression Efficiency	**100** %	Structural Compression Strength	**546** x 1000 lbs	Structural Bending(2)	**92** °/100 ft
External Pressure Capacity	**8610** psi				

ESTIMATED MAKE-UP TORQUES(3)

Minimum	**9740** ft-lbs	Target	**10820** ft-lbs	Maximum	**11900** ft-lbs

OPERATIONAL LIMIT TORQUES

Operating Torque	**11900** ft-lbs	Yield Torque	**12900** ft-lbs		

BLANKING DIMENSIONS

Blanking Dimensions

1. **FORMATION TOPS**

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
Rustler		860	
Castile		3520	
Lamar		4747	
Bell Canyon		4820	
Cherry Canyon		5710	
Brushy Canyon		7100	
Bone Spring Limestone		8710	
Upr. Avalon		8830	
Top Bone Spring 1		9710	
Top Bone Spring 2		10347	
Estimated Target TVD		10748	

2. **ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		750
Water	Rustler	860
Water	Bell Canyon	4820
Water	Cherry Canyon	5710
Oil/Gas	Brushy Canyon	7100
Oil/Gas	Bone Spring Limestone	8710
Oil/Gas	Upr. Avalon	8830
Oil/Gas	Top Bone Spring 1	9710
Oil/Gas	Top Bone Spring 2	10347
Oil/Gas	Estimated Target TVD	10748

All shows of fresh water and minerals will be reported and protected.

3. **BOP EQUIPMENT**

Will have a minimum of a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. . Stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, intermediate, and production will take place. A full BOP test will be performed unless approval from BLM is received otherwise.

Chevron requests a variance to use a FMC UHS Multibowl wellhead, which will be run through the rig foor on surface casing. BOPE will be nippled up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	880'	17-1/2"	13-3/8"	55 #	J55	STC	New
Intermediate	0'	4,880'	12-1/4"	9-5/8"	43.5#	L80	LTC	New
Production	0'	18,064'	8-1/2"	5-1/2"	20.0 #	P-110	TXP BTC	New

b. Casing design subject to revision based on geologic conditions encountered.

c. *****A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalcuated & sent to the BLM prior to drilling.**

d. **Chevron will fill casing at a minimum of every 20 jts (840') while running for intermediate and production casing in order to maintain collapse SF.**

SF Calculations based on the following "Worst Case" casing design:

Surface Casing: 880
Intermediate Casing: 4,790' TVD
Production Casing: 18,064' MD/10,748' TVD (7,823' VS @ 90 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	5.46	2.84	5.94	4.92
Intermediate	2.19	4.31	3.51	2.69
Production	1.11	2.10	2.16	1.29

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 11.4 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C	0'	880'	14.8	1.34	50	741	6.40
Intermediate								
Lead	50/50 POZ/C	0'	4,280'	11.9	2.43	150	1008	13.75
Tail	Class C	4,280'	4,880'	14.8	1.33	85	290	6.38
Production								
Lead	Class C	4,380'	11,000'	11.9	2.46	50	906	14.05
1st Tail	Class C	11,000'	17,064'	14.8	1.34	35	1408	6.36
2nd Tail	Acid Soluble/Class H	17,064'	18,064'	15	2.19	0	105	9.54

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Production casing will have one horizontal type centralizer on every joint for the first 1000' from TD, then every other joint to EOB, and then every third joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing.

6. MUD PROGRAM

From	To	Type	Weight	F. Vis	Filtrate
0'	880'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
900'	4,880'	Brine	9.5 - 10.2	28 - 30	NC - NC
4,880'	18,064'	Oil Based Mud	8.3 - 9.6	70 - 75	15 - 25

A closed system will by utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. TESTING, LOGGING, AND CORING

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

c. Conventional whole core samples are not planned.
d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. No abnormal pressures or temperatures are expected. Estimated BHP is: 5912 psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

1. **FORMATION TOPS**

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
Rustler		860	
Castile		3520	
Lamar		4747	
Bell Canyon		4820	
Cherry Canyon		5710	
Brushy Canyon		7100	
Bone Spring Limestone		8710	
Upr. Avalon		8830	
Top Bone Spring 1		9710	
Top Bone Spring 2		10347	
Estimated Target TVD		10748	

2. **ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS**

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		750
Water	Rustler	860
Water	Bell Canyon	4820
Water	Cherry Canyon	5710
Oil/Gas	Brushy Canyon	7100
Oil/Gas	Bone Spring Limestone	8710
Oil/Gas	Upr. Avalon	8830
Oil/Gas	Top Bone Spring 1	9710
Oil/Gas	Top Bone Spring 2	10347
Oil/Gas	Estimated Target TVD	10748

All shows of fresh water and minerals will be reported and protected.

3. **BOP EQUIPMENT**

Will have a minimum of a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. . Stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, intermediate, and production will take place. A full BOP test will be performed unless approval from BLM is received otherwise.

Chevron requests a variance to use a FMC UHS Multibowl wellhead, which will be run through the rig foor on surface casing. BOPE will be nippled up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	880'	17-1/2"	13-3/8"	55 #	J55	STC	New
Intermediate	0'	4,880'	12-1/4"	9-5/8"	43.5#	L80	LTC	New
Production	0'	18,064'	8-1/2"	5-1/2"	20.0 #	P-110	TXP BTC	New

b. Casing design subject to revision based on geologic conditions encountered.

c. *****A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalcuated & sent to the BLM prior to drilling.**

d. **Chevron will fill casing at a minimum of every 20 jts (840') while running for intermediate and production casing in order to maintain collapse SF.**

SF Calculations based on the following "Worst Case" casing design:

Surface Casing: 880
Intermediate Casing: 4,790' TVD
Production Casing: 18,064' MD/10,748' TVD (7,823' VS @ 90 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	5.46	2.84	5.94	4.92
Intermediate	2.19	4.31	3.51	2.69
Production	1.11	2.10	2.16	1.29

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 11.4 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C	0'	880'	14.8	1.34	50	741	6.40
Intermediate								
Lead	50/50 POZ/C	0'	4,280'	11.9	2.43	150	1008	13.75
Tail	Class C	4,280'	4,880'	14.8	1.33	85	290	6.38
Production								
Lead	Class C	4,380'	11,000'	11.9	2.46	50	906	14.05
1st Tail	Class C	11,000'	17,064'	14.8	1.34	35	1408	6.36
2nd Tail	Acid Soluble/Class H	17,064'	18,064'	15	2.19	0	105	9.54

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Production casing will have one horizontal type centralizer on every joint for the first 1000' from TD, then every other joint to EOB, and then every third joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing.

6. **MUD PROGRAM**

From	To	Type	Weight	F. Vis	Filtrate
0'	880'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
900'	4,880'	Brine	9.5 - 10.2	28 - 30	NC - NC
4,880'	18,064'	Oil Based Mud	8.3 - 9.6	70 - 75	15 - 25

A closed system will by utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. **TESTING, LOGGING, AND CORING**

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

c. Conventional whole core samples are not planned.
d. A Directional Survey will be run.

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

a. No abnormal pressures or temperatures are expected. Estimated BHP is: 5912 psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MD
Rustler		860	
Castile		3520	
Lamar		4747	
Bell Canyon		4820	
Cherry Canyon		5710	
Brushy Canyon		7100	
Bone Spring Limestone		8710	
Upr. Avalon		8830	
Top Bone Spring 1		9710	
Top Bone Spring 2		10347	
Estimated Target TVD		10748	

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		750
Water	Rustler	860
Water	Bell Canyon	4820
Water	Cherry Canyon	5710
Oil/Gas	Brushy Canyon	7100
Oil/Gas	Bone Spring Limestone	8710
Oil/Gas	Upr. Avalon	8830
Oil/Gas	Top Bone Spring 1	9710
Oil/Gas	Top Bone Spring 2	10347
Oil/Gas	Estimated Target TVD	10748

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT

Will have a minimum of a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. . Stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, intermediate, and production will take place. A full BOP test will be performed unless approval from BLM is received otherwise.

Chevron requests a variance to use a FMC UHS Multibowl wellhead, which will be run through the rig foor on surface casing. BOPE will be nippled up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal.

4. **CASING PROGRAM**

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	880'	17-1/2"	13-3/8"	55 #	J55	STC	New
Intermediate	0'	4,880'	12-1/4"	9-5/8"	43.5#	L80	LTC	New
Production	0'	18,064'	8-1/2"	5-1/2"	20.0 #	P-110	TXP BTC	New

b. Casing design subject to revision based on geologic conditions encountered.

c. *****A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalcuated & sent to the BLM prior to drilling.**

d. **Chevron will fill casing at a minimum of every 20 jts (840') while running for intermediate and production casing in order to maintain collapse SF.**

SF Calculations based on the following "Worst Case" casing design:

Surface Casing: 880
Intermediate Casing: 4,790' TVD
Production Casing: 18,064' MD/10,748' TVD (7,823' VS @ 90 deg inc)

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	5.46	2.84	5.94	4.92
Intermediate	2.19	4.31	3.51	2.69
Production	1.11	2.10	2.16	1.29

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 11.4 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	Weight	Yield	%Excess	Sacks	Water
Surface				(ppg)	(sx/cu ft)	Open Hole		gal/sk
Tail	Class C	0'	880'	14.8	1.34	50	741	6.40
Intermediate								
Lead	50/50 POZ/C	0'	4,280'	11.9	2.43	150	1008	13.75
Tail	Class C	4,280'	4,880'	14.8	1.33	85	290	6.38
Production								
Lead	Class C	4,380'	11,000'	11.9	2.46	50	906	14.05
1st Tail	Class C	11,000'	17,064'	14.8	1.34	35	1408	6.36
2nd Tail	Acid Soluble/Class H	17,064'	18,064'	15	2.19	0	105	9.54

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Production casing will have one horizontal type centralizer on every joint for the first 1000' from TD, then every other joint to EOB, and then every third joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing.

6. MUD PROGRAM

From	To	Type	Weight	F. Vis	Filtrate
0'	880'	Spud Mud	8.3 - 8.7	32 - 34	NC - NC
900'	4,880'	Brine	9.5 - 10.2	28 - 30	NC - NC
4,880'	18,064'	Oil Based Mud	8.3 - 9.6	70 - 75	15 - 25

A closed system will by utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. TESTING, LOGGING, AND CORING

The anticipated type and amount of testing, logging, and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mudlogs	2 man mudlog	Int Csg to TD	Drillout of Int Csg	TBD
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling	TBD

c. Conventional whole core samples are not planned.
d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. No abnormal pressures or temperatures are expected. Estimated BHP is: 5912 psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

PLANNED WELLPATH REPORT (CSV version)
Prepared by Baker Hughes
Software System: WellArchitect® 5.0

REFERENCE WELLPATH IDENTIFICATION

Operator	Chevron U.S.A. Inc.
Area	Lea County, NM
Field	Jennings / Upper BN SPRN Shale (Lea County, NM)
Facility	Grizzly CD Sec 3 FED Com Permitting
Slot	10H
Well	10H
Wellbore	10H
Wellpath	10H Prelim 1
Sidetrack	(none)

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
North Reference	Grid
Scale	0.999959
Convergence at slot	0.36° East
Software System	WellArchitect® 5.0
User	Tranlam
Report Generated	2/6/2018 at 3:16:33 PM
DataBase/Source file	WA_Midland/ev512.xml

WELLPATH LOCATION	Local North [ft]	Local East [ft]	Easting [US ft]	Northing [US ft]	Latitude	Longitude
Slot Location	0	50	709275	422373	32°09'33.887"N	103°39'25.471"W
Facility Reference Pt			709225	422373	32°09'33.890"N	103°39'26.053"W
Field Reference Pt			152400.3	0	30°59'42.846"N	105°26'33.659"W

WELLPATH DATUM

Calculation method	Minimum curvature
Horizontal Reference Point	Slot
Vertical Reference Point	Rig on 10H (RT)
MD Reference Point	Rig on 10H (RT)
Field Vertical Reference	Mean Sea Level
Rig on 10H (RT) to Facility Vertical Datum	0.00ft
Rig on 10H (RT) to Mean Sea Level	0.00ft
Rig on 10H (RT) to Ground Level at Slot (10H)	0.00ft
Section Origin	N 0.00, E 0.00 ft
Section Azimuth	0.00°

A † = interpolated/extrapolated station

	MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	DLS	Comments
	[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[°/100ft]	
	0	0	64.29	0	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	Tie On
†	100	0	64.29	100	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	200	0	64.29	200	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	300	0	64.29	300	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	400	0	64.29	400	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	500	0	64.29	500	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	600	0	64.29	600	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	700	0	64.29	700	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	800	0	64.29	800	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	900	0	64.29	900	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	1000	0	64.29	1000	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	1100	0	64.29	1100	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	1200	0	64.29	1200	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	1300	0	64.29	1300	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
†	1400	0	64.29	1400	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	
	1500	0	64.29	1500	0	0	0	709275	422373	32°09'33.887"N	103°39'25.471"W	0	End of Tangent
†	1600	1	64.29	1599.99	0.38	0.38	0.79	709275.8	422373.4	32°09'33.891"N	103°39'25.462"W	1	
†	1700	2	64.29	1699.96	1.51	1.51	3.14	709278.1	422374.5	32°09'33.902"N	103°39'25.435"W	1	
†	1800	3	64.29	1799.86	3.41	3.41	7.07	709282.1	422376.4	32°09'33.920"N	103°39'25.389"W	1	
†	1900	4	64.29	1899.68	6.05	6.05	12.58	709287.6	422379.1	32°09'33.946"N	103°39'25.325"W	1	
†	2000	5	64.29	1999.37	9.46	9.46	19.64	709294.6	422382.5	32°09'33.979"N	103°39'25.242"W	1	
†	2100	6	64.29	2098.9	13.62	13.62	28.28	709303.3	422386.6	32°09'34.020"N	103°39'25.141"W	1	
†	2200	7	64.29	2198.26	18.53	18.53	38.48	709313.5	422391.5	32°09'34.068"N	103°39'25.022"W	1	
†	2300	8	64.29	2297.4	24.19	24.19	50.24	709325.2	422397.2	32°09'34.123"N	103°39'24.885"W	1	
†	2400	9	64.29	2396.3	30.6	30.6	63.56	709338.6	422403.6	32°09'34.186"N	103°39'24.730"W	1	
†	2500	10	64.29	2494.93	37.76	37.76	78.43	709353.4	422410.8	32°09'34.256"N	103°39'24.556"W	1	
†	2600	11	64.29	2593.26	45.67	45.67	94.85	709369.8	422418.7	32°09'34.333"N	103°39'24.365"W	1	
†	2700	12	64.29	2691.25	54.32	54.32	112.81	709387.8	422427.3	32°09'34.417"N	103°39'24.155"W	1	
†	2800	13	64.29	2788.87	63.71	63.71	132.31	709407.3	422436.7	32°09'34.509"N	103°39'23.928"W	1	
†	2900	14	64.29	2886.11	73.83	73.83	153.34	709428.3	422446.8	32°09'34.608"N	103°39'23.682"W	1	
	3000	15	64.29	2982.92	84.69	84.69	175.9	709450.9	422457.7	32°09'34.714"N	103°39'23.419"W	1	End of Build
†	3100	15	64.29	3079.52	95.92	95.92	199.22	709474.2	422468.9	32°09'34.824"N	103°39'23.147"W	0	
†	3200	15	64.29	3176.11	107.15	107.15	222.54	709497.5	422480.2	32°09'34.933"N	103°39'22.875"W	0	
†	3300	15	64.29	3272.7	118.38	118.38	245.86	709520.9	422491.4	32°09'35.043"N	103°39'22.603"W	0	
†	3400	15	64.29	3369.29	129.61	129.61	269.18	709544.2	422502.6	32°09'35.153"N	103°39'22.331"W	0	
†	3500	15	64.29	3465.89	140.83	140.83	292.5	709567.5	422513.8	32°09'35.262"N	103°39'22.059"W	0	
†	3600	15	64.29	3562.48	152.06	152.06	315.82	709590.8	422525.1	32°09'35.372"N	103°39'21.787"W	0	
†	3700	15	64.29	3659.07	163.29	163.29	339.14	709614.1	422536.3	32°09'35.482"N	103°39'21.514"W	0	
†	3800	15	64.29	3755.66	174.52	174.52	362.46	709637.4	422547.5	32°09'35.591"N	103°39'21.242"W	0	
†	3900	15	64.29	3852.26	185.75	185.75	385.78	709660.8	422558.7	32°09'35.701"N	103°39'20.970"W	0	

†	4000	15	64.29	3948.85	196.97	196.97	409.1	709684.1	422570	32°09'35.811"N	103°39'20.698"W	0	
†	4100	15	64.29	4045.44	208.2	208.2	432.42	709707.4	422581.2	32°09'35.920"N	103°39'20.426"W	0	
†	4200	15	64.29	4142.03	219.43	219.43	455.74	709730.7	422592.4	32°09'36.030"N	103°39'20.154"W	0	
†	4300	15	64.29	4238.63	230.66	230.66	479.06	709754	422603.7	32°09'36.140"N	103°39'19.882"W	0	
†	4400	15	64.29	4335.22	241.89	241.89	502.38	709777.4	422614.9	32°09'36.249"N	103°39'19.610"W	0	
†	4500	15	64.29	4431.81	253.11	253.11	525.7	709800.7	422626.1	32°09'36.359"N	103°39'19.338"W	0	
†	4600	15	64.29	4528.41	264.34	264.34	549.02	709824	422637.3	32°09'36.469"N	103°39'19.066"W	0	
	4608.62	15	64.29	4536.73	265.31	265.31	551.03	709826	422638.3	32°09'36.478"N	103°39'19.042"W	0	End of Tangent
†	4700	14.086	64.29	4625.18	275.26	275.26	571.7	709846.7	422648.3	32°09'36.575"N	103°39'18.801"W	1	
†	4800	13.086	64.29	4722.38	285.45	285.45	592.87	709867.8	422658.4	32°09'36.675"N	103°39'18.554"W	1	
†	4900	12.086	64.29	4819.98	294.91	294.91	612.5	709887.5	422667.9	32°09'36.767"N	103°39'18.325"W	1	
†	5000	11.086	64.29	4917.94	303.62	303.62	630.6	709905.6	422676.6	32°09'36.852"N	103°39'18.114"W	1	
†	5100	10.086	64.29	5016.24	311.59	311.59	647.15	709922.1	422684.6	32°09'36.930"N	103°39'17.921"W	1	
†	5200	9.086	64.29	5114.84	318.81	318.81	662.15	709937.1	422691.8	32°09'37.001"N	103°39'17.746"W	1	
†	5300	8.086	64.29	5213.72	325.29	325.29	675.6	709950.6	422698.3	32°09'37.064"N	103°39'17.589"W	1	
†	5400	7.086	64.29	5312.84	331.02	331.02	687.5	709962.5	422704	32°09'37.120"N	103°39'17.450"W	1	
†	5500	6.086	64.29	5412.18	335.99	335.99	697.83	709972.8	422709	32°09'37.168"N	103°39'17.329"W	1	
†	5600	5.086	64.29	5511.7	340.22	340.22	706.6	709981.6	422713.2	32°09'37.210"N	103°39'17.227"W	1	
†	5700	4.086	64.29	5611.38	343.68	343.68	713.81	709988.8	422716.7	32°09'37.243"N	103°39'17.143"W	1	
†	5800	3.086	64.29	5711.18	346.4	346.4	719.44	709994.4	422719.4	32°09'37.270"N	103°39'17.077"W	1	
†	5900	2.086	64.29	5811.08	348.35	348.35	723.51	709998.5	422721.3	32°09'37.289"N	103°39'17.030"W	1	
†	6000	1.086	64.29	5911.04	349.56	349.56	726	710001	422722.5	32°09'37.301"N	103°39'17.001"W	1	
†	6100	0.086	64.29	6011.04	350	350	726.92	710001.9	422723	32°09'37.305"N	103°39'16.990"W	1	
	6108.62	0	0	6019.65	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	1	End of Drop
†	6200	0	0	6111.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	6300	0	0	6211.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	6400	0	0	6311.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	6500	0	0	6411.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	6600	0	0	6511.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	6700	0	0	6611.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	6800	0	0	6711.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	6900	0	0	6811.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7000	0	0	6911.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7100	0	0	7011.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7200	0	0	7111.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7300	0	0	7211.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7400	0	0	7311.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7500	0	0	7411.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7600	0	0	7511.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7700	0	0	7611.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7800	0	0	7711.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	7900	0	0	7811.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8000	0	0	7911.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8100	0	0	8011.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8200	0	0	8111.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	

†	8300	0	0	8211.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8400	0	0	8311.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8500	0	0	8411.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8600	0	0	8511.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8700	0	0	8611.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8800	0	0	8711.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	8900	0	0	8811.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9000	0	0	8911.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9100	0	0	9011.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9200	0	0	9111.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9300	0	0	9211.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9400	0	0	9311.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9500	0	0	9411.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9600	0	0	9511.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9700	0	0	9611.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9800	0	0	9711.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	9900	0	0	9811.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	10000	0	0	9911.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	10100	0	0	10011.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
†	10200	0	0	10111.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	
	10264.01	0	0	10175.04	350	350	726.93	710001.9	422723	32°09'37.305"N	103°39'16.990"W	0	End of Tangent
†	10300	3.599	0	10211.01	351.13	351.13	726.93	710001.9	422724.1	32°09'37.316"N	103°39'16.990"W	10	
†	10400	13.599	0	10309.76	366.07	366.07	726.93	710001.9	422739.1	32°09'37.464"N	103°39'16.989"W	10	
†	10500	23.599	0	10404.42	397.92	397.92	726.93	710001.9	422770.9	32°09'37.779"N	103°39'16.986"W	10	
†	10600	33.599	0	10492.11	445.73	445.73	726.93	710001.9	422818.7	32°09'38.252"N	103°39'16.983"W	10	
†	10700	43.599	0	10570.16	508.04	508.04	726.93	710001.9	422881	32°09'38.869"N	103°39'16.978"W	10	
†	10800	53.599	0	10636.21	582.95	582.95	726.93	710001.9	422955.9	32°09'39.610"N	103°39'16.973"W	10	
†	10900	63.599	0	10688.24	668.2	668.2	726.93	710001.9	423041.2	32°09'40.454"N	103°39'16.967"W	10	
†	11000	73.599	0	10724.69	761.18	761.18	726.93	710001.9	423134.2	32°09'41.374"N	103°39'16.960"W	10	
†	11100	83.599	0	10744.43	859.09	859.09	726.93	710001.9	423232.1	32°09'42.343"N	103°39'16.953"W	10	
	11164.01	90	0	10748	922.96	922.96	726.93	710001.9	423295.9	32°09'42.975"N	103°39'16.948"W	10	End of Build
†	11200	90	0	10748	958.95	958.95	726.93	710001.9	423331.9	32°09'43.331"N	103°39'16.945"W	0	
†	11300	90	0	10748	1058.95	1058.95	726.93	710001.9	423431.9	32°09'44.320"N	103°39'16.938"W	0	
†	11400	90	0	10748	1158.95	1158.95	726.93	710001.9	423531.9	32°09'45.310"N	103°39'16.931"W	0	
†	11500	90	0	10748	1258.95	1258.95	726.93	710001.9	423631.9	32°09'46.300"N	103°39'16.923"W	0	
†	11600	90	0	10748	1358.95	1358.95	726.93	710001.9	423731.9	32°09'47.289"N	103°39'16.916"W	0	
†	11700	90	0	10748	1458.95	1458.95	726.93	710001.9	423831.9	32°09'48.279"N	103°39'16.909"W	0	
†	11800	90	0	10748	1558.95	1558.95	726.93	710001.9	423931.9	32°09'49.268"N	103°39'16.901"W	0	
†	11900	90	0	10748	1658.95	1658.95	726.93	710001.9	424031.9	32°09'50.258"N	103°39'16.894"W	0	
†	12000	90	0	10748	1758.95	1758.95	726.93	710001.9	424131.9	32°09'51.247"N	103°39'16.887"W	0	
†	12100	90	0	10748	1858.95	1858.95	726.93	710001.9	424231.9	32°09'52.237"N	103°39'16.879"W	0	
†	12200	90	0	10748	1958.95	1958.95	726.93	710001.9	424331.9	32°09'53.226"N	103°39'16.872"W	0	
†	12300	90	0	10748	2058.95	2058.95	726.93	710001.9	424431.9	32°09'54.216"N	103°39'16.865"W	0	
†	12400	90	0	10748	2158.95	2158.95	726.93	710001.9	424531.9	32°09'55.205"N	103°39'16.857"W	0	
†	12500	90	0	10748	2258.95	2258.95	726.93	710001.9	424631.9	32°09'56.195"N	103°39'16.850"W	0	

†	12600	90	0	10748	2358.95	2358.95	726.93	710001.9	424731.9	32°09'57.184"N	103°39'16.843"W	0	
†	12700	90	0	10748	2458.95	2458.95	726.93	710001.9	424831.9	32°09'58.174"N	103°39'16.835"W	0	
†	12800	90	0	10748	2558.95	2558.95	726.93	710001.9	424931.8	32°09'59.164"N	103°39'16.828"W	0	
†	12900	90	0	10748	2658.95	2658.95	726.93	710001.9	425031.8	32°10'00.153"N	103°39'16.821"W	0	
†	13000	90	0	10748	2758.95	2758.95	726.93	710001.9	425131.8	32°10'01.143"N	103°39'16.813"W	0	
†	13100	90	0	10748	2858.95	2858.95	726.93	710001.9	425231.8	32°10'02.132"N	103°39'16.806"W	0	
†	13200	90	0	10748	2958.95	2958.95	726.93	710001.9	425331.8	32°10'03.122"N	103°39'16.799"W	0	
†	13300	90	0	10748	3058.95	3058.95	726.93	710001.9	425431.8	32°10'04.111"N	103°39'16.791"W	0	
†	13400	90	0	10748	3158.95	3158.95	726.93	710001.9	425531.8	32°10'05.101"N	103°39'16.784"W	0	
†	13500	90	0	10748	3258.95	3258.95	726.93	710001.9	425631.8	32°10'06.090"N	103°39'16.777"W	0	
†	13600	90	0	10748	3358.95	3358.95	726.93	710001.9	425731.8	32°10'07.080"N	103°39'16.769"W	0	
†	13700	90	0	10748	3458.95	3458.95	726.93	710001.9	425831.8	32°10'08.069"N	103°39'16.762"W	0	
†	13800	90	0	10748	3558.95	3558.95	726.93	710001.9	425931.8	32°10'09.059"N	103°39'16.755"W	0	
†	13900	90	0	10748	3658.95	3658.95	726.93	710001.9	426031.8	32°10'10.048"N	103°39'16.747"W	0	
†	14000	90	0	10748	3758.95	3758.95	726.93	710001.9	426131.8	32°10'11.038"N	103°39'16.740"W	0	
†	14100	90	0	10748	3858.95	3858.95	726.93	710001.9	426231.8	32°10'12.027"N	103°39'16.733"W	0	
†	14200	90	0	10748	3958.95	3958.95	726.93	710001.9	426331.8	32°10'13.017"N	103°39'16.725"W	0	
†	14300	90	0	10748	4058.95	4058.95	726.93	710001.9	426431.8	32°10'14.007"N	103°39'16.718"W	0	
†	14400	90	0	10748	4158.95	4158.95	726.93	710001.9	426531.8	32°10'14.996"N	103°39'16.711"W	0	
†	14500	90	0	10748	4258.95	4258.95	726.93	710001.9	426631.8	32°10'15.986"N	103°39'16.703"W	0	
†	14600	90	0	10748	4358.95	4358.95	726.93	710001.9	426731.8	32°10'16.975"N	103°39'16.696"W	0	
†	14700	90	0	10748	4458.95	4458.95	726.93	710001.9	426831.8	32°10'17.965"N	103°39'16.689"W	0	
†	14800	90	0	10748	4558.95	4558.95	726.93	710001.9	426931.8	32°10'18.954"N	103°39'16.681"W	0	
†	14900	90	0	10748	4658.95	4658.95	726.93	710001.9	427031.8	32°10'19.944"N	103°39'16.674"W	0	
†	15000	90	0	10748	4758.95	4758.95	726.93	710001.9	427131.8	32°10'20.933"N	103°39'16.667"W	0	
†	15100	90	0	10748	4858.95	4858.95	726.93	710001.9	427231.8	32°10'21.923"N	103°39'16.659"W	0	
†	15200	90	0	10748	4958.95	4958.95	726.93	710001.9	427331.7	32°10'22.912"N	103°39'16.652"W	0	
†	15300	90	0	10748	5058.95	5058.95	726.93	710001.9	427431.7	32°10'23.902"N	103°39'16.645"W	0	
†	15400	90	0	10748	5158.95	5158.95	726.93	710001.9	427531.7	32°10'24.891"N	103°39'16.637"W	0	
†	15500	90	0	10748	5258.95	5258.95	726.93	710001.9	427631.7	32°10'25.881"N	103°39'16.630"W	0	
†	15600	90	0	10748	5358.95	5358.95	726.93	710001.9	427731.7	32°10'26.870"N	103°39'16.623"W	0	
†	15700	90	0	10748	5458.95	5458.95	726.93	710001.9	427831.7	32°10'27.860"N	103°39'16.615"W	0	
†	15800	90	0	10748	5558.95	5558.95	726.93	710001.9	427931.7	32°10'28.850"N	103°39'16.608"W	0	
†	15900	90	0	10748	5658.95	5658.95	726.93	710001.9	428031.7	32°10'29.839"N	103°39'16.600"W	0	
†	16000	90	0	10748	5758.95	5758.95	726.93	710001.9	428131.7	32°10'30.829"N	103°39'16.593"W	0	
†	16100	90	0	10748	5858.95	5858.95	726.93	710001.9	428231.7	32°10'31.818"N	103°39'16.586"W	0	
†	16200	90	0	10748	5958.95	5958.95	726.93	710001.9	428331.7	32°10'32.808"N	103°39'16.578"W	0	
†	16300	90	0	10748	6058.95	6058.95	726.93	710001.9	428431.7	32°10'33.797"N	103°39'16.571"W	0	
†	16400	90	0	10748	6158.95	6158.95	726.93	710001.9	428531.7	32°10'34.787"N	103°39'16.564"W	0	
†	16500	90	0	10748	6258.95	6258.95	726.93	710001.9	428631.7	32°10'35.776"N	103°39'16.556"W	0	
†	16600	90	0	10748	6358.95	6358.95	726.93	710001.9	428731.7	32°10'36.766"N	103°39'16.549"W	0	
†	16700	90	0	10748	6458.95	6458.95	726.93	710001.9	428831.7	32°10'37.755"N	103°39'16.542"W	0	
†	16800	90	0	10748	6558.95	6558.95	726.93	710001.9	428931.7	32°10'38.745"N	103°39'16.534"W	0	
†	16900	90	0	10748	6658.95	6658.95	726.93	710001.9	429031.7	32°10'39.734"N	103°39'16.527"W	0	
†	17000	90	0	10748	6758.95	6758.95	726.93	710001.9	429131.7	32°10'40.724"N	103°39'16.520"W	0	

†	17100	90	0	10748	6858.95	6858.95	726.93	710001.9	429231.7	32°10'41.713"N	103°39'16.512"W	0	
†	17200	90	0	10748	6958.95	6958.95	726.93	710001.9	429331.7	32°10'42.703"N	103°39'16.505"W	0	
†	17300	90	0	10748	7058.95	7058.95	726.93	710001.9	429431.7	32°10'43.693"N	103°39'16.498"W	0	
†	17400	90	0	10748	7158.95	7158.95	726.93	710001.9	429531.7	32°10'44.682"N	103°39'16.490"W	0	
†	17500	90	0	10748	7258.95	7258.95	726.93	710001.9	429631.6	32°10'45.672"N	103°39'16.483"W	0	
†	17600	90	0	10748	7358.95	7358.95	726.93	710001.9	429731.6	32°10'46.661"N	103°39'16.476"W	0	
†	17700	90	0	10748	7458.95	7458.95	726.93	710001.9	429831.6	32°10'47.651"N	103°39'16.468"W	0	
†	17800	90	0	10748	7558.95	7558.95	726.93	710001.9	429931.6	32°10'48.640"N	103°39'16.461"W	0	
†	17900	90	0	10748	7658.95	7658.95	726.93	710001.9	430031.6	32°10'49.630"N	103°39'16.454"W	0	
†	18000	90	0	10748	7758.95	7758.95	726.93	710001.9	430131.6	32°10'50.619"N	103°39'16.446"W	0	
	18064.01	90	0	10748	7822.96	7822.96	726.93	710001.9	430195.6	32°10'51.253"N	103°39'16.442"W	0	End of Tangent

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape	Comment
(1) 10H PBHL rev 1	18064.01	10748	7822.96	726.93	710001.9	430195.63	32°10'51.253"N	103°39'16.442"W	point	

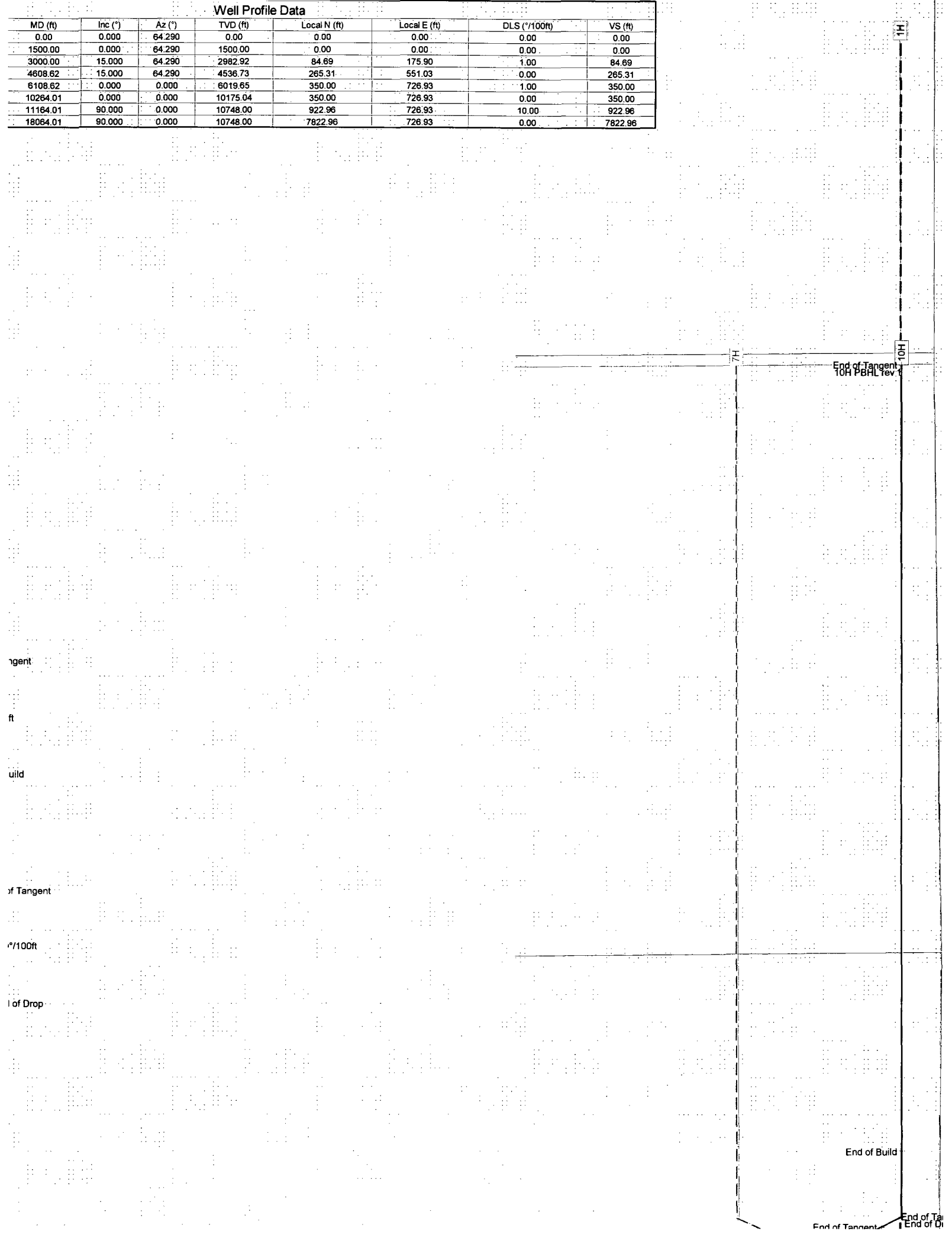
SURVEY PROGRAM Ref Wellbore: 10H Ref Wellpath: 10H Prelim 1

Start MD [ft]	End MD [ft]	Pos Unc Model	Log Name/Comment	Wellbore
0	21143.27	BHI NaviTrak (Standar		10H

COMMENTS

Well Profile Data

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
0.00	0.000	64.290	0.00	0.00	0.00	0.00	0.00
1500.00	0.000	64.290	1500.00	0.00	0.00	0.00	0.00
3000.00	15.000	64.290	2982.92	84.69	175.90	1.00	84.69
4608.62	15.000	64.290	4536.73	265.31	551.03	0.00	265.31
6108.62	0.000	0.000	6019.65	350.00	726.93	1.00	350.00
10264.01	0.000	0.000	10175.04	350.00	726.93	0.00	350.00
11164.01	90.000	0.000	10748.00	922.96	726.93	10.00	922.96
18064.01	90.000	0.000	10748.00	7822.96	726.93	0.00	7822.96



ıgent

ft

uild

ıf Tangent

°/100ft

l of Drop

APD ID: 10400030013 **Submission Date:** 05/10/2018

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

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:

Cotton_Draw_Grizzly_Pad_Aerial_Detail_20180504085023.pdf

CO_Grizzly_3_34_Fed_00510H_Road_Plat_20180510081009.pdf

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

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Cotton_Draw_Grizzly_Pad_Aerial_Detail_20180504090827.pdf

CO_Grizzly_3_34_Fed_00510H_New_Road_Plat_20180510081152.pdf

New road type: LOCAL

Length: 7174.39 Feet **Width (ft.):** 25

Max slope (%): 2 **Max grade (%):** 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 25

New road access erosion control: Proper erosion control methods will be used on the area to control erosion, runoff and filtration of the surrounding area. See surface use plat.

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: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 0

Offsite topsoil source description:

Onsite topsoil removal process: None needed

Access other construction information:

Access miscellaneous information:

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

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Ditching will be constructed on both sides of the road.

Road Drainage Control Structures (DCS) description: Ditching will be constructed on both sides of the road.

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:

CO_Grizzly_3_34_FED_005_10H_1mi_Radius_20180510102802.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: See Surface Use Plat

Production Facilities map:

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Cotton_Draw_Grizzly_Surface_Use_Plat_20180510103122.pdf
Cotton_Draw_Grizzly_Pad_Gas_Lift_Line_20180510103230.pdf
Cotton_Draw_Grizzly_Pad_EDS_Line_20180510103337.pdf
Cotton_Draw_Frac_Pond_Sec_9_SUP_20180510103432.pdf
Cotton_Draw_Frac_Pond_Sec_9_Contour_Detail_20180510103620.pdf
Cotton_Draw_Grizzly_Pad_and_Facilities_Aerial_Detail_20180510103713.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: OTHER

Describe type: Frac pond, private water source

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: FEDERAL

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 70000

Source volume (acre-feet): 9.022516

Source volume (gal): 2940000

Water source and transportation map:

Cotton_Draw_Frac_Pond_Sec_9_Contour_Detail_20180504095739.pdf
Cotton_Draw_Frac_Pond_Sec_9_SUP_20180504095728.pdf
Cotton_Draw_Grizzly_Pad_Temp_Water_Line_20180504095638.pdf

Water source comments: A proposed Frac Pond will be in the NE4 of Sec. 9, T25S-R32E and will be utilized for fresh water and recycled water. Fresh water will be obtained from a private water source. A temporary 10" expanding pipe water transfer line will run west and north along the lease road approximately 7,229.42' from the proposed frac pond to the proposed well location in Section 3. Fresh water line will run parallel to road and will stay within 10' of access road. This will cross lease lines and a BLM ROW will be required for the water transfer line.

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: Caliche will be used to construct well pad and roads. Material will be purchased from the private land owners (Oliver Kiehne) or the caliche pit located in Sec 27, T26, R33E, Lea County, NM. The proposed source of construction material will be located and purchased by Chevron U.S.A. Inc. Notification shall be given to BLM at (575) 234-5909 at least 3 working days prior to commencing construction of access road and/or well pad.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: Garbage and trash

Amount of waste: 200 pounds

Waste disposal frequency : Daily

Safe containment description: Waste produced will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.
Safe containmant attachment:

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

Disposal location description: State approved facility

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? NO

Description of cuttings location

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:

CO_Grizzly_3_34_Fed_00510H_Well_Plat_20180510105421.pdf

CD_Grizzly_Pad_rig_layout_20180510111240.pdf

Comments: Exterior well pad dimensions are 380' x 520'. Interior well pad dimensions from point of entry (well head) of the easternmost well are N-120', S-260', E-260', W-260'. The length to the west includes 25' spacing for next well on multi-well pad (five wells). Total disturbance area needed for construction of well pad will be 4.54 acres. Topsoil placement is on the east where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices.

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** CO GRIZZLY 3 27 FED

Multiple Well Pad Number: 0051H 0052H 0055H 0057H 00510H

Recontouring attachment:

Cotton_Draw_Grizzly_Pad_IR_Plat_20180510110443.pdf

CO_GRIZZLY_3_34_Fed_00510H_APD_SUPO_20180510110514.pdf

Cotton_Draw_Grizzly_Surface_Use_Plat_20180510110550.pdf

Cotton_Draw_Grizzly_Pad_CutFill_20180510110712.pdf

Cotton_Draw_CS_Cut___Fill_20180510110753.pdf

Cotton_Draw_Frac_Pond_Sec_9_SUP_20180510110921.pdf

Drainage/Erosion control construction: Proper erosion control methods will be used on the area to control erosion, runoff and filtration of the surrounding area.

Drainage/Erosion control reclamation: Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment. After all the disturbed areas have been properly prepared; the areas will be seeded with the proper BLM seed mixture (BLM #2), free of noxious weeds.

Well pad proposed disturbance (acres): 4.54
Road proposed disturbance (acres): 2.97
Powerline proposed disturbance (acres): 2.41
Pipeline proposed disturbance (acres): 2.02
Other proposed disturbance (acres): 13.94
Total proposed disturbance: 25.88

Well pad interim reclamation (acres): 1.95
Road interim reclamation (acres): 2.97
Powerline interim reclamation (acres): 2.41
Pipeline interim reclamation (acres): 2.02
Other interim reclamation (acres): 13.94
Total interim reclamation: 23.29

Well pad long term disturbance (acres): 2.59
Road long term disturbance (acres): 2.97
Powerline long term disturbance (acres): 2.41
Pipeline long term disturbance (acres): 2.02
Other long term disturbance (acres): 13.94
Total long term disturbance: 23.93

Disturbance Comments:

Reconstruction method: All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends in distinguishably with the surrounding landscape.

Topsoil redistribution: Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

Soil treatment: Will seed the area the proper BLM mixture free of noxious weeds.

Existing Vegetation at the well pad: Mesquite Shrubs and grass

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Mesquite Shrubs and grass

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Mesquite Shrubs and grass

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Mesquite Shrubs and grass

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: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Total pounds/Acre:

Seed Summary	
Seed Type	**Pounds/Acre**

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: None needed

Weed treatment plan attachment:

Monitoring plan description: None needed

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

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:**

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

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:

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: EXISTING 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:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

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

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Disturbance type: PIPELINE

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: OTHER

Describe: Proposed frac pond, gas lift line, flowline

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:**

Operator Name: CHEVRON USA INCORPORATED

Well Name: CO GRIZZLY 3 34 FED **Well Number:** 00510H

Section 12 - Other Information

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

ROW Type(s): 281001 ROW - ROADS,288100 ROW – O&G Pipeline,289001 ROW- O&G Well Pad,FLPMA (Powerline),Other

ROW Applications

SUPO Additional Information: Power lines: A powerline, approximately 6,985.42, will be installed from the existing powerline running along the Orla Road in Section 10 and will be routed along the lease road to the proposed well site. This will cross lease lines and a ROW will be applied for through the BLM. All construction activity will be confined to the approved ROW. Power line will run parallel to the road and will stay within approved ROW. Exclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation. Fencing will remain in place while no activity is present and until backfilling takes place. Erosion / Drainage: Drainage control system shall be constructed on the entire length of road by the use of any of the following: ditches, side hill out-sloping and in-sloping, lead-off ditches, culvert installation, or low water crossings.

Use a previously conducted onsite? YES

Previous Onsite information: On-site performed by BLM NRS: Paul Murphy 3/22/2018

Other SUPO Attachment

CO_GRIZZLY_3_34_Fed_00510H_APD_SUPO_20180510111931.pdf

CHEVRON U.S.A. Inc.
CO GRIZZLY 3 27 FED 00510H
USA NMLC 061936
SECTION 3, T25S-R32E
SHL 2,640' FNL & 1,065' FEL

SECTION 34, T24S, R32E
BHL 100' FNL & 330' FEL

Chevron Representatives

Primary point of contact:
W Mark Woodard
432 687 7999

Chevron Functional Contacts

Project Manager Name: Sam Storrick Address: 6301 Deauville Midland, Texas 79706 Phone: (432) 687-7769 Email: storrick@chevron.com	**Drilling Engineer** Name: Jason Hannen Address: 1400 Smith Street Houston, TX 77002 Phone: (713) 372-1169 Email: jason.hannen@chevron.com
Surface Land Representative Name: W Mark Woodard Address: 6301 Deauville Midland, Texas 79706 Phone: (432) 687-7999 Email: markwoodard@Chevron.com	**Facility Lead** Name: Max Vilmar Address: 6301 Deauville Midland, Texas 79706 Phone: (432) 687-7327 Email: mvilmar@chevron.com
Geologist Name: Michael Smerilli Address: 6301 Deauville Midland, Texas 79706 Phone: (713) 687-7887 Email: michael.smerilli@chevron.com	**Regulatory Specialist** Name: Laura Becerra Address: 6301 Deauville Midland, Texas 79706 Office: (432) 687-7665 Email: lbecerra@chevron.com

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 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:

Bond Information

Federal/Indian APD: FED

BLM Bond number: CA0329

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: