Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMLC050797

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
CHARLIE CHOCOLATE 14-15 FEDCOM 31H

2. Name of Operator
OXY USA WTP LP
Contact: LESLIE T. REEVES
E-Mail: LESLIE_REEVES@OXY.COM

9. API Well No.
30-015-43123-00-X1

3a. Address
HOUSTON, TX 77210

3b. Phone No. (include area code)
Ph: 713-497-2492

10. Field and Pool or Exploratory Area
RUSSELL

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 14 T20S R28E NENE 450FNL 420FEL
32.579641 N Lat, 104.140281 W Lon

11. County or Parish, State
EDDY COUNTY, NM

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

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

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

OXY USA Inc. respectfully requests to make the following changes to the original APD submitted:
Bottom hole location change and associated drill plan. Addition of pilot hole. No new surface disturbance.

New directional plan, drill plot, drill plan, H2S plan, C-102 and supplemental information for both the pilot hole and new orientation of the horizontal are attached for reference.

RECEIVED

JUN 25 2019

DISTRICT II-ARTESIA O.C.D.

Carlsbad Field Office
OCD Artesia

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #466571 verified by the BLM Well Information System
For OXY USA WTP LP, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 05/28/2019 (19PP2234SE)

Name *(Printed/Typed)* LESLIE T. REEVES — Title REGULATORY ADVISOR

Signature (Electronic Submission) — Date 05/23/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By NDUNGU KAMAU — Title PETROLEUM ENGINEER — Date 06/20/2019

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

Office Carlsbad

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

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA WTP LP
LEASE NO.:	NMLC050797
WELL NAME & NO.:	CHARLIE CHOCOLATE 14-15 FED COM 31H
SURFACE HOLE FOOTAGE:	450'/N & 420'/E
BOTTOM HOLE FOOTAGE	660'/N & 20'/W
LOCATION:	SECTION 14, T20S, R28E, NMPM
COUNTY:	EDDY

COA

H2S	(•) Yes	( ) No	
Potash	(•) None	( ) Secretary	( ) R-111-P
Cave/Karst Potential	( ) Low	( ) Medium	(•) High
Variance	( ) None	(•) Flex Hose	( ) Other
Wellhead	( ) Conventional	( ) Multibowl	(•) Both
Other	☑ 4 String Area	☑ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☑ Cement Squeeze	☑ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

ALL PREVIOUS COAs STILL APPLY.

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Hydrogen Sulfide bearing formation**. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **400** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of

six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

❖ In **High Cave/Karst Areas** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

The pilot hole plugging procedure is approved as written. Note plug tops on subsequent drilling report.

Or,

Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted **(575-361-2822 Eddy County) (575-393-3612 Lea County)** prior to tag of bottom plug, which must be a minimum of 200' in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug. Note plug tops on subsequent drilling report.

3. The minimum required fill of cement behind the **7-5/8** inch 2nd intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash. Excess calculates to 10% - additional cement might be required.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash. .

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

    - Cement should tie-back **200 feet** into the previous casing. Operator shall provide method of verification. **Excess calculates to 19% - additional cement might be required.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.

c. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 2nd intermediate casing shoe into the lateral shall be **5000 (5M)** psi.

d. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe into the pilot hole shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.

c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Offline Cementing

- Contact the BLM prior to the commencement of any offline cementing procedure.

BOP Break Testing Variance

- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer prior to the commencement of any BOP Break Testing operations.
- A full BOP test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOP test will be required.

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

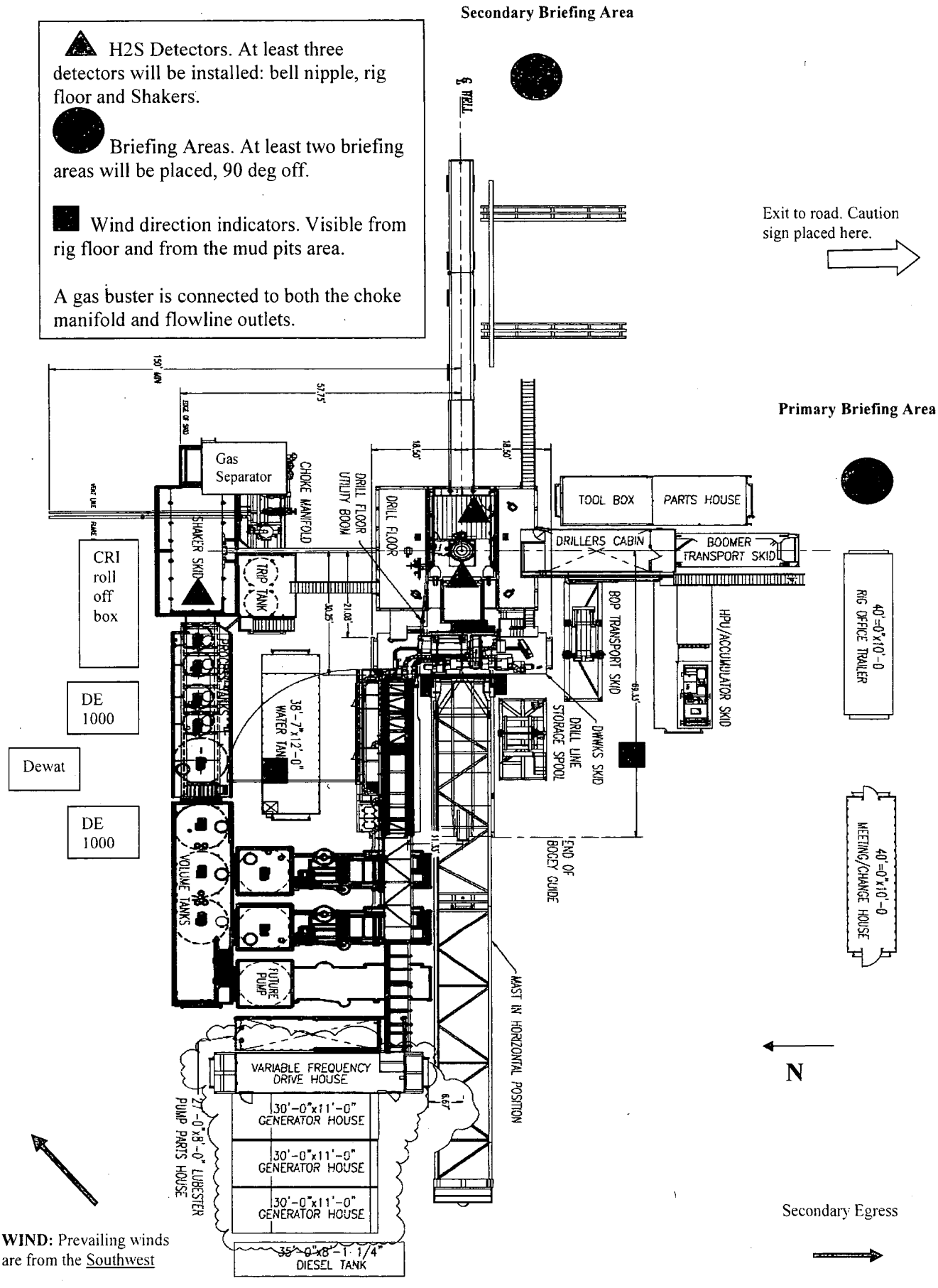
NMK6202019

Permian Drilling
Hydrogen Sulfide Drilling Operations Plan
Charlie Chocolate 14_15 Fed Com 31H

Open drill site. No homes or buildings are near the proposed location.

1. Escape

   Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.


Secondary Briefing Area
H2S Detectors. At least three detectors will be installed: bell nipple, rig floor and Shakers.
Briefing Areas. At least two briefing areas will be placed, 90 deg off.
Wind direction indicators. Visible from rig floor and from the mud pits area.
A gas buster is connected to both the choke manifold and flowline outlets.
Exit to road. Caution sign placed here.
Primary Briefing Area
Gas Separator
CHOKE MANIFOLD
DRILL FLOOR UTILITY BOOM
DRILL FLOOR
TOOL BOX
PARTS HOUSE
DRILLERS CABIN
BOOMER TRANSPORT SKID
SHAKER SKID
TRIP TANK
CRI roll off box
DE 1000
Dewat
DE 1000
BOP TRANSPORT SKID
HPU/ACCUMULATOR SKID
40'-0"x10'-0" RIG OFFICE TRAILER
38'-7"x12'-0" WATER TANK
DRILL LINE STORAGE SPOOL
DWKKS SKID
END OF BOGEY GUIDE
VOLUME TANKS
FUTURE PUMP
40'-0"x10'-0" MEETING/CHANGE HOUSE
MAST IN HORIZONTAL POSITION
N
VARIABLE FREQUENCY DRIVE HOUSE
30'-0"x11'-0" GENERATOR HOUSE
30'-0"x11'-0" GENERATOR HOUSE
30'-0"x11'-0" GENERATOR HOUSE
27'-0"x8'-0" LUBESTER PUMP PARTS HOUSE
35'-0"x8'-1 1/4" DIESEL TANK
WIND: Prevailing winds are from the Southwest
Secondary Egress

Oxy USA Inc. - Charlie Chocolate 14-15 Fed Com 31H

1. Geologic Formations

TVD of target	8815'	Pilot Hole Depth	10390'
MD at TD:	19165'	Deepest Expected fresh water:	64'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	64	
Salado	635	
Yates	890	
Capitan Reef	2,300	
Lamar/Delaware	3,000	Oil/Gas
Bone Spring	5,390	Oil/Gas
1st Bone Spring	6,670	Oil/Gas
2nd Bone Spring	6,900	Oil/Gas
3rd Bone Spring	7,790	Oil/Gas
Wolfcamp (Lateral)	**8,994**	**Oil/Gas/Depletion**
Penn	9,850	Oil/Gas/Depletion
Strawn (Pilot)	**10,123**	**Oil/Gas**

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size (in)	Casing Interval From (ft)	Casing Interval To (ft)	Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	Buoyant Body SF Tension	Buoyant Joint SF Tension
17.5	0	400	13.375	54.5	J-55	BTC	1.125	1.2	1.4	1.4
12.25	0	3,050	9.625	43.5	L-80	BTC	1.125	1.2	1.4	1.4
8.5	0	2,950	7.625	26.4	L-80 HC	SF	1.125	1.2	1.4	1.4
	2,950	6,950	7.625	26.4	L-80 HC	FJ	1.125	1.2	1.4	1.4
6.75	0	19,165	5.5	20	P-110	DQX	1.125	1.2	1.4	1.4
							SF Values will meet or Exceed			

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

*Oxy requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool may be run in case hole conditions merit pumping a second stage cement job to comply with permitted top of cement. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

*Oxy requests the option to run production casing with DQX, SF TORQ, and/or DQW TORQ connections to accommodate hole conditions or drilling operations.

Annular Clearance Variance Request

As per the agreement reached in the Oxy/BLM meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422" annular clearance requirement from Onshore Order #2 under the following conditions:

Oxy USA Inc. - Charlie Chocolate 14-15 Fed Com 31H

1. Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casings.
2. Annular clearance less than 0.422" is acceptable for the curve and lateral portions of the production open hole section.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	N
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	Y
If yes, are there three strings cemented to surface?	Y

3. Cementing Program

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H20 (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Surface (Tail)	429	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate (Lead)	615	12.9	1.88	10.130	14:22	Pozzolan Cement, Retarder
Intermediate (Tail)	155	14.8	1.33	6.370	12:45	Class C Cement, Accelerator
Intermediate II (Lead)	242	10.2	2.58	11.568	6:59	Pozzolan Cement, Retarder
Intermediate II (Tail)	35	13.2	1.65	8.640	11:54	Class H Cement, Retarder, Dispersant, Salt
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	931	13.2	1.38	6.686	3:49	Class H Cement, Retarder, Dispersant, Salt

Oxy USA Inc. - Charlie Chocolate 14-15 Fed Com 31H

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	N/A	N/A	N/A
Surface (Tail)	0	400	100%
Intermediate (Lead)	0	2550	50%
Intermediate (Tail)	2550	3050	20%
Intermediate II (Lead)	0	6450	20%
Intermediate II (Tail)	6450	6950	20%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	6450	19165	20%

Pilot Hole Cementing specs:
Pilot hole depth: 10350' MD
KOP: 8211' MD (Open Hole)

Plug	Plug Top	Plug Bottom	% Excess	No. Sacks	Wt. (lb/gal)	Yld (ft3/sack)	Water (gal/sk)	Slurry Description and Cement Type
1	9850	10350	10	174	14.4	1.246	5.52	50% H Cement, 50% Poz, ~3.5% Bentonite
2	8850	9350	10	174	14.4	1.246	5.52	50% H Cement, 50% Poz, ~3.5% Bentonite
3	8411	8850	10	153	14.4	1.246	5.52	50% H Cement, 50% Poz, ~3.5% Bentonite
4	7911	8411	20	252	17.5	0.94	3.47	H Cement, Dispersant, Retarder

Note: The first plug is designed to be 500' in length to isolate the bottom Wolfcamp from potential high pressure zones. The second, and third plugs will be 400-500' in length. Plan to bring fifth plug 300ft above the curve KOP.

Offline Cementing

Oxy requests a variance to cement the 9.625" and/or 7.625" intermediate casing strings offline in accordance to the approved variance, EC Tran 461365.

The summarized operational sequence will be as follows:

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe).
2. Land casing.
3. Fill pipe with kill weight fluid, and confirm well is static.
    a. If well is not static notify BLM and kill well.
    b. Once well is static notify BLM with intent to proceed with nipple down and offline cementing.
4. Set and pressure test annular packoff.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange.
8. If well is not static notify BLM and kill well prior to cementing or nippling up for further remediation.
9. Install offline cement tool.
10. Rig up cement equipment.

a. Notify BLM prior to cement job.

11. Perform cement job.
12. Confirm well is static and floats are holding after cement job.
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12.25" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250/3000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
8.5" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250/3000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole (Pilot)	13-5/8"	5M	Annular	✓	70% of working pressure
		10M	Blind Ram	✓	250/10000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole (Lateral)	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250/5000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

Per BLM's Memorandum No. NM-2017-008: *Decision and Rationale for a Variance Allowing the Use of a 5M Annular Preventer with a 10M BOP Stack*, Oxy requests to employ a 5M annular with a 10M BOPE stack in the pilot and lateral sections of the well and will ensure that two barriers to flow are maintained at all times. Please see attached Well Control Plan.

Oxy will utilize a 5M annular with a 10M BOPE stack. The BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2.

	On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Y | Are anchors required by manufacturer?
	A multibowl or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015. See attached schematics.

BOP Break Testing Request

As per the agreement reached in the Oxy/BLM meeting on Feb 22, 2018, Oxy requests permission to allow BOP Break Testing under the following conditions:

- After a full BOP test is conducted on the first well on the pad.
- When skidding to drill an intermediate section that does not penetrate into the Wolfcamp.
- Full BOP test will be required prior to drilling any production hole.

5. Mud Program

PILOT

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	400	Water-Based Mud	8.6-8.8	40-60	N/C
400	3050	Saturated Brine-Based Mud	9.8-10.0	35-45	N/C
3050	6950	Saturated Brine-Based Mud or Water-Based Mud	9.0-9.6	38-50	N/C
6950	10390	Water-Based Mud	10.0-13.5	42-48	< 10 cc

LATERAL

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
6950	19165	Saturated Brine-Based Mud or Oil-Based Mud	9.5-12.0	38-50	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Oxy will use a closed mud system.

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring

6. Logging and Testing Procedures

Logs Planned		Interval
Yes	FMI	Pilot & Lateral
Yes	Mud Log	Pilot & Lateral
Yes	Triple Combo (Spectral Gamma, Dipole Sonic, CMR)	Pilot & Lateral

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7266 psi (Pilot) 5501 psi (Lateral)
Abnormal Temperature	No
BH Temperature at deepest TVD	163 °F (Pilot) 151 °F (Lateral)

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe.	No
Will more than one drilling rig be used for drilling operations? If yes, describe. • Oxy requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that Oxy would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes

Total estimated cuttings volume: 1561.1 bbls (Pilot & Lateral).

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Clint Rothe	Drilling Engineer	713-840-3065	210-232-5694
William Turner	Drilling Engineer Supervisor	713-350-4951	661-817-4586
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
Diego Tellez	Drilling Manager	713-350-4602	713-303-4932

Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: Charlie Chocolate 14-15
Well: Charlie Chocolate 14-15 Fed Com 31H
Wellbore: Pilot
Design: Permitting Plan

PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

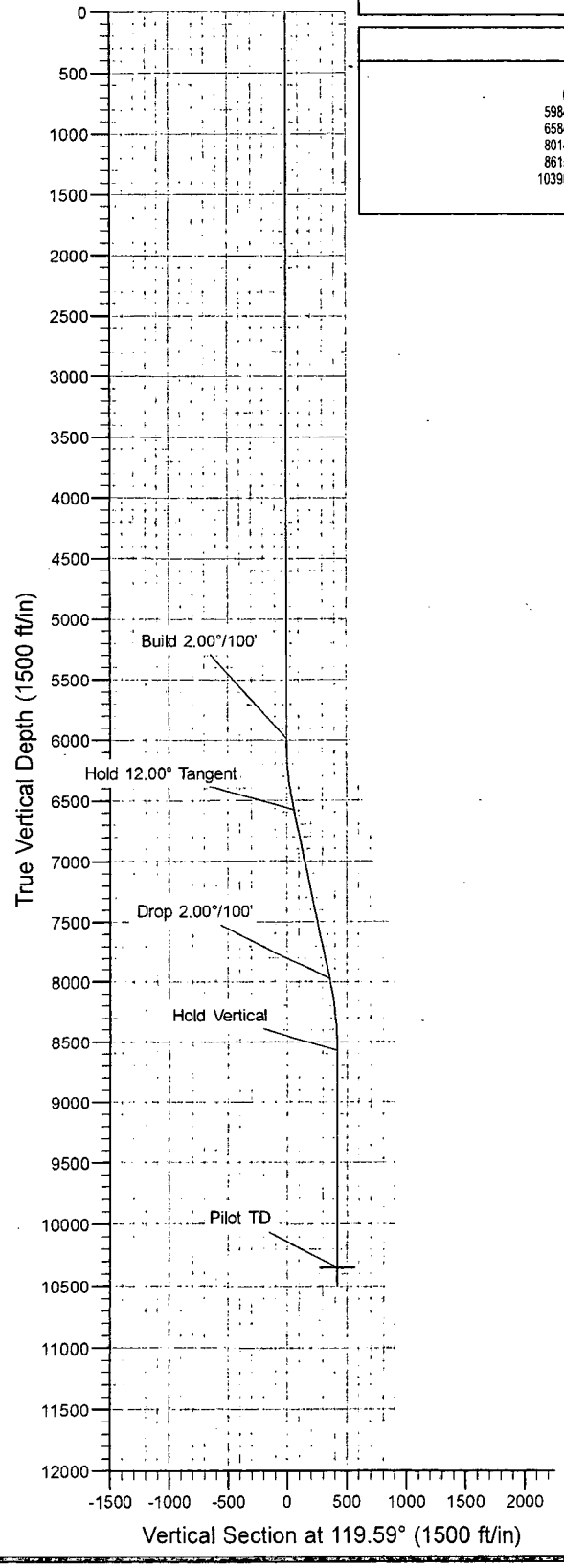
WELL DETAILS: Charlie Chocolate 14-15 Fed Com 31H

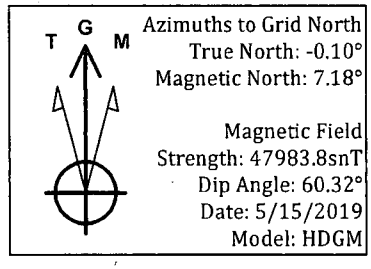
Ground Level: 3263.70

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	574700.48	600645.96	32° 34' 47.130378 N	104° 8' 26.833530 W

SECTION DETAILS

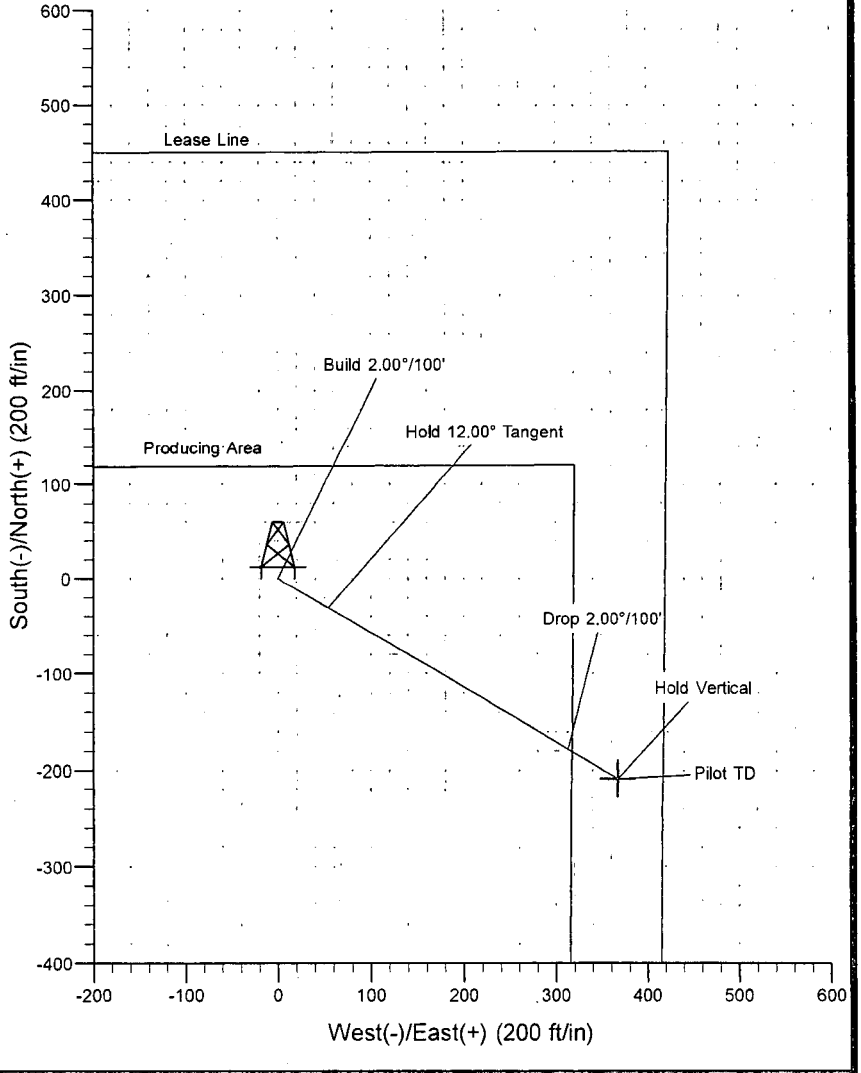
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5984.00	0.00	0.00	5984.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
6584.18	12.00	119.59	6579.80	-30.93	54.47	2.00	119.59	62.64	Hold 12.00° Tangent
8014.86	12.00	119.59	7979.20	-177.87	313.20	0.00	0.00	360.18	Drop 2.00°/100'
8615.04	0.00	0.00	8575.00	-208.80	367.67	2.00	180.00	422.82	Hold Vertical
10390.04	0.00	0.00	10350.00	-208.80	367.67	0.00	0.00	422.82	TD Pilot Hole at 10390.04' MD





Azimuths to Grid North
True North: -0.10°
Magnetic North: 7.18°

Magnetic Field
Strength: 47983.8snT
Dip Angle: 60.32°
Date: 5/15/2019
Model: HDGM



OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)
Charlie Chocolate 14-15
Charlie Chocolate 14-15 Fed Com 31H

Pilot

Plan: Permitting Plan

Standard Planning Report

16 May, 2019

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	**North Reference:**	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Pilot		
Design:	Permitting Plan		

Project: PRD NM DIRECTIONAL PLANS (NAD 1983)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site: Charlie Chocolate 14-15

Site Position:		**Northing:**	574,700.48 usft	**Latitude:**	32° 34' 47.130378 N
From:	Map	**Easting:**	600,645.96 usft	**Longitude:**	104° 8' 26.833530 W
Position Uncertainty:	2.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.10 °

Well: Charlie Chocolate 14-15 Fed Com 31H

Well Position	**+N/-S**	0.00 ft	**Northing:**	574,700.48 usft	**Latitude:**	32° 34' 47.130378 N
	+E/-W	0.00 ft	**Easting:**	600,645.96 usft	**Longitude:**	104° 8' 26.833530 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,263.70 ft

Wellbore: Pilot

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/15/2019	7.28	60.32	47,984

Design: Permitting Plan

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	119.59

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,984.00	0.00	0.00	5,984.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,584.18	12.00	119.59	6,579.80	-30.93	54.47	2.00	2.00	0.00	119.59	
8,014.86	12.00	119.59	7,979.20	-177.87	313.20	0.00	0.00	0.00	0.00	
8,615.04	0.00	0.00	8,575.00	-208.80	367.67	2.00	-2.00	0.00	180.00	
10,390.04	0.00	0.00	10,350.00	-208.80	367.67	0.00	0.00	0.00	0.00	Pilot TD (Charlie

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	**North Reference:**	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Pilot		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

Database:	HOPSPP	Local Co-ordinate Reference:	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	TVD Reference:	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	MD Reference:	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	North Reference:	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,984.00	0.00	0.00	5,984.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.32	119.59	6,000.00	-0.02	0.04	0.04	2.00	2.00	0.00
6,100.00	2.32	119.59	6,099.97	-1.16	2.04	2.35	2.00	2.00	0.00
6,200.00	4.32	119.59	6,199.80	-4.02	7.08	8.14	2.00	2.00	0.00
6,300.00	6.32	119.59	6,299.36	-8.60	15.14	17.41	2.00	2.00	0.00
6,400.00	8.32	119.59	6,398.54	-14.89	26.22	30.15	2.00	2.00	0.00
6,500.00	10.32	119.59	6,497.21	-22.89	40.30	46.34	2.00	2.00	0.00
6,584.18	12.00	119.59	6,579.80	-30.93	54.47	62.64	2.00	2.00	0.00
6,600.00	12.00	119.59	6,595.27	-32.56	57.33	65.93	0.00	0.00	0.00
6,700.00	12.00	119.59	6,693.09	-42.83	75.42	86.73	0.00	0.00	0.00
6,800.00	12.00	119.59	6,790.90	-53.10	93.50	107.52	0.00	0.00	0.00
6,900.00	12.00	119.59	6,888.71	-63.37	111.58	128.32	0.00	0.00	0.00
7,000.00	12.00	119.59	6,986.53	-73.64	129.67	149.12	0.00	0.00	0.00
7,100.00	12.00	119.59	7,084.34	-83.91	147.75	169.92	0.00	0.00	0.00
7,200.00	12.00	119.59	7,182.15	-94.18	165.84	190.71	0.00	0.00	0.00
7,300.00	12.00	119.59	7,279.97	-104.45	183.92	211.51	0.00	0.00	0.00
7,400.00	12.00	119.59	7,377.78	-114.72	202.01	232.31	0.00	0.00	0.00
7,500.00	12.00	119.59	7,475.59	-124.99	220.09	253.11	0.00	0.00	0.00
7,600.00	12.00	119.59	7,573.41	-135.26	238.18	273.90	0.00	0.00	0.00
7,700.00	12.00	119.59	7,671.22	-145.53	256.26	294.70	0.00	0.00	0.00
7,800.00	12.00	119.59	7,769.03	-155.80	274.35	315.50	0.00	0.00	0.00
7,900.00	12.00	119.59	7,866.85	-166.07	292.43	336.30	0.00	0.00	0.00
8,000.00	12.00	119.59	7,964.66	-176.34	310.52	357.09	0.00	0.00	0.00
8,014.86	12.00	119.59	7,979.20	-177.87	313.20	360.18	0.00	0.00	0.00
8,100.00	10.30	119.59	8,062.73	-186.00	327.52	376.65	2.00	-2.00	0.00
8,200.00	8.30	119.59	8,161.41	-193.98	341.57	392.81	2.00	-2.00	0.00
8,300.00	6.30	119.59	8,260.59	-200.25	352.62	405.52	2.00	-2.00	0.00
8,400.00	4.30	119.59	8,360.16	-204.81	360.66	414.76	2.00	-2.00	0.00
8,500.00	2.30	119.59	8,459.99	-207.66	365.66	420.51	2.00	-2.00	0.00
8,600.00	0.30	119.59	8,559.96	-208.78	367.64	422.78	2.00	-2.00	0.00
8,615.04	0.00	0.00	8,575.00	-208.80	367.67	422.82	2.00	-2.00	0.00
8,700.00	0.00	0.00	8,659.96	-208.80	367.67	422.82	0.00	0.00	0.00
8,800.00	0.00	0.00	8,759.96	-208.80	367.67	422.82	0.00	0.00	0.00
8,900.00	0.00	0.00	8,859.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,000.00	0.00	0.00	8,959.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,100.00	0.00	0.00	9,059.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,200.00	0.00	0.00	9,159.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,300.00	0.00	0.00	9,259.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,400.00	0.00	0.00	9,359.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,500.00	0.00	0.00	9,459.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,600.00	0.00	0.00	9,559.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,700.00	0.00	0.00	9,659.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,800.00	0.00	0.00	9,759.96	-208.80	367.67	422.82	0.00	0.00	0.00
9,900.00	0.00	0.00	9,859.96	-208.80	367.67	422.82	0.00	0.00	0.00
10,000.00	0.00	0.00	9,959.96	-208.80	367.67	422.82	0.00	0.00	0.00
10,100.00	0.00	0.00	10,059.96	-208.80	367.67	422.82	0.00	0.00	0.00
10,200.00	0.00	0.00	10,159.96	-208.80	367.67	422.82	0.00	0.00	0.00
10,300.00	0.00	0.00	10,259.96	-208.80	367.67	422.82	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	**North Reference:**	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Pilot		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,390.04	0.00	0.00	10,350.00	-208.80	367.67	422.82	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Pilot TD (Charlie - plan hits target center - Point	0.00	0.00	10,350.00	-208.80	367.67	574,491.70	601,013.60	32° 34' 45.057802 N	104° 8' 22.541209

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
5,984.00	5,984.00	0.00	0.00	Build 2.00°/100'
6,584.18	6,579.80	-30.93	54.47	Hold 12.00° Tangent
8,014.86	7,979.20	-177.87	313.20	Drop 2.00°/100'
8,615.04	8,575.00	-208.80	367.67	Hold Vertical
10,390.04	10,350.00	-208.80	367.67	TD Pilot Hole at 10390.04' MD

Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)
Site:	Charlie Chocolate 14-15
Well:	Charlie Chocolate 14-15 Fed Com 31H
Wellbore:	Wellbore #2
Design:	Permitting Plan

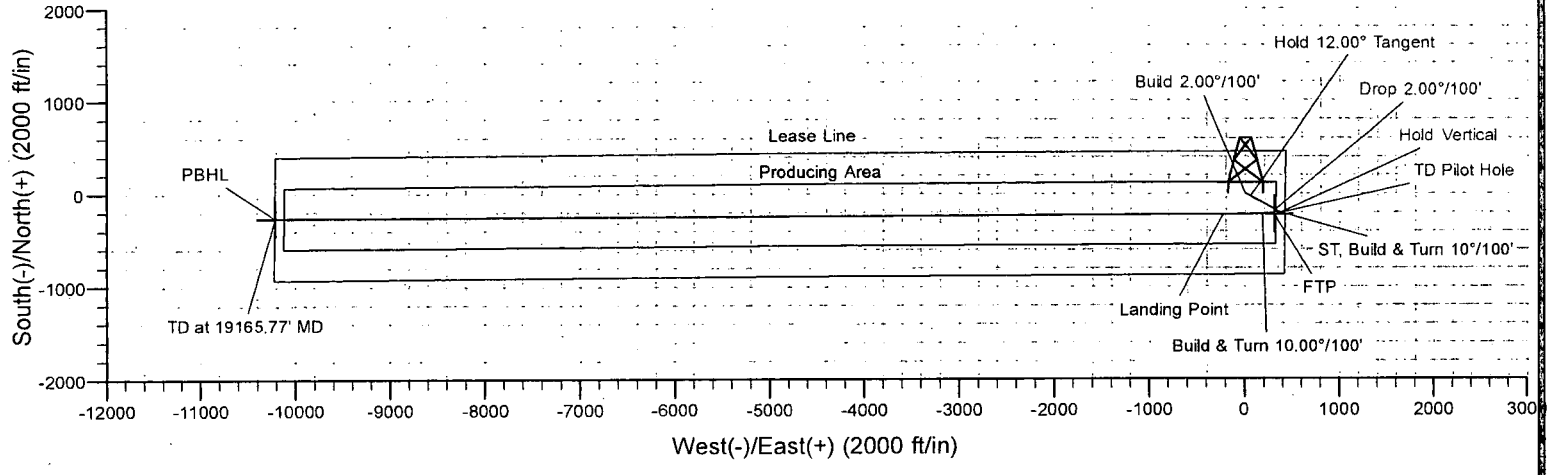
PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level

T G M

Azimuths to Grid North
True North: -0.10°
Magnetic North: 7.18°

Magnetic Field
Strength: 47983.8snT
Dip Angle: 60.32°
Date: 5/15/2019
Model: HDGM



WELL DETAILS: Charlie Chocolate 14-15 Fed Com 31H

Ground Level: 3263.70

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	574700.48	600645.96	32° 34' 47.130378 N	104° 8' 26.833530 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
8211.10	8.08	119.59	8172.39	-194.76	342.95	0.00	0.00	-337.83	ST, Build & Turn 10°/100'
8731.59	45.00	268.50	8647.18	-219.35	179.39	10.00	152.41	-173.69	Build & Turn 10.00°/100'
9189.77	90.80	269.78	8815.00	-224.75	-233.87	10.00	1.79	239.58	Landing Point
19165.77	90.80	269.78	8675.00	-262.57	-10208.82	0.00	0.00	10212.19	TD at 19165.77' MD

OXY

PRD NM DIRECTIONAL PLANS (NAD 1983)
Charlie Chocolate 14-15
Charlie Chocolate 14-15 Fed Com 31H

Wellbore #2

Plan: Permitting Plan

Standard Planning Report

16 May, 2019

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	**North Reference:**	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Permitting Plan		

Project PRD NM DIRECTIONAL PLANS (NAD 1983)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site Charlie Chocolate 14-15

Site Position:		**Northing:**	574,700.48 usft	**Latitude:**	32° 34' 47.130378 N
From:	Map	**Easting:**	600,645.96 usft	**Longitude:**	104° 8' 26.833530 W
Position Uncertainty:	2.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.10 °

Well Charlie Chocolate 14-15 Fed Com 31H

Well Position	**+N/-S**	0.00 ft	**Northing:**	574,700.48 usft	**Latitude:**	32° 34' 47.130378 N
	+E/-W	0.00 ft	**Easting:**	600,645.96 usft	**Longitude:**	104° 8' 26.833530 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,263.70 ft

Wellbore Wellbore #2

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/15/2019	7.28	60.32	47,984

Design Permitting Plan

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	8,211.10

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	268.53

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
8,211.10	8.08	119.59	8,172.39	-194.76	342.95	0.00	0.00	0.00	0.00	
8,731.59	45.00	268.50	8,647.18	-219.35	179.39	10.00	7.09	28.61	152.41	
9,189.77	90.80	269.78	8,815.00	-224.75	-233.87	10.00	10.00	0.28	1.79	
19,165.77	90.80	269.78	8,675.00	-262.57	-10,208.82	0.00	0.00	0.00	0.00	PBHL (Charlie

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	**North Reference:**	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,211.10	8.08	119.59	8,172.39	-194.76	342.95	-337.83	0.00	0.00	0.00
8,300.00	4.11	207.00	8,260.92	-200.69	346.94	-341.67	10.00	-4.47	98.32
8,400.00	12.29	254.82	8,359.89	-206.69	335.01	-329.59	10.00	8.18	47.82
8,500.00	22.02	262.96	8,455.34	-211.78	306.06	-300.52	10.00	9.73	8.14
8,600.00	31.92	266.23	8,544.36	-215.83	260.96	-255.33	10.00	9.89	3.27
8,700.00	41.86	268.06	8,624.25	-218.70	201.09	-195.40	10.00	9.94	1.84
8,731.59	45.00	268.50	8,647.18	-219.35	179.39	-173.69	10.00	9.96	1.38
8,800.00	51.84	268.77	8,692.56	-220.56	128.26	-122.55	10.00	10.00	0.40
8,900.00	61.83	269.09	8,747.19	-222.11	44.67	-38.95	10.00	10.00	0.32
9,000.00	71.83	269.35	8,786.48	-223.36	-47.14	52.87	10.00	10.00	0.26
9,100.00	81.83	269.58	8,809.24	-224.26	-144.38	150.10	10.00	10.00	0.23
9,189.77	90.80	269.78	8,815.00	-224.75	-233.87	239.58	10.00	10.00	0.22
9,200.00	90.80	269.78	8,814.86	-224.79	-244.10	249.80	0.00	0.00	0.00
9,300.00	90.80	269.78	8,813.45	-225.17	-344.09	349.77	0.00	0.00	0.00
9,400.00	90.80	269.78	8,812.05	-225.55	-444.08	449.73	0.00	0.00	0.00
9,500.00	90.80	269.78	8,810.65	-225.93	-544.07	549.70	0.00	0.00	0.00
9,600.00	90.80	269.78	8,809.24	-226.31	-644.06	649.67	0.00	0.00	0.00
9,700.00	90.80	269.78	8,807.84	-226.69	-744.05	749.63	0.00	0.00	0.00
9,800.00	90.80	269.78	8,806.44	-227.06	-844.04	849.60	0.00	0.00	0.00
9,900.00	90.80	269.78	8,805.03	-227.44	-944.03	949.57	0.00	0.00	0.00
10,000.00	90.80	269.78	8,803.63	-227.82	-1,044.02	1,049.53	0.00	0.00	0.00
10,100.00	90.80	269.78	8,802.23	-228.20	-1,144.01	1,149.50	0.00	0.00	0.00
10,200.00	90.80	269.78	8,800.82	-228.58	-1,244.00	1,249.46	0.00	0.00	0.00
10,300.00	90.80	269.78	8,799.42	-228.96	-1,343.99	1,349.43	0.00	0.00	0.00
10,400.00	90.80	269.78	8,798.02	-229.34	-1,443.98	1,449.40	0.00	0.00	0.00
10,500.00	90.80	269.78	8,796.61	-229.72	-1,543.97	1,549.36	0.00	0.00	0.00
10,600.00	90.80	269.78	8,795.21	-230.10	-1,643.96	1,649.33	0.00	0.00	0.00
10,700.00	90.80	269.78	8,793.81	-230.48	-1,743.95	1,749.29	0.00	0.00	0.00
10,800.00	90.80	269.78	8,792.40	-230.86	-1,843.93	1,849.26	0.00	0.00	0.00
10,900.00	90.80	269.78	8,791.00	-231.24	-1,943.92	1,949.23	0.00	0.00	0.00
11,000.00	90.80	269.78	8,789.60	-231.61	-2,043.91	2,049.19	0.00	0.00	0.00
11,100.00	90.80	269.78	8,788.19	-231.99	-2,143.90	2,149.16	0.00	0.00	0.00
11,200.00	90.80	269.78	8,786.79	-232.37	-2,243.89	2,249.13	0.00	0.00	0.00
11,300.00	90.80	269.78	8,785.39	-232.75	-2,343.88	2,349.09	0.00	0.00	0.00
11,400.00	90.80	269.78	8,783.98	-233.13	-2,443.87	2,449.06	0.00	0.00	0.00
11,500.00	90.80	269.78	8,782.58	-233.51	-2,543.86	2,549.02	0.00	0.00	0.00
11,600.00	90.80	269.78	8,781.18	-233.89	-2,643.85	2,648.99	0.00	0.00	0.00
11,700.00	90.80	269.78	8,779.77	-234.27	-2,743.84	2,748.96	0.00	0.00	0.00
11,800.00	90.80	269.78	8,778.37	-234.65	-2,843.83	2,848.92	0.00	0.00	0.00
11,900.00	90.80	269.78	8,776.97	-235.03	-2,943.82	2,948.89	0.00	0.00	0.00
12,000.00	90.80	269.78	8,775.56	-235.41	-3,043.81	3,048.85	0.00	0.00	0.00
12,100.00	90.80	269.78	8,774.16	-235.78	-3,143.80	3,148.82	0.00	0.00	0.00
12,200.00	90.80	269.78	8,772.76	-236.16	-3,243.79	3,248.79	0.00	0.00	0.00
12,300.00	90.80	269.78	8,771.35	-236.54	-3,343.78	3,348.75	0.00	0.00	0.00
12,400.00	90.80	269.78	8,769.95	-236.92	-3,443.77	3,448.72	0.00	0.00	0.00
12,500.00	90.80	269.78	8,768.55	-237.30	-3,543.76	3,548.68	0.00	0.00	0.00
12,600.00	90.80	269.78	8,767.14	-237.68	-3,643.74	3,648.65	0.00	0.00	0.00
12,700.00	90.80	269.78	8,765.74	-238.06	-3,743.73	3,748.62	0.00	0.00	0.00
12,800.00	90.80	269.78	8,764.34	-238.44	-3,843.72	3,848.58	0.00	0.00	0.00
12,900.00	90.80	269.78	8,762.93	-238.82	-3,943.71	3,948.55	0.00	0.00	0.00
13,000.00	90.80	269.78	8,761.53	-239.20	-4,043.70	4,048.52	0.00	0.00	0.00
13,100.00	90.80	269.78	8,760.13	-239.58	-4,143.69	4,148.48	0.00	0.00	0.00
13,200.00	90.80	269.78	8,758.72	-239.96	-4,243.68	4,248.45	0.00	0.00	0.00
13,300.00	90.80	269.78	8,757.32	-240.33	-4,343.67	4,348.41	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	**North Reference:**	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.00	90.80	269.78	8,755.91	-240.71	-4,443.66	4,448.38	0.00	0.00	0.00
13,500.00	90.80	269.78	8,754.51	-241.09	-4,543.65	4,548.35	0.00	0.00	0.00
13,600.00	90.80	269.78	8,753.11	-241.47	-4,643.64	4,648.31	0.00	0.00	0.00
13,700.00	90.80	269.78	8,751.70	-241.85	-4,743.63	4,748.28	0.00	0.00	0.00
13,800.00	90.80	269.78	8,750.30	-242.23	-4,843.62	4,848.24	0.00	0.00	0.00
13,900.00	90.80	269.78	8,748.90	-242.61	-4,943.61	4,948.21	0.00	0.00	0.00
14,000.00	90.80	269.78	8,747.49	-242.99	-5,043.60	5,048.18	0.00	0.00	0.00
14,100.00	90.80	269.78	8,746.09	-243.37	-5,143.59	5,148.14	0.00	0.00	0.00
14,200.00	90.80	269.78	8,744.69	-243.75	-5,243.58	5,248.11	0.00	0.00	0.00
14,300.00	90.80	269.78	8,743.28	-244.13	-5,343.57	5,348.08	0.00	0.00	0.00
14,400.00	90.80	269.78	8,741.88	-244.50	-5,443.55	5,448.04	0.00	0.00	0.00
14,500.00	90.80	269.78	8,740.48	-244.88	-5,543.54	5,548.01	0.00	0.00	0.00
14,600.00	90.80	269.78	8,739.07	-245.26	-5,643.53	5,647.97	0.00	0.00	0.00
14,700.00	90.80	269.78	8,737.67	-245.64	-5,743.52	5,747.94	0.00	0.00	0.00
14,800.00	90.80	269.78	8,736.27	-246.02	-5,843.51	5,847.91	0.00	0.00	0.00
14,900.00	90.80	269.78	8,734.86	-246.40	-5,943.50	5,947.87	0.00	0.00	0.00
15,000.00	90.80	269.78	8,733.46	-246.78	-6,043.49	6,047.84	0.00	0.00	0.00
15,100.00	90.80	269.78	8,732.06	-247.16	-6,143.48	6,147.80	0.00	0.00	0.00
15,200.00	90.80	269.78	8,730.65	-247.54	-6,243.47	6,247.77	0.00	0.00	0.00
15,300.00	90.80	269.78	8,729.25	-247.92	-6,343.46	6,347.74	0.00	0.00	0.00
15,400.00	90.80	269.78	8,727.85	-248.30	-6,443.45	6,447.70	0.00	0.00	0.00
15,500.00	90.80	269.78	8,726.44	-248.68	-6,543.44	6,547.67	0.00	0.00	0.00
15,600.00	90.80	269.78	8,725.04	-249.05	-6,643.43	6,647.63	0.00	0.00	0.00
15,700.00	90.80	269.78	8,723.64	-249.43	-6,743.42	6,747.60	0.00	0.00	0.00
15,800.00	90.80	269.78	8,722.23	-249.81	-6,843.41	6,847.57	0.00	0.00	0.00
15,900.00	90.80	269.78	8,720.83	-250.19	-6,943.40	6,947.53	0.00	0.00	0.00
16,000.00	90.80	269.78	8,719.43	-250.57	-7,043.39	7,047.50	0.00	0.00	0.00
16,100.00	90.80	269.78	8,718.02	-250.95	-7,143.38	7,147.47	0.00	0.00	0.00
16,200.00	90.80	269.78	8,716.62	-251.33	-7,243.36	7,247.43	0.00	0.00	0.00
16,300.00	90.80	269.78	8,715.22	-251.71	-7,343.35	7,347.40	0.00	0.00	0.00
16,400.00	90.80	269.78	8,713.81	-252.09	-7,443.34	7,447.36	0.00	0.00	0.00
16,500.00	90.80	269.78	8,712.41	-252.47	-7,543.33	7,547.33	0.00	0.00	0.00
16,600.00	90.80	269.78	8,711.01	-252.85	-7,643.32	7,647.30	0.00	0.00	0.00
16,700.00	90.80	269.78	8,709.60	-253.22	-7,743.31	7,747.26	0.00	0.00	0.00
16,800.00	90.80	269.78	8,708.20	-253.60	-7,843.30	7,847.23	0.00	0.00	0.00
16,900.00	90.80	269.78	8,706.80	-253.98	-7,943.29	7,947.19	0.00	0.00	0.00
17,000.00	90.80	269.78	8,705.39	-254.36	-8,043.28	8,047.16	0.00	0.00	0.00
17,100.00	90.80	269.78	8,703.99	-254.74	-8,143.27	8,147.13	0.00	0.00	0.00
17,200.00	90.80	269.78	8,702.59	-255.12	-8,243.26	8,247.09	0.00	0.00	0.00
17,300.00	90.80	269.78	8,701.18	-255.50	-8,343.25	8,347.06	0.00	0.00	0.00
17,400.00	90.80	269.78	8,699.78	-255.88	-8,443.24	8,447.03	0.00	0.00	0.00
17,500.00	90.80	269.78	8,698.38	-256.26	-8,543.23	8,546.99	0.00	0.00	0.00
17,600.00	90.80	269.78	8,696.97	-256.64	-8,643.22	8,646.96	0.00	0.00	0.00
17,700.00	90.80	269.78	8,695.57	-257.02	-8,743.21	8,746.92	0.00	0.00	0.00
17,800.00	90.80	269.78	8,694.17	-257.40	-8,843.20	8,846.89	0.00	0.00	0.00
17,900.00	90.80	269.78	8,692.76	-257.77	-8,943.18	8,946.86	0.00	0.00	0.00
18,000.00	90.80	269.78	8,691.36	-258.15	-9,043.17	9,046.82	0.00	0.00	0.00
18,100.00	90.80	269.78	8,689.96	-258.53	-9,143.16	9,146.79	0.00	0.00	0.00
18,200.00	90.80	269.78	8,688.55	-258.91	-9,243.15	9,246.75	0.00	0.00	0.00
18,300.00	90.80	269.78	8,687.15	-259.29	-9,343.14	9,346.72	0.00	0.00	0.00
18,400.00	90.80	269.78	8,685.75	-259.67	-9,443.13	9,446.69	0.00	0.00	0.00
18,500.00	90.80	269.78	8,684.34	-260.05	-9,543.12	9,546.65	0.00	0.00	0.00
18,600.00	90.80	269.78	8,682.94	-260.43	-9,643.11	9,646.62	0.00	0.00	0.00
18,700.00	90.80	269.78	8,681.54	-260.81	-9,743.10	9,746.59	0.00	0.00	0.00

Database:	HOPSPP	**Local Co-ordinate Reference:**	Well Charlie Chocolate 14-15 Fed Com 31H
Company:	ENGINEERING DESIGNS	**TVD Reference:**	RKB=26.5' @ 3290.20ft
Project:	PRD NM DIRECTIONAL PLANS (NAD 1983)	**MD Reference:**	RKB=26.5' @ 3290.20ft
Site:	Charlie Chocolate 14-15	**North Reference:**	Grid
Well:	Charlie Chocolate 14-15 Fed Com 31H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #2		
Design:	Permitting Plan		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
18,800.00	90.80	269.78	8,680.13	-261.19	-9,843.09	9,846.55	0.00	0.00	0.00
18,900.00	90.80	269.78	8,678.73	-261.57	-9,943.08	9,946.52	0.00	0.00	0.00
19,000.00	90.80	269.78	8,677.33	-261.94	-10,043.07	10,046.48	0.00	0.00	0.00
19,100.00	90.80	269.78	8,675.92	-262.32	-10,143.06	10,146.45	0.00	0.00	0.00
19,165.77	90.80	269.78	8,675.00	-262.57	-10,208.82	10,212.19	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (Charlie - plan hits target center - Point	0.00	0.00	8,675.00	-262.57	-10,208.82	574,437.93	590,438.05	32° 34' 44.699382 N	104° 10' 26.142437
FTP (Charlie - plan misses target center by 205.24ft at 8752.27ft MD (8661.54 TVD, -219.73 N, 164.51 E) - Point	0.00	0.00	8,815.00	-222.69	300.77	574,477.81	600,946.70	32° 34' 44.921559 N	104° 8' 23.323388

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,211.10	8,172.39	-194.76	342.95	ST, Build & Turn 10°/100'
8,731.59	8,647.18	-219.35	179.39	Build & Turn 10.00°/100'
9,189.77	8,815.00	-224.75	-233.87	Landing Point
19,165.77	8,675.00	-262.57	-10,208.82	TD at 19165.77' MD