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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM096244

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.
DL 4 33 LOCH NESS FED COM P1
4H
32 6765

2. Name of Operator
CHEVRON USA INCORPORATED (4323)

9. API Well No.
30-025-46644

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
6301 Deauville Blvd. Midland TX 79706	(432)687-7866	Wildcat RED TANK; BS, EAST (51687)

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

At surface SWSE / 264 FSL / 1347 FEL / LAT 32.414283 / LONG -103.573242

At proposed prod. zone NWNE / 25 FNL / 2310 FEL / LAT 32.442522 / LONG -103.576411

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 4 / T22S / R33E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
29 miles	EDDY Lea	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
264 feet	2360.39	640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
1880 feet	9521 feet / 19838 feet	FED: CA0329

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3634 feet	05/01/2020	146 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	04/30/2019

Title
Permitting Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Christopher Walls / Ph: (575)234-2234	12/07/2019

Title	Office
Petroleum Engineer	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 12/16/19

KZ 12/23/19

SL

APPROVED WITH CONDITIONS

Approval Date: 12/07/2019

(Continued on page 2)

*(Instructions on page 2)

Additional Operator Remarks

Location of Well

1. SHL: SWSE / 264 FSL / 1347 FEL / TWSP: 22S / RANGE: 33E / SECTION: 4 / LAT: 32.414283 / LONG: -103.573242 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSE / 100 FSL / 2310 FEL / TWSP: 22S / RANGE: 33E / SECTION: 4 / LAT: 32.413835 / LONG: -103.576363 (TVD: 9181 feet, MD: 9255 feet)
   BHL: NWNE / 25 FNL / 2310 FEL / TWSP: 21S / RANGE: 33E / SECTION: 33 / LAT: 32.442522 / LONG: -103.576411 (TVD: 9521 feet, MD: 19838 feet)

BLM Point of Contact

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

Approval Date: 12/07/2019

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.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CHEVRON USA INCORPORATED
LEASE NO.:	NMNM096244
LOCATION:	SECTION 4, T22S, R33E, NMPM
COUNTY:	EDDY

WELL NAME & NO.:	4H - DL 4 33 LOCH NESS FED COM P1
SURFACE HOLE FOOTAGE:	264'/S & 1347'/E
BOTTOM HOLE FOOTAGE	25'/N & 2310/'E

WELL NAME & NO.:	5H - DL 4 33 LOCH NESS FED COM P1
SURFACE HOLE FOOTAGE:	264'/S & 1297'/E
BOTTOM HOLE FOOTAGE	25'/N & 1430/'E

WELL NAME & NO.:	6H - DL 4 33 LOCH NESS FED COM P1
SURFACE HOLE FOOTAGE:	264'/S & 1247'/E
BOTTOM HOLE FOOTAGE	25'/N & 550/'E

H2S	○ Yes	◉ No	
Potash	○ None	◉ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
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

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

Casing Design:

Approval Date: 12/07/2019

1. The **13-3/8** inch surface casing shall be set at approximately **800** feet (a minimum of **25 feet (Lea 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 **24 hours in the Potash Area** 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 **9-5/8** inch surface casing shall be set at approximately **4865** feet. 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 **Secretary Potash 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.

- ❖ In **Capitan Reef 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.

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

Option 1 (Single Stage):

- Cement should tie-back at least **50 feet** on top of Capitan Reef top. 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 should tie-back at least **50 feet** on top of Capitan Reef top. 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.

Operator has proposed to pump down 9-5/8" X 5-1/2" annulus. Operator must run a CBL from TD of the 5-1/2" casing to surface. Submit results to BLM.

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. 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 **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)

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)

☒ 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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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: The flex line must meet the requirements of API 16C. 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

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.

NMK10232019

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:
Elevation: 3634 ft

FORMATION	SUB-SEA TVD	TVD	MD	LITHOLOGIES	MIN. RESOURCES	PROD. FORMATION
Rustler	2374	1,260	1,260	ANHYD	N/A	
Castile	94	3,540	3,567	SALT	N/A	
Lamar	-1231	4,865	4,910	LIMESTONE	N/A	
Bell Canyon	-1356	4,990	5,037	SAND STONE	N/A	
Cherry Canyon	-2156	5,790	5,848	SAND STONE	N/A	
Brushy Canyon	-3391	7,025	7,092	SAND STONE	N/A	
Bone Spring	-5186	8,820	8,887	SHALE/LIMESTONE	N/A	
Upper Avalon	-5331	8,965	8,965	SHALE	Oil	
Upper Avalon Target 1	-5861	9,520	19,838	SHALE	Oil	

WELLBORE LOCATIONS	SUB-SEA TVD	RKB TVD	MD
SHL	3634	-	
KOP	-5314	8,948	9,015
FTP	-5547	9,181	9,255
LTP	-5886	9,520	19,763

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		900
Water	Cherry Canyon	5,790
Oil/Gas	Brushy Canyon	7,025
Oil/Gas	Avalon	8,965

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

3. BOP EQUIPMENT

Chevron will have a minimum of a 5,000 psi rig stack (see proposed schematic) for drill out below surface casing. The 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 per hole section, unless approval from BLM is received otherwise. Flex choke hose will be used for all wells on the pad (see attached specs and variance). BOP test will be conducted by a third party.

Chevron requests a variance to use a FMC Technologies UH-S 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 Technologies 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. All tests performed by third party.

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'	800'	17-1/2"	13-3/8"	54.5 #	J-55	BTC	New
Intermediate	0'	4,865'	12-1/4"	9-5/8"	40.0 #	HCK-55	LTC	New
Production	0'	19,838'	8-1/2"	5-1/2"	20.0 #	P-110	TXP BTC	New

Proposed	Hole Size	Casing Size	Top (MD)	Btm (MD)	Top (TVD)	Btm (TVD)	*Top (SSTVD)*	*Btm (SSTVD)*	Grade	Weight	Joint type
Surface	17-1/2"	13-3/8"	0'	800'	0'	800'	3,634'	2,834'	J-55	54.5 #	BTC
Intermediate	12-1/4"	9-5/8"	0'	4,910'	0'	4,865'	3,634'	-1,231'	HCK-55	40.0 #	LTC
Production	8-1/2"	5-1/2"	0'	19,838'	0'	9,520'	3,634'	-5,886'	P110	20.0 #	TXP-BTC

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 recalculated & 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:	850'	ftTVD
Intermediate Casing:	5,000'	ftTVD
Production Casing:	22,000'	ftMD

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.80	2.94	3.70	2.24
Intermediate	1.33	3.02	2.15	1.48
Production	1.11	2.51	2.47	1.33

The following worst case load cases were considered for calculation of the above Min. Safety Factors:

Burst Design	Surf	Int	Prod
Pressure Test- Surface, Int, Prod Csg P external: Mud weight above TOC, PP below P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Mud weight above TOC, PP below P internal: Dry Gas from Next Csg Point	X		
Gas over mud (60/40) - Int Csg P external: Mud weight above TOC, PP below P internal: 60% gas over 40% mud from hole TD PP		X	
Stimulation (Frac) Pressures- Prod Csg P external: Mud weight above TOC, PP below P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Mud weight above TOC, PP below P internal: Leak just below surf, 8.45 ppg packer fluid			X
Collapse Design	Surf	Int	Prod
Full Evacuation P external: Mud weight gradient P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: displacement fluid - water	X	X	X
Tension Design	Surf	Int	Prod
100k lb overpull	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	*Sacks*	Yield	Density	%Excess	Water	*Volume*	Additives
Surface					(cu ft/sk)	(ppg)	Open Hole	gal/sk	cuft	
Tail	Class C	0'	800'	1204	1.34	14.8	125	6.40	1613	Extender, Antifoam, Retarder
Intermediate Csg										
Lead	Class C	0'	3,910'	957	2.56	11.9	100	14.66	2449	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	3,910'	4,910'	382	1.33	14.8	50	6.38	507	Extender, Antifoam, Retarder, Viscosifier
Production										
Lead 1	Class C	0'	8,500'	1007	2.46	11.9	50	14.05	2476	Extender, Antifoam, Retarder, Viscosifier
Lead 2	Class C	8,500'	18,838'	1728	1.85	13.2	35	9.87	3197	Extender, Antifoam, Retarder, Viscosifier
Tail	Acid Sol Class H	18,838'	19,838'	115	2.19	15	10	9.54	252	Extender, Antifoam, Retarder, Viscosifier

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 solid body type centralizer on every joint in the lateral, then every other joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing and surface.

6. **MUD PROGRAM**

From	To	Type	Weight	Viscosity	Filtrate	Notes
0'	800'	Fresh water mud	8.3 - 9.0	28-30	N/C	
800'	4,910'	Brine/OBM	8.3 - 10	28-31	15-25	
4,910'	19,838'	OBM	8.3 - 10	10-15	15-25	Due to wellbore stability, the mud program may exceed the MW windo w needed to maintain overbalance to pore pressure

A closed system will be used 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. And transportating of E&P waste will follow EPA regulations and accompanying manifests.

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
Mudlogs	2 man mudlog	Surface casing shoe through prod hole TD	While drilling or circulating
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling

c. Conventional whole core samples are not planned.
d. A directional survey will be run.

8. **ABNORMAL PRESSURES AND HYDROGEN SULFIDE**

a. No abnormal pressure or temperatures are expected. Estimated BHP is: 4,429 psi
b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

H_2S Preparedness and Contingency Plan Summary

Chevron

Training

MCBU Drilling and Completions H_2S training requirements are intended to define the minimum level of training required for employees, contractors and visitors to enter or perform work at MCBU Drilling and Completions locations that have known concentrations of H_2S.

Awareness Level

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H_2S, who are not required to perform work in H_2S areas, will be provided with an awareness level of H_2S training prior to entering any H_2S areas. At a minimum, awareness level training will include:

1. Physical and chemical properties of H_2S
2. Health hazards of H_2S
3. Personal protective equipment
4. Information regarding potential sources of H_2S
5. Alarms and emergency evacuation procedures

Awareness level training will be developed and conducted by personnel who are qualified either by specific training, educational experience and/or work-related background.

Advanced Level H_2S Training

Employees and contractors required to work in areas that may contain H_2S will be provided with Advanced Level H_2S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H_2S training will include:

1. H_2S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H_2S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H_2S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H_2S environments. Note: Employees who work at sites that participate in the Chevron Respirator User program will require separate respirator training as required by the MCBU Respiratory Protection Program;
5. Basic overview of emergency rescue techniques, first aid, CPR and medical evaluation procedures. Employees who may be required to perform "standby" duties are required to receive additional first aid and CPR training, which is not covered in the Advanced Level H_2S training;
6. Proficiency examination covering all course material.

Advanced H_2S training courses will be instructed by personnel who have successfully completed an appropriate H_2S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.

H_2S Preparedness and Contingency Plan Summary

H_2S Training Certification

All employees and visitors will be issued an H_2S training certification card (or certificate) upon successful completion of the appropriate H_2S training course. Personnel working in an H_2S environment will carry a current H_2S training certification card as proof of having received the proper training on their person at all times.

Briefing Area

A minimum of two briefing areas will be established in locations that at least one area will be up-wind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

H_2S Equipment

Respiratory Protection

a) Six 30 minute SCBAs – 2 at each briefing area and 2 in the Safety Trailer.

b) Eight 5 minute EBAs – 5 in the dog house at the rig floor, 1 at the accumulator, 1 at the shale shakers and 1 at the mud pits.

Visual Warning System

a) One color code sign, displaying all possible conditions, will be placed at the entrance to the location with a flag displaying the current condition.

b) Two windsocks will be on location, one on the dog house and one on the Drill Site Manager's Trailer.

H_2S Detection and Monitoring System

a) H_2S monitoring system (sensor head, warning light and siren) placed throughout rig.

- Drilling Rig Locations: at a minimum, in the area of the Shale shaker, rig floor, and bell nipple.
- Workover Rig Locations: at a minimum, in the area of the Cellar, rig floor and circulating tanks or shale shaker.

Well Control Equipment

a) Flare Line 150' from wellhead with igniter.

b) Choke manifold with a remotely operated choke.

c) *Mud / gas separator*

Mud Program

In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

1. Use of a degasser
2. Use of a zinc based mud treatment
3. Increasing mud weight

Public Safety - Emergency Assistance

Agency	Telephone Number
Eddy County Sheriff's Department	575-887-7551
Carlsbad Fire Department	575-885-3125
Carlsbad Medical Center	575-887-4100
Eddy County Emergency Management	575-885-3581
Poison Control Center	800-222-1222

Schlumberger

Chevron

Chevron DL 4 33 Loch Ness Fed Com P1 4H Rev1 kFc 25Apr19 Proposal
Geodetic Report
(Def Plan)

Report Date:	April 24, 2019 - 02:07 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Chevron	**Vertical Section Azimuth:**	179.540 ° (Grid North)
Field:	NM Lea County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Chevron DL Loch Ness Fed Com P1 / 4H	**TVD Reference Datum:**	RKB = 28ft
Well:	DL 4 33 Loch Ness Fed Com P1 4H	**TVD Reference Elevation:**	3662.000 ft above
Borehole:	DL 4 33 Loch Ness Fed Com P1 4H	**Seabed / Ground Elevation:**	3634.000 ft above
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.685 °
Survey Name:	Chevron DL 4 33 Loch Ness Fed Com P1 4H Rev1 kFc 25Apr19	**Total Gravity Field Strength:**	998.4663mgn (9.80665 Based)
Survey Date:	March 30, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	117.220 ° / 11336.725 ft / 6.442 / 1.191	**Total Magnetic Field Strength:**	48078.297 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.210 °
Location Lat / Long:	N 32° 24' 50.96872", W 103° 34' 21.92122"	**Declination Date:**	March 30, 2019
Location Grid N/E Y/X:	N 515220.000 ftUS, E 734712.000 ftUS	**Magnetic Declination Model:**	HDGM 2019
CRS Grid Convergence Angle:	0.4077 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997218	**Grid Convergence Used:**	0.4077 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.2774 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	100.00	0.00	254.98	100.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	200.00	0.00	254.98	200.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	300.00	0.00	254.98	300.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	400.00	0.00	254.98	400.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	500.00	0.00	254.98	500.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	600.00	0.00	254.98	600.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	700.00	0.00	254.98	700.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
13 3/8" Casing	800.00	0.00	254.98	800.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	900.00	0.00	254.98	900.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	1000.00	0.00	254.98	1000.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
	1100.00	0.00	254.98	1100.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
Build 1.5°/100ft	1200.00	0.00	254.98	1200.00	0.00	0.00	0.00	0.00	515220.00	734712.00	N 32 24 50.97	W 103 34 21.92
Rustler (RSLR)	*1260.00*	*0.90*	*254.98*	*1260.00*	*0.12*	*-0.12*	*-0.46*	*1.50*	*515219.88*	*734711.54*	*N 32 24 50.97*	*W 103 34 21.93*
	1300.00	1.50	254.98	1299.99	0.33	-0.34	-1.28	1.50	515219.66	734710.74	N 32 24 50.97	W 103 34 21.94
	1400.00	3.00	254.98	1399.91	1.32	-1.38	-5.08	1.50	515218.64	734706.94	N 32 24 50.96	W 103 34 21.98
	1500.00	4.50	254.98	1499.69	2.96	-3.05	-11.37	1.50	515216.95	734700.63	N 32 24 50.94	W 103 34 22.05
	1600.00	6.00	254.98	1599.27	5.26	-5.42	-20.21	1.50	515214.58	734691.79	N 32 24 50.92	W 103 34 22.16
	1700.00	7.50	254.98	1698.57	8.22	-8.47	-31.58	1.50	515211.53	734680.44	N 32 24 50.89	W 103 34 22.29
	1800.00	9.00	254.98	1797.54	11.82	-12.19	-45.42	1.50	515207.81	734666.58	N 32 24 50.85	W 103 34 22.45
Hold	1833.31	9.50	254.98	1830.42	13.17	-13.58	-50.59	1.50	515206.43	734661.41	N 32 24 50.84	W 103 34 22.51
	1900.00	9.50	254.98	1896.19	15.94	-16.43	-61.22	0.00	515203.57	734650.78	N 32 24 50.81	W 103 34 22.64
	2000.00	9.50	254.98	1994.82	20.08	-20.70	-77.16	0.00	515199.30	734634.84	N 32 24 50.77	W 103 34 22.82
	2100.00	9.50	254.98	2093.45	24.23	-24.98	-93.10	0.00	515195.02	734618.90	N 32 24 50.73	W 103 34 23.01
	2200.00	9.50	254.98	2192.07	28.38	-29.26	-109.04	0.00	515190.74	734602.96	N 32 24 50.69	W 103 34 23.20
	2300.00	9.50	254.98	2290.70	32.53	-33.54	-124.98	0.00	515186.46	734587.02	N 32 24 50.65	W 103 34 23.38
	2400.00	9.50	254.98	2389.33	36.68	-37.81	-140.92	0.00	515182.19	734571.08	N 32 24 50.60	W 103 34 23.57
	2500.00	9.50	254.98	2487.96	40.83	-42.09	-156.86	0.00	515177.91	734555.14	N 32 24 50.56	W 103 34 23.75
	2600.00	9.50	254.98	2586.59	44.98	-46.37	-172.80	0.00	515173.63	734539.20	N 32 24 50.52	W 103 34 23.94
	2700.00	9.50	254.98	2685.22	49.13	-50.65	-188.75	0.00	515169.36	734523.26	N 32 24 50.48	W 103 34 24.13
	2800.00	9.50	254.98	2783.85	53.28	-54.92	-204.69	0.00	515165.08	734507.32	N 32 24 50.44	W 103 34 24.31
	2900.00	9.50	254.98	2882.47	57.43	-59.20	-220.63	0.00	515160.80	734491.38	N 32 24 50.40	W 103 34 24.50
	3000.00	9.50	254.98	2981.10	61.58	-63.48	-236.57	0.00	515156.53	734475.44	N 32 24 50.36	W 103 34 24.69
	3100.00	9.50	254.98	3079.73	65.72	-67.75	-252.51	0.00	515152.25	734459.50	N 32 24 50.32	W 103 34 24.87
	3200.00	9.50	254.98	3178.36	69.87	-72.03	-268.45	0.00	515147.97	734443.56	N 32 24 50.27	W 103 34 25.06
	3300.00	9.50	254.98	3276.99	74.02	-76.31	-284.39	0.00	515143.69	734427.62	N 32 24 50.23	W 103 34 25.24
	3400.00	9.50	254.98	3375.62	78.17	-80.59	-300.33	0.00	515139.42	734411.68	N 32 24 50.19	W 103 34 25.43
	3500.00	9.50	254.98	3474.25	82.32	-84.86	-316.27	0.00	515135.14	734395.74	N 32 24 50.15	W 103 34 25.62
Castile (CSTL)	*3566.67*	*9.50*	*254.98*	*3540.00*	*85.09*	*-87.71*	*-326.90*	*0.00*	*515132.29*	*734385.11*	*N 32 24 50.12*	*W 103 34 25.74*
	3600.00	9.50	254.98	3572.87	86.47	-89.14	-332.21	0.00	515130.86	734379.80	N 32 24 50.11	W 103 34 25.80
	3700.00	9.50	254.98	3671.50	90.62	-93.42	-348.15	0.00	515126.59	734363.86	N 32 24 50.07	W 103 34 25.99
	3800.00	9.50	254.98	3770.13	94.77	-97.69	-364.09	0.00	515122.31	734347.92	N 32 24 50.03	W 103 34 26.18
	3900.00	9.50	254.98	3868.76	98.92	-101.97	-380.03	0.00	515118.03	734331.98	N 32 24 49.99	W 103 34 26.36
	4000.00	9.50	254.98	3967.39	103.07	-106.25	-395.97	0.00	515113.75	734316.04	N 32 24 49.95	W 103 34 26.55
	4100.00	9.50	254.98	4066.02	107.22	-110.53	-411.91	0.00	515109.48	734300.10	N 32 24 49.90	W 103 34 26.74
	4200.00	9.50	254.98	4164.65	111.36	-114.80	-427.85	0.00	515105.20	734284.16	N 32 24 49.86	W 103 34 26.92
	4300.00	9.50	254.98	4263.28	115.51	-119.08	-443.79	0.00	515100.92	734268.22	N 32 24 49.82	W 103 34 27.11
	4400.00	9.50	254.98	4361.90	119.66	-123.36	-459.73	0.00	515096.65	734252.28	N 32 24 49.78	W 103 34 27.29
	4500.00	9.50	254.98	4460.53	123.81	-127.64	-475.67	0.00	515092.37	734236.34	N 32 24 49.74	W 103 34 27.48
	4600.00	9.50	254.98	4559.16	127.96	-131.91	-491.61	0.00	515088.09	734220.40	N 32 24 49.70	W 103 34 27.67
	4700.00	9.50	254.98	4657.79	132.11	-136.19	-507.55	0.00	515083.81	734204.46	N 32 24 49.66	W 103 34 27.85
	4800.00	9.50	254.98	4756.42	136.26	-140.47	-523.49	0.00	515079.54	734188.52	N 32 24 49.62	W 103 34 28.04
	4900.00	9.50	254.98	4855.05	140.41	-144.74	-539.43	0.00	515075.26	734172.58	N 32 24 49.57	W 103 34 28.23
9 5/8" Casing	*4910.09*	*9.50*	*254.98*	*4865.00*	*140.83*	*-145.18*	*-541.04*	*0.00*	*515074.83*	*734170.97*	*N 32 24 49.57*	*W 103 34 28.24*
	5000.00	9.50	254.98	4953.68	144.56	-149.02	-555.37	0.00	515070.98	734156.84	N 32 24 49.53	W 103 34 28.41
Bell Canyon (BLCN)	*5038.83*	*9.50*	*254.98*	*4990.00*	*146.09*	*-150.60*	*-561.24*	*0.00*	*515069.41*	*734150.77*	*N 32 24 49.52*	*W 103 34 28.48*
	5100.00	9.50	254.98	5052.30	148.71	-153.30	-571.31	0.00	515066.71	734140.70	N 32 24 49.49	W 103 34 28.60
	5200.00	9.50	254.98	5150.93	152.86	-157.58	-587.25	0.00	515062.43	734124.76	N 32 24 49.45	W 103 34 28.78
	5300.00	9.50	254.98	5249.56	157.00	-161.85	-603.19	0.00	515058.15	734108.82	N 32 24 49.41	W 103 34 28.97
	5400.00	9.50	254.98	5348.19	161.15	-166.13	-619.14	0.00	515053.88	734092.88	N 32 24 49.37	W 103 34 29.16
	5500.00	9.50	254.98	5446.82	165.30	-170.41	-635.08	0.00	515049.60	734078.94	N 32 24 49.33	W 103 34 29.34
	5600.00	9.50	254.98	5545.45	169.45	-174.68	-651.02	0.00	515045.32	734061.00	N 32 24 49.29	W 103 34 29.53
	5700.00	9.50	254.98	5644.08	173.60	-178.96	-666.96	0.00	515041.04	734045.06	N 32 24 49.24	W 103 34 29.72
	5800.00	9.50	254.98	5742.71	177.75	-183.24	-682.90	0.00	515036.77	734029.12	N 32 24 49.20	W 103 34 29.90
Cherry Canyon (CRCN)	*5847.95*	*9.50*	*254.98*	*5790.00*	*179.74*	*-185.29*	*-690.54*	*0.00*	*515034.72*	*734021.48*	*N 32 24 49.18*	*W 103 34 29.99*
	5900.00	9.50	254.98	5841.33	181.90	-187.52	-698.84	0.00	515032.49	734013.18	N 32 24 49.16	W 103 34 30.09
	6000.00	9.50	254.98	5939.96	186.05	-191.79	-714.78	0.00	515028.21	733997.24	N 32 24 49.12	W 103 34 30.27
	6100.00	9.50	254.98	6038.59	190.20	-196.07	-730.72	0.00	515023.94	733981.30	N 32 24 49.08	W 103 34 30.46
	6200.00	9.50	254.98	6137.22	194.35	-200.35	-746.66	0.00	515019.66	733965.36	N 32 24 49.04	W 103 34 30.65
Drop 1.5°/100ft	6290.65	9.50	254.98	6226.62	198.11	-204.22	-761.11	0.00	515015.78	733950.91	N 32 24 49.00	W 103 34 30.82
	6300.00	9.36	254.98	6235.85	198.49	-204.62	-762.59	1.50	515015.38	733949.44	N 32 24 49.00	W 103 34 30.83
	6400.00	7.86	254.98	6334.72	202.26	-208.50	-777.05	1.50	515011.50	733934.98	N 32 24 48.96	W 103 34 31.00
	6500.00	6.36	254.98	6433.95	205.37	-211.71	-789.00	1.50	515008.30	733923.02	N 32 24 48.93	W 103 34 31.14
	6600.00	4.86	254.98	6533.47	207.82	-214.24	-798.44	1.50	515005.76	733913.58	N 32 24 48.90	W 103 34 31.25
	6700.00	3.36	254.98	6633.21	209.63	-216.10	-805.36	1.50	515003.91	733908.66	N 32 24 48.89	W 103 34 31.33
	6800.00	1.86	254.98	6733.10	210.77	-217.28	-809.76	1.50	515002.73	733902.27	N 32 24 48.88	W 103 34 31.38
	6900.00	0.36	254.98	6833.08	211.26	-217.78	-811.63	1.50	515002.23	733900.40	N 32 24 48.87	W 103 34 31.41
Hold Vertical	6923.98	0.00	254.98	6857.04	211.28	-217.80	-811.70	1.50	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7000.00	0.00	254.98	6933.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
Brushy Canyon (BCN)	*7091.92*	*0.00*	*254.98*	*7025.00*	*211.28*	*-217.80*	*-811.70*	*0.00*	*515002.21*	*733900.32*	*N 32 24 48.87*	*W 103 34 31.41*
	7100.00	0.00	254.98	7033.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7200.00	0.00	254.98	7133.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7300.00	0.00	254.98	7233.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7400.00	0.00	254.98	7333.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7500.00	0.00	254.98	7433.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7600.00	0.00	254.98	7533.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7700.00	0.00	254.98	7633.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7800.00	0.00	254.98	7733.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	7900.00	0.00	254.98	7833.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8000.00	0.00	254.98	7933.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8100.00	0.00	254.98	8033.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8200.00	0.00	254.98	8133.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8300.00	0.00	254.98	8233.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8400.00	0.00	254.98	8333.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	8500.00	0.00	254.98	8433.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8600.00	0.00	254.98	8533.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8700.00	0.00	254.98	8633.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	8800.00	0.00	254.98	8733.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
Bone Spring (BSGL)	*8886.92*	*0.00*	*254.98*	*8820.00*	*211.28*	*-217.80*	*-811.70*	*0.00*	*515002.21*	*733900.32*	*N 32 24 48.87*	*W 103 34 31.41*
	8900.00	0.00	254.98	8833.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
	9000.00	0.00	254.98	8933.08	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
KOP, Build 10°/100ft	9014.98	0.00	254.98	8948.04	211.28	-217.80	-811.70	0.00	515002.21	733900.32	N 32 24 48.87	W 103 34 31.41
Upper Avalon (AVN)	*9031.92*	*1.70*	*351.62*	*8965.00*	*211.03*	*-217.55*	*-811.74*	*10.00*	*515002.45*	*733900.29*	*N 32 24 48.87*	*W 103 34 31.41*
	9100.00	8.50	351.62	9032.77	205.04	-211.57	-812.62	10.00	515008.44	733899.41	N 32 24 48.93	W 103 34 31.42
	9200.00	18.50	351.62	9129.88	181.94	-188.50	-816.02	10.00	515031.51	733896.01	N 32 24 49.16	W 103 34 31.46
FTP Cross	*9255.00*	*24.00*	*351.62*	*9181.12*	*162.20*	*-168.78*	*-818.92*	*10.00*	*515051.23*	*733893.10*	*N 32 24 49.36*	*W 103 34 31.49*
	9300.00	28.50	351.62	9221.47	142.49	-149.09	-821.82	10.00	515070.91	733890.20	N 32 24 49.55	W 103 34 31.52
	9400.00	38.50	351.62	9304.75	87.88	-94.55	-829.86	10.00	515125.45	733882.17	N 32 24 50.09	W 103 34 31.61
	9500.00	48.50	351.62	9377.19	19.79	-26.53	-838.88	10.00	515193.47	733872.15	N 32 24 50.77	W 103 34 31.72
	9600.00	58.50	351.62	9436.59	-59.73	52.90	-851.58	10.00	515272.90	733860.45	N 32 24 51.55	W 103 34 31.85
	9700.00	68.50	351.62	9481.14	-148.27	141.33	-864.60	10.00	515361.32	733847.42	N 32 24 52.43	W 103 34 31.99
	9800.00	78.50	351.62	9509.50	-243.11	236.07	-878.56	10.00	515456.08	733833.47	N 32 24 53.37	W 103 34 32.15
Upper Avalon Target 1	*9881.14*	*86.62*	*351.62*	*9520.00*	*-322.74*	*315.60*	*-890.28*	*10.00*	*515535.59*	*733821.75*	*N 32 24 54.15*	*W 103 34 32.28*
	9900.00	88.50	351.62	9520.80	-341.40	334.24	-893.02	10.00	515554.23	733819.00	N 32 24 54.34	W 103 34 32.31
Landing Point	9914.98	90.00	351.62	9521.00	-356.21	349.04	-895.20	10.00	515569.03	733816.82	N 32 24 54.49	W 103 34 32.33
	10000.00	90.00	351.62	9521.00	-440.44	433.17	-907.60	0.00	515653.16	733804.43	N 32 24 55.32	W 103 34 32.47
	10100.00	90.00	351.62	9521.00	-539.49	532.10	-922.17	0.00	515752.09	733789.86	N 32 24 56.30	W 103 34 32.63
	10200.00	90.00	351.62	9521.00	-638.54	631.04	-936.75	0.00	515851.02	733775.28	N 32 24 57.28	W 103 34 32.80
Turn 2°/100ft	10218.68	90.00	351.62	9521.00	-655.04	647.52	-939.17	0.00	515867.50	733772.85	N 32 24 57.44	W 103 34 32.82
	10300.00	90.00	353.29	9521.00	-737.74	730.13	-950.12	2.00	515950.11	733761.91	N 32 24 58.26	W 103 34 32.94
	10400.00	90.00	355.29	9521.00	-837.31	829.63	-960.07	2.00	516049.61	733751.96	N 32 24 59.25	W 103 34 33.05
	10500.00	90.00	357.29	9521.00	-937.15	929.42	-966.55	2.00	516149.39	733745.48	N 32 25 0.23	W 103 34 33.12
	10600.00	90.00	359.29	9521.00	-1037.12	1029.37	-969.54	2.00	516249.34	733742.49	N 32 25 1.22	W 103 34 33.15
Hold	10616.67	90.00	359.62	9521.00	-1053.79	1046.04	-969.70	2.00	516266.01	733742.33	N 32 25 1.39	W 103 34 33.15
	10700.00	90.00	359.62	9521.00	-1137.12	1129.36	-970.25	0.00	516349.33	733741.78	N 32 25 2.21	W 103 34 33.15
	10800.00	90.00	359.62	9521.00	-1237.12	1229.36	-970.91	0.00	516449.32	733741.11	N 32 25 3.20	W 103 34 33.14
	10900.00	90.00	359.62	9521.00	-1337.12	1329.36	-971.58	0.00	516549.32	733740.45	N 32 25 4.19	W 103 34 33.14
	11000.00	90.00	359.62	9521.00	-1437.12	1429.36	-972.24	0.00	516649.31	733739.78	N 32 25 5.18	W 103 34 33.14
	11100.00	90.00	359.62	9521.00	-1537.12	1529.35	-972.90	0.00	516749.31	733739.12	N 32 25 6.17	W 103 34 33.14
	11200.00	90.00	359.62	9521.00	-1637.12	1629.35	-973.57	0.00	516849.30	733738.46	N 32 25 7.16	W 103 34 33.14
	11300.00	90.00	359.62	9521.00	-1737.12	1729.35	-974.23	0.00	516949.30	733737.80	N 32 25 8.15	W 103 34 33.14
	11400.00	90.00	359.62	9521.00	-1837.12	1829.35	-974.89	0.00	517049.29	733737.14	N 32 25 9.14	W 103 34 33.14
	11500.00	90.00	359.62	9521.00	-1937.12	1929.35	-975.56	0.00	517149.29	733736.47	N 32 25 10.13	W 103 34 33.14
	11600.00	90.00	359.62	9521.00	-2037.12	2029.34	-976.22	0.00	517249.28	733735.81	N 32 25 11.12	W 103 34 33.14
	11700.00	90.00	359.62	9521.00	-2137.12	2129.34	-976.88	0.00	517349.28	733735.15	N 32 25 12.11	W 103 34 33.14
	11800.00	90.00	359.62	9521.00	-2237.12	2229.34	-977.55	0.00	517449.27	733734.48	N 32 25 13.10	W 103 34 33.14
	11900.00	90.00	359.62	9521.00	-2337.12	2329.34	-978.21	0.00	517549.27	733733.82	N 32 25 14.09	W 103 34 33.14
	12000.00	90.00	359.62	9521.00	-2437.12	2429.34	-978.87	0.00	517649.26	733733.16	N 32 25 15.08	W 103 34 33.14
	12100.00	90.00	359.62	9521.00	-2537.12	2529.33	-979.54	0.00	517749.26	733732.49	N 32 25 16.07	W 103 34 33.14
	12200.00	90.00	359.62	9521.00	-2637.12	2629.33	-980.20	0.00	517849.25	733731.83	N 32 25 17.05	W 103 34 33.14
	12300.00	90.00	359.62	9521.00	-2737.12	2729.33	-980.86	0.00	517949.25	733731.17	N 32 25 18.04	W 103 34 33.14
	12400.00	90.00	359.62	9521.00	-2837.12	2829.33	-981.53	0.00	518049.24	733730.50	N 32 25 19.03	W 103 34 33.14
	12500.00	90.00	359.62	9521.00	-2937.12	2929.32	-982.19	0.00	518149.24	733729.84	N 32 25 20.02	W 103 34 33.14
	12600.00	90.00	359.62	9521.00	-3037.12	3029.32	-982.85	0.00	518249.23	733729.18	N 32 25 21.01	W 103 34 33.14
	12700.00	90.00	359.62	9521.00	-3137.12	3129.32	-983.52	0.00	518349.23	733728.51	N 32 25 22.00	W 103 34 33.13
	12800.00	90.00	359.62	9521.00	-3237.11	3229.32	-984.18	0.00	518449.22	733727.85	N 32 25 22.99	W 103 34 33.13
	12900.00	90.00	359.62	9521.00	-3337.11	3329.32	-984.84	0.00	518549.22	733727.19	N 32 25 23.98	W 103 34 33.13
	13000.00	90.00	359.62	9521.00	-3437.11	3429.31	-985.51	0.00	518649.21	733726.52	N 32 25 24.97	W 103 34 33.13
	13100.00	90.00	359.62	9521.00	-3537.11	3529.31	-986.17	0.00	518749.21	733725.86	N 32 25 25.96	W 103 34 33.13
	13200.00	90.00	359.62	9521.00	-3637.11	3629.31	-986.83	0.00	518849.20	733725.20	N 32 25 26.95	W 103 34 33.13
	13300.00	90.00	359.62	9521.00	-3737.11	3729.31	-987.49	0.00	518949.20	733724.53	N 32 25 27.94	W 103 34 33.13
	13400.00	90.00	359.62	9521.00	-3837.11	3829.30	-988.16	0.00	519049.19	733723.87	N 32 25 28.93	W 103 34 33.13
	13500.00	90.00	359.62	9521.00	-3937.11	3929.30	-988.82	0.00	519149.19	733723.21	N 32 25 29.92	W 103 34 33.13
	13600.00	90.00	359.62	9521.00	-4037.11	4029.30	-989.48	0.00	519249.18	733722.54	N 32 25 30.91	W 103 34 33.13
	13700.00	90.00	359.62	9521.00	-4137.11	4129.30	-990.15	0.00	519349.17	733721.88	N 32 25 31.90	W 103 34 33.13
	13800.00	90.00	359.62	9521.00	-4237.11	4229.30	-990.81	0.00	519449.17	733721.22	N 32 25 32.89	W 103 34 33.13
	13900.00	90.00	359.62	9521.00	-4337.11	4329.29	-991.47	0.00	519549.16	733720.56	N 32 25 33.88	W 103 34 33.13
	14000.00	90.00	359.62	9521.00	-4437.11	4429.29	-992.14	0.00	519649.16	733719.89	N 32 25 34.87	W 103 34 33.13
	14100.00	90.00	359.62	9521.00	-4537.11	4529.29	-992.80	0.00	519749.15	733719.23	N 32 25 35.86	W 103 34 33.13
	14200.00	90.00	359.62	9521.00	-4637.11	4629.29	-993.46	0.00	519849.15	733718.57	N 32 25 36.84	W 103 34 33.13
	14300.00	90.00	359.62	9521.00	-4737.11	4729.28	-994.13	0.00	519949.14	733717.90	N 32 25 37.83	W 103 34 33.13
	14400.00	90.00	359.62	9521.00	-4837.11	4829.28	-994.79	0.00	520049.14	733717.24	N 32 25 38.82	W 103 34 33.13
	14500.00	90.00	359.62	9521.00	-4937.11	4929.28	-995.45	0.00	520149.13	733716.58	N 32 25 39.81	W 103 34 33.13
MP, Turn 2°/100ft	14588.87	90.00	359.62	9521.00	-5023.98	5016.15	-996.03	0.00	520236.00	733716.00	N 32 25 40.67	W 103 34 33.12
Hold	14597.89	90.00	359.40	9521.00	-5035.00	5027.17	-996.12	2.00	520247.02	733715.91	N 32 25 40.78	W 103 34 33.12
	14600.00	90.00	359.40	9521.00	-5037.11	5029.28	-996.15	0.00	520249.13	733715.88	N 32 25 40.80	W 103 34 33.12
	14700.00	90.00	359.40	9521.00	-5137.11	5128.27	-997.19	0.00	520349.12	733714.84	N 32 25 41.79	W 103 34 33.13
	14800.00	90.00	359.40	9521.00	-5237.11	5228.27	-998.24	0.00	520449.11	733713.79	N 32 25 42.78	W 103 34 33.13
	14900.00	90.00	359.40	9521.00	-5337.11	5328.26	-999.29	0.00	520549.10	733712.74	N 32 25 43.77	W 103 34 33.14
	15000.00	90.00	359.40	9521.00	-5437.11	5428.26	-1000.34	0.00	520648.09	733711.69	N 32 25 44.76	W 103 34 33.14
	15100.00	90.00	359.40	9521.00	-5537.11	5528.25	-1001.38	0.00	520749.09	733710.64	N 32 25 45.75	W 103 34 33.14
	15200.00	90.00	359.40	9521.00	-5637.11	5628.24	-1002.43	0.00	520849.08	733709.60	N 32 25 46.74	W 103 34 33.15
	15300.00	90.00	359.40	9521.00	-5737.11	5728.24	-1003.48	0.00	520848.07	733708.55	N 32 25 47.73	W 103 34 33.15
	15400.00	90.00	359.40	9521.00	-5837.11	5828.23	-1004.53	0.00	521048.06	733707.50	N 32 25 48.72	W 103 34 33.16
	15500.00	90.00	359.40	9521.00	-5937.11	5928.23	-1005.58	0.00	521148.05	733706.45	N 32 25 49.71	W 103 34 33.16
	15600.00	90.00	359.40	9521.00	-6037.11	6028.22	-1006.62	0.00	521248.04	733705.41	N 32 25 50.70	W 103 34 33.16
	15700.00	90.00	359.40	9521.00	-6137.11	6128.22	-1007.67	0.00	521349.03	733704.36	N 32 25 51.69	W 103 34 33.17
	15800.00	90.00	359.40	9521.00	-6237.11	6228.21	-1008.72	0.00	521449.03	733703.31	N 32 25 52.68	W 103 34 33.17
	15900.00	90.00	359.40	9521.00	-6337.11	6328.21	-1009.77	0.00	521549.02	733702.26	N 32 25 53.67	W 103 34 33.18
	16000.00	90.00	359.40	9521.00	-6437.11	6428.20	-1010.81	0.00	521649.01	733701.22	N 32 25 54.66	W 103 34 33.18
	16100.00	90.00	359.40	9521.00	-6537.11	6528.20	-1011.86	0.00	521749.00	733700.17	N 32 25 55.65	W 103 34 33.18
	16200.00	90.00	359.40	9521.00	-6637.11	6628.19	-1012.91	0.00	521848.99	733699.12	N 32 25 56.64	W 103 34 33.19
	16300.00	90.00	359.40	9521.00	-6737.11	6728.18	-1013.96	0.00	521948.98	733698.07	N 32 25 57.62	W 103 34 33.19
	16400.00	90.00	359.40	9521.00	-6837.11	6828.18	-1015.01	0.00	522048.98	733697.02	N 32 25 58.61	W 103 34 33.20
	16500.00	90.00	359.40	9521.00	-6937.11	6928.17	-1016.05	0.00	522148.97	733695.98	N 32 25 59.60	W 103 34 33.20
	16600.00	90.00	359.40	9521.00	-7037.11	7028.17	-1017.10	0.00	522248.96	733694.93	N 32 26 0.59	W 103 34 33.20
	16700.00	90.00	359.40	9521.00	-7137.11	7128.16	-1018.15	0.00	522348.95	733693.88	N 32 26 1.58	W 103 34 33.21
	16800.00	90.00	359.40	9521.00	-7237.11	7228.16	-1019.20	0.00	522448.94	733692.83	N 32 26 2.57	W 103 34 33.21
	16900.00	90.00	359.40	9521.00	-7337.11	7328.15	-1020.24	0.00	522548.93	733691.79	N 32 26 3.56	W 103 34 33.22
	17000.00	90.00	359.40	9521.00	-7437.11	7428.15	-1021.29	0.00	522648.92	733690.74	N 32 26 4.55	W 103 34 33.22
	17100.00	90.00	359.40	9521.00	-7537.11	7528.14	-1022.34	0.00	522748.92	733689.69	N 32 26 5.54	W 103 34 33.22
	17200.00	90.00	359.40	9521.00	-7637.11	7628.14	-1023.39	0.00	522848.91	733688.64	N 32 26 6.53	W 103 34 33.23
	17300.00	90.00	359.40	9521.00	-7737.11	7728.13	-1024.44	0.00	522948.90	733687.59	N 32 26 7.52	W 103 34 33.23
	17400.00	90.00	359.40	9521.00	-7837.10	7828.12	-1025.48	0.00	523048.89	733686.55	N 32 26 8.51	W 103 34 33.24
	17500.00	90.00	359.40	9521.00	-7937.10	7928.12	-1026.53	0.00	523148.88	733685.50	N 32 26 9.50	W 103 34 33.24
	17600.00	90.00	359.40	9521.00	-8037.10	8028.11	-1027.58	0.00	523248.87	733684.45	N 32 26 10.49	W 103 34 33.24
	17700.00	90.00	359.40	9521.00	-8137.10	8128.11	-1028.63	0.00	523348.87	733683.40	N 32 26 11.48	W 103 34 33.25
	17800.00	90.00	359.40	9521.00	-8237.10	8228.10	-1029.67	0.00	523448.86	733682.36	N 32 26 12.47	W 103 34 33.25
	17900.00	90.00	359.40	9521.00	-8337.10	8328.10	-1030.72	0.00	523548.85	733681.31	N 32 26 13.46	W 103 34 33.26
	18000.00	90.00	359.40	9521.00	-8437.10	8428.09	-1031.77	0.00	523648.84	733680.26	N 32 26 14.45	W 103 34 33.26
	18100.00	90.00	359.40	9521.00	-8537.10	8528.09	-1032.82	0.00	523748.83	733679.21	N 32 26 15.44	W 103 34 33.26
	18200.00	90.00	359.40	9521.00	-8637.10	8628.08	-1033.87	0.00	523848.82	733678.17	N 32 26 16.43	W 103 34 33.27
	18300.00	90.00	359.40	9521.00	-8737.10	8728.07	-1034.91	0.00	523948.81	733677.12	N 32 26 17.41	W 103 34 33.27
	18400.00	90.00	359.40	9521.00	-8837.10	8828.07	-1035.96	0.00	524048.81	733676.07	N 32 26 18.40	W 103 34 33.28
	18500.00	90.00	359.40	9521.00	-8937.10	8928.06	-1037.01	0.00	524148.80	733675.02	N 32 26 19.39	W 103 34 33.28
	18600.00	90.00	359.40	9521.00	-9037.10	9028.06	-1038.06	0.00	524248.79	733673.97	N 32 26 20.38	W 103 34 33.28
	18700.00	90.00	359.40	9521.00	-9137.10	9128.05	-1039.10	0.00	524348.78	733672.93	N 32 26 21.37	W 103 34 33.29
	18800.00	90.00	359.40	9521.00	-9237.10	9228.05	-1040.15	0.00	524448.77	733671.88	N 32 26 22.36	W 103 34 33.29
	18900.00	90.00	359.40	9521.00	-9337.10	9328.04	-1041.20	0.00	524548.76	733670.83	N 32 26 23.35	W 103 34 33.29
	19000.00	90.00	359.40	9521.00	-9437.10	9428.04	-1042.25	0.00	524648.76	733669.78	N 32 26 24.34	W 103 34 33.30
	19100.00	90.00	359.40	9521.00	-9537.10	9528.03	-1043.30	0.00	524748.75	733668.74	N 32 26 25.33	W 103 34 33.30
	19200.00	90.00	359.40	9521.00	-9637.10	9628.03	-1044.34	0.00	524848.74	733667.69	N 32 26 26.32	W 103 34 33.31
	19300.00	90.00	359.40	9521.00	-9737.10	9728.02	-1045.39	0.00	524948.73	733666.64	N 32 26 27.31	W 103 34 33.31
	19400.00	90.00	359.40	9521.00	-9837.10	9828.01	-1046.44	0.00	525048.72	733665.59	N 32 26 28.30	W 103 34 33.31
	19500.00	90.00	359.40	9521.00	-9937.10	9928.01	-1047.49	0.00	525148.71	733664.54	N 32 26 29.29	W 103 34 33.32
	19600.00	90.00	359.40	9521.00	-10037.10	10028.00	-1048.53	0.00	525248.70	733663.50	N 32 26 30.28	W 103 34 33.32
	19700.00	90.00	359.40	9521.00	-10137.10	10128.00	-1049.58	0.00	525348.70	733662.45	N 32 26 31.27	W 103 34 33.33
LTP Cross	*19763.31*	*90.00*	*359.40*	*9521.00*	*-10200.40*	*10192.30*	*-1050.25*	*0.00*	*525412.00*	*733661.78*	*N 32 26 31.89*	*W 103 34 33.33*

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	19800.00	90.00	359.40	9521.00	-10237.10	10228.99	-1050.63	0.00	525448.69	733661.40	N 32 26 32.26	W 103 34 33.33
DL 4 33 Loch Ness Fed Com P1 4H - PBHL	19838.32	90.00	359.40	9521.00	-10275.41	10267.31	-1051.03	0.00	525487.00	733661.00	N 32 26 32.64	W 103 34 33.33

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 97.071% Confidence 3.0000 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	28.000	1/100.000	30.000	30.000		*B001Ma_MWD+HDGM-Depth Only*	DL 4 33 Loch Ness Fed Com P1 4H / Chevron DL 4 33 Loch Ness Fed Com P1 4H Rev1 kFc
	1	28.000	19838.316	1/100.000	30.000	30.000		B001Ma_MWD+HDGM	DL 4 33 Loch Ness Fed Com P1 4H / Chevron DL 4 33 Loch Ness

Chevron U.S.A. Inc. (CUSA)
SUNDRY ATTACHMENT: SPUDDER RIG

DATA OPERATOR NAME: Chevron U.S.A. Inc.

1. SUMMARY OF REQUEST:

CUSA respectfully requests approval for the following operations for the surface hole in the drill plan:

1. Utilize a spudder rig to pre-set surface casing for time and cost savings.

2. Description of Operations

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
    a. After drilling the surface hole section, the spudder rig will run casing and cement following all the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and then tested offline after the WOC time has been reached.
3. An abandonment cap at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on one wing-valve.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nippled up and tested on the wellhead before drilling operations resume on each well.
    a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
    b. The BLM will be contacted / notified 24 hours before the larger rig moves back on the pre-set locations.
7. CUSA will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, CUSA will secure the wellhead area by placing a guard rail around the cellar area.