

Carlsbad Field Office OCD Artesia

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM118108
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator CHEVRON USA INCORPORATED		7. If Unit or CA Agreement, Name and No.
3a. Address 6301 Deauville Blvd. Midland TX 79706	3b. Phone No. (include area code) (432)687-7866	8. Lease Name and Well No. HH SO 17 20 FED 001 6H 321649
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface SESW / 205 FSL / 1872 FWL / LAT 32.050332 / LONG -104.214863 At proposed prod. zone SWSW / 280 FSL / 330 FWL / LAT 32.021245 / LONG -104.219567		9. API Well No. 30-015-45103
10. Field and Pool, or Exploratory PURPLE SAGE / WOLFCAMP, (GAS)		11. Sec., T. R. M. or Blk. and Survey or Area SEC 8 / T26S / R27E / NMP
12. County or Parish EDDY		13. State NM
14. Distance in miles and direction from nearest town or post office* 11.5 miles	15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 feet	16. No. of acres in lease 1120
17. Spacing Unit dedicated to this well 640	18. Distance from proposed location* to nearest well, drilling, completed, 4300 feet applied for, on this lease, ft.	19. Proposed Depth 9709 feet / 20044 feet
20. BLM/BIA Bond No. on file FED: CA0329	21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3258 feet	22. Approximate date work will start* 12/28/2017
23. Estimated duration 130 days	24. Attachments	

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

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 required by the BLM.

25. Signature (Electronic Submission)	Name (Printed/Typed) Dorian K Fuentes / Ph: (432)687-7631	Date 08/17/2017
Title Permitting Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 07/06/2018
Title Supervisor Multiple Resources		

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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS
Approval Date: 07/06/2018

**NM OIL CONSERVATION
ARTESIA DISTRICT**

JUL 11 2018

RECEIVED

RVP 7-12-18.

INSTRUCTIONS

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

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

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

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

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

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

NOTICES

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

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

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

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

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

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

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

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

Additional Operator Remarks

Location of Well

1. SHL: SESW / 205 FSL / 1872 FWL / TWSP: 26S / RANGE: 27E / SECTION: 8 / LAT: 32.050332 / LONG: -104.214863 (TVD: 0 feet, MD: 0 feet)
PPP: NWNW / 330 FNL / 330 FWL / TWSP: 26S / RANGE: 27E / SECTION: 17 / LAT: 32.048874 / LONG: -104.21982 (TVD: 9000 feet, MD: 12000 feet)
BHL: SWSW / 280 FSL / 330 FWL / TWSP: 26S / RANGE: 27E / SECTION: 20 / LAT: 32.021245 / LONG: -104.219567 (TVD: 9709 feet, MD: 20044 feet)

BLM Point of Contact

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@blm.gov

Approval Date: 07/06/2018

(Form 3160-3, page 3)

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 INCORPERATED
LEASE NO.:	NMNM118108
WELL NAME & NO.:	HH SO 17 20 FED 001 6H
SURFACE HOLE FOOTAGE:	205'/S & 1872'/W
BOTTOM HOLE FOOTAGE:	280'/S & 330'/W
LOCATION:	SECTION 8, T26S, R27E , NMPM
COUNTY:	EDDY , NEW MEXICO

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

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

1. The **13-3/8** inch surface casing shall be set at approximately **450** feet (a minimum of 25 feet 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.

Operator shall filled 1/3rd of intermediate casing with fluid to maintain collapse safety factor.

- 2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is: 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. **Additional cement maybe required. Excess calculates to 14%.**
 - b. Second stage above DV tool: Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement maybe required. Excess calculates to 22%.**
- ❖ 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.
- 3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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. 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**.

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

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 integrity 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 integrity 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. **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.**
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. The results of the test shall be reported to the appropriate BLM office.
- 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. 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.
- f. 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. This test shall be performed prior to the test at full stack pressure.
- g. 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 010818



Chevron

**Eddy County, NM (NAD27 NME)
HH SO 17 20 FED 001
6H**

**OH
Plan 1 12-21-17**

Anticollision Report

21 December, 2017



Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Reference	Plan 1 12-21-17		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 u	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	3.00 Sigma	Casing Method:	Not applied

Survey Tool Program Date 12/20/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	19,915.77	Plan 1 12-21-17 (OH)	MWD+HDGM	OWSG Rev.2 MWD + HDGM

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
HH SO 17 20 FED 001						
1H - OH - Plan 1 12-21-17	3,138.70	3,151.67	82.95	49.13	2.452	CC, ES
1H - OH - Plan 1 12-21-17	19,915.77	20,115.52	611.89	230.81	1.606	SF
2H - OH - Plan 1 12-21-17	2,429.05	2,436.55	71.97	46.99	2.881	CC, ES
2H - OH - Plan 1 12-21-17	19,915.77	19,900.96	1,312.63	855.16	2.869	SF
3H - OH - Plan 1 12-21-17	2,015.87	2,018.02	73.45	52.57	3.517	CC, ES
3H - OH - Plan 1 12-21-17	2,100.00	2,101.62	74.78	53.06	3.443	SF
4H - OH - Plan 1 12-21-17	2,098.05	2,100.99	43.79	22.13	2.021	CC
4H - OH - Plan 1 12-21-17	2,100.00	2,102.92	43.80	22.11	2.020	ES, SF
5H - OH - Plan 1 12-21-17	2,503.89	2,505.89	8.52	-16.92	0.335	Level 1, CC, ES, SF
HH SO 8 P2						
13HD - OH / Job #61220 - Surveys (Patterson 815)	9,819.83	9,457.21	1.38	-97.46	0.014	Level 1, CC, ES, SF
14HD - OH / Job #61221 - Surveys (Patterson 815)	4,120.87	3,957.32	385.74	338.27	8.126	CC, ES
14HD - OH / Job #61221 - Surveys (Patterson 815)	4,200.00	4,021.99	388.15	339.57	7.990	SF
14HD - ST01 / Job #61221 - Surveys (Patterson 815)	4,120.87	3,957.32	385.74	338.27	8.126	CC, ES
14HD - ST01 / Job #61221 - Surveys (Patterson 815)	4,200.00	4,021.99	388.15	339.57	7.990	SF
21HA - OH / Job #61216 - Surveys (Patterson 815)	9,163.62	8,882.00	6.99	-85.19	0.076	Level 1, CC, ES, SF
22HA - OH / Job #61217 - Surveys (Patterson 815)	3,848.69	3,698.87	311.79	268.39	7.184	CC, ES
22HA - OH / Job #61217 - Surveys (Patterson 815)	4,000.00	3,830.41	321.30	275.80	7.062	SF
5HC - OH / Job #61218 - Surveys (Patterson 815)	4,878.48	4,585.80	227.15	166.76	3.761	CC
5HC - OH / Job #61218 - Surveys (Patterson 815)	4,900.00	4,604.65	227.39	166.65	3.744	ES, SF
6HC - OH / Job #61219 - Surveys (Patterson 815)	3,444.52	3,383.28	384.30	344.85	9.740	CC, ES
6HC - OH / Job #61219 - Surveys (Patterson 815)	3,500.00	3,422.18	386.31	346.01	9.586	SF
Screech Owl Federal Com						
#4H - WB1 - Plan #1 05-14-14	19,915.77	12,146.75	2,084.81	1,870.03	9.707	CC, ES, SF

Offset Design HH SO 17 20 FED 001 - 1H - OH - Plan 1 12-21-17

Survey Program: 0-MWD+HDGM

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor
0.00	0.00	0.00	0.00	0.00	0.00	0.00	125.00	0.00	125.00		
100.00	100.00	99.00	99.00	0.19	0.19	0.00	125.00	0.00	125.00	124.61	0.39 324.495
200.00	200.00	199.00	199.00	0.73	0.73	0.00	125.00	0.00	125.00	123.54	1.46 85.782

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 1H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
300.00	300.00	299.00	299.00	1.27	1.26	0.00	125.00	0.00	125.00	122.47	2.53	49.356	
400.00	400.00	399.00	399.00	1.81	1.80	0.00	125.00	0.00	125.00	121.39	3.61	34.645	
500.00	500.00	499.00	499.00	2.34	2.34	0.00	125.00	0.00	125.00	120.32	4.68	26.690	
600.00	600.00	599.00	599.00	2.88	2.88	0.00	125.00	0.00	125.00	119.24	5.76	21.706	
700.00	700.00	699.00	699.00	3.42	3.41	0.00	125.00	0.00	125.00	118.17	6.83	18.290	
800.00	800.00	799.00	799.00	3.96	3.95	0.00	125.00	0.00	125.00	117.09	7.91	15.803	
900.00	900.00	899.00	899.00	4.50	4.49	0.00	125.00	0.00	125.00	116.01	8.99	13.912	
1,000.00	1,000.00	999.00	999.00	5.03	5.03	0.00	125.00	0.00	125.00	114.94	10.06	12.425	
1,100.00	1,100.00	1,099.00	1,099.00	5.57	5.57	0.00	125.00	0.00	125.00	113.86	11.14	11.225	
1,200.00	1,200.00	1,199.00	1,199.00	6.11	6.10	0.00	125.00	0.00	125.00	112.79	12.21	10.236	
1,300.00	1,300.00	1,299.00	1,299.00	6.65	6.64	0.00	125.00	0.00	125.00	111.71	13.29	9.408	
1,400.00	1,400.00	1,399.00	1,399.00	7.18	7.18	0.00	125.00	0.00	125.00	110.64	14.36	8.703	
1,500.00	1,500.00	1,499.00	1,499.00	7.72	7.72	0.00	125.00	0.00	125.00	109.56	15.44	8.097	
1,600.00	1,600.00	1,599.00	1,599.00	8.26	8.25	0.00	125.00	0.00	125.00	108.49	16.51	7.570	
1,700.00	1,700.00	1,699.00	1,699.00	8.80	8.79	0.00	125.00	0.00	125.00	107.41	17.59	7.107	
1,800.00	1,800.00	1,799.00	1,799.00	9.33	9.33	0.00	125.00	0.00	125.00	106.34	18.66	6.697	
1,900.00	1,899.98	1,900.57	1,900.55	9.86	9.86	101.15	124.37	-1.65	124.72	105.00	19.71	6.326	
2,000.00	1,999.84	2,002.14	2,001.98	10.37	10.37	101.26	122.45	-6.66	123.84	103.10	20.74	5.972	
2,100.00	2,099.45	2,103.71	2,103.14	10.88	10.89	101.44	119.25	-15.02	122.37	100.60	21.77	5.621	
2,200.00	2,198.70	2,205.25	2,203.90	11.41	11.42	101.70	114.78	-26.73	120.31	97.49	22.82	5.272	
2,300.00	2,297.47	2,306.76	2,304.12	11.94	11.96	102.03	109.03	-41.75	117.66	93.78	23.89	4.926	
2,400.00	2,395.62	2,408.24	2,403.68	12.49	12.52	102.45	102.02	-60.08	114.44	89.46	24.98	4.581	
2,500.00	2,493.06	2,509.67	2,502.44	13.06	13.09	102.98	93.76	-81.68	110.65	84.54	26.11	4.238	
2,600.00	2,589.64	2,611.06	2,600.27	13.66	13.70	103.62	84.26	-106.52	106.29	79.01	27.28	3.896	
2,700.00	2,685.27	2,712.39	2,697.04	14.29	14.33	104.40	73.53	-134.56	101.39	72.89	28.50	3.557	
2,800.00	2,779.82	2,813.66	2,792.64	14.95	15.01	105.36	61.60	-165.76	95.94	66.17	29.78	3.222	
2,900.00	2,873.17	2,913.97	2,886.37	15.66	15.71	106.94	48.83	-199.13	90.30	59.21	31.09	2.904	
3,000.00	2,965.21	3,013.70	2,979.47	16.42	16.44	110.75	36.07	-232.51	85.79	53.42	32.36	2.651	
3,100.00	3,055.84	3,113.23	3,072.39	17.24	17.20	117.08	23.33	-265.83	83.20	49.74	33.47	2.486	
3,138.70	3,090.51	3,151.67	3,108.28	17.58	17.49	120.15	18.40	-278.69	82.95	49.13	33.82	2.452 CC, ES	
3,200.00	3,144.94	3,212.44	3,165.01	18.12	17.97	125.60	10.62	-299.03	83.66	49.42	34.25	2.443	
3,300.00	3,232.39	3,311.20	3,257.22	19.07	18.75	135.36	-2.02	-332.09	88.42	53.79	34.63	2.554	
3,400.00	3,318.33	3,409.49	3,348.98	20.09	19.55	144.93	-14.60	-364.99	98.00	63.14	34.86	2.811	
3,500.00	3,404.05	3,507.70	3,440.66	21.16	20.36	152.80	-27.18	-397.86	110.24	74.90	35.34	3.120	
3,600.00	3,489.76	3,605.90	3,532.35	22.27	21.18	159.04	-39.75	-430.73	124.15	88.14	36.02	3.447	
3,700.00	3,575.48	3,704.11	3,624.03	23.40	22.01	163.99	-52.32	-463.61	139.23	102.36	36.87	3.776	
3,800.00	3,661.19	3,802.32	3,715.72	24.56	22.85	167.96	-64.90	-496.48	155.13	117.27	37.86	4.097	
3,900.00	3,746.90	3,900.53	3,807.41	25.74	23.70	171.19	-77.47	-529.35	171.62	132.67	38.96	4.405	
4,000.00	3,832.62	3,998.74	3,899.09	26.94	24.55	173.85	-90.04	-562.22	188.56	148.43	40.13	4.698	
4,100.00	3,918.33	4,096.95	3,990.78	28.16	25.41	176.07	-102.61	-595.09	205.83	164.46	41.37	4.976	
4,200.00	4,004.05	4,195.16	4,082.46	29.39	26.28	177.94	-115.19	-627.97	223.35	180.70	42.65	5.237	
4,300.00	4,089.76	4,293.37	4,174.15	30.64	27.16	179.55	-127.76	-660.84	241.07	197.11	43.97	5.483	
4,400.00	4,175.48	4,391.58	4,265.84	31.89	28.04	179.07	-140.33	-693.71	258.95	213.64	45.31	5.715	
4,500.00	4,261.19	4,489.79	4,357.52	33.16	28.92	177.87	-152.91	-726.58	276.96	230.28	46.68	5.933	
4,600.00	4,346.91	4,587.99	4,449.21	34.43	29.81	176.81	-165.48	-759.45	295.07	247.00	48.07	6.138	
4,700.00	4,432.62	4,686.20	4,540.90	35.72	30.70	175.88	-178.05	-792.33	313.27	263.79	49.48	6.331	
4,800.00	4,518.33	4,784.41	4,632.58	37.01	31.59	175.04	-190.63	-825.20	331.54	280.64	50.90	6.514	
4,900.00	4,604.83	4,882.88	4,724.51	38.28	32.49	174.30	-203.23	-858.16	348.36	295.57	52.79	6.599	
5,000.00	4,693.02	4,981.86	4,816.91	39.48	33.40	173.57	-215.90	-891.29	361.81	307.15	54.65	6.620	
5,100.00	4,782.80	5,081.22	4,909.68	40.62	34.32	172.82	-228.62	-924.54	371.87	315.41	56.47	6.585	
5,200.00	4,874.07	5,175.29	4,997.61	41.68	35.18	172.09	-240.55	-955.73	378.93	320.74	58.18	6.513	
5,300.00	4,966.70	5,263.73	5,081.12	42.69	35.95	171.48	-250.96	-982.94	385.17	325.40	59.76	6.445	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 1H - OH - Plan 1 12-21-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,400.00	5,060.59	5,352.09	5,165.41	43.62	36.68	-170.93	-260.44	-1,007.72	390.94	329.70	61.25	6.383	
5,500.00	5,155.63	5,440.39	5,250.41	44.48	37.38	-170.46	-268.97	-1,030.03	396.24	333.61	62.62	6.327	
5,600.00	5,251.69	5,528.63	5,336.05	45.28	38.03	-170.05	-276.56	-1,049.88	401.03	337.14	63.89	6.277	
5,700.00	5,348.66	5,616.82	5,422.25	46.02	38.65	-169.70	-283.20	-1,067.24	405.31	340.26	65.05	6.231	
5,800.00	5,446.43	5,700.00	5,504.04	46.69	39.19	-169.43	-288.60	-1,081.34	409.10	343.04	66.06	6.193	
5,900.00	5,544.87	5,793.04	5,596.02	47.30	39.75	-169.18	-293.62	-1,094.47	412.29	345.27	67.02	6.152	
6,000.00	5,643.86	5,881.10	5,683.43	47.85	40.25	-169.00	-297.39	-1,104.33	414.97	347.15	67.83	6.118	
6,100.00	5,743.29	5,969.12	5,771.10	48.35	40.70	-168.87	-300.20	-1,111.67	417.10	348.59	68.52	6.088	
6,200.00	5,843.02	6,057.12	5,858.94	48.79	41.12	-168.79	-302.04	-1,116.49	418.68	349.60	69.09	6.060	
6,300.00	5,942.95	6,145.10	5,946.89	49.19	41.51	-168.76	-302.92	-1,118.79	419.70	350.17	69.53	6.036	
6,400.00	6,042.94	6,240.16	6,041.94	49.53	41.90	90.14	-303.00	-1,119.00	420.00	349.67	70.33	5.972	
6,500.00	6,142.94	6,340.16	6,141.94	49.88	42.29	90.14	-303.00	-1,119.00	420.00	348.76	71.24	5.896	
6,600.00	6,242.94	6,440.16	6,241.94	50.22	42.70	90.14	-303.00	-1,119.00	420.00	347.86	72.14	5.822	
6,700.00	6,342.94	6,540.16	6,341.94	50.57	43.10	90.14	-303.00	-1,119.00	420.00	346.95	73.06	5.749	
6,800.00	6,442.94	6,640.16	6,441.94	50.92	43.51	90.14	-303.00	-1,119.00	420.00	346.03	73.97	5.678	
6,900.00	6,542.94	6,740.16	6,541.94	51.28	43.92	90.14	-303.00	-1,119.00	420.00	345.11	74.89	5.608	
7,000.00	6,642.94	6,840.16	6,641.94	51.64	44.33	90.14	-303.00	-1,119.00	420.00	344.18	75.82	5.540	
7,100.00	6,742.94	6,940.16	6,741.94	52.00	44.75	90.14	-303.00	-1,119.00	420.00	343.25	76.75	5.473	
7,200.00	6,842.94	7,040.16	6,841.94	52.36	45.16	90.14	-303.00	-1,119.00	420.00	342.32	77.68	5.407	
7,300.00	6,942.94	7,140.16	6,941.94	52.73	45.59	90.14	-303.00	-1,119.00	420.00	341.39	78.61	5.343	
7,400.00	7,042.94	7,240.16	7,041.94	53.10	46.01	90.14	-303.00	-1,119.00	420.00	340.45	79.55	5.279	
7,500.00	7,142.94	7,340.16	7,141.94	53.47	46.43	90.14	-303.00	-1,119.00	420.00	339.50	80.50	5.218	
7,600.00	7,242.94	7,440.16	7,241.94	53.85	46.86	90.14	-303.00	-1,119.00	420.00	338.56	81.44	5.157	
7,700.00	7,342.94	7,540.16	7,341.94	54.23	47.29	90.14	-303.00	-1,119.00	420.00	337.61	82.39	5.098	
7,800.00	7,442.94	7,640.16	7,441.94	54.61	47.72	90.14	-303.00	-1,119.00	420.00	336.66	83.35	5.039	
7,900.00	7,542.94	7,740.16	7,541.94	54.99	48.16	90.14	-303.00	-1,119.00	420.00	335.70	84.30	4.982	
8,000.00	7,642.94	7,840.16	7,641.94	55.38	48.60	90.14	-303.00	-1,119.00	420.00	334.74	85.26	4.926	
8,100.00	7,742.94	7,940.16	7,741.94	55.77	49.03	90.14	-303.00	-1,119.00	420.00	333.78	86.22	4.871	
8,200.00	7,842.94	8,040.16	7,841.94	56.16	49.48	90.14	-303.00	-1,119.00	420.00	332.82	87.18	4.817	
8,300.00	7,942.94	8,140.16	7,941.94	56.56	49.92	90.14	-303.00	-1,119.00	420.00	331.85	88.15	4.765	
8,400.00	8,042.94	8,240.16	8,041.94	56.95	50.36	90.14	-303.00	-1,119.00	420.00	330.88	89.12	4.713	
8,500.00	8,142.94	8,340.16	8,141.94	57.35	50.81	90.14	-303.00	-1,119.00	420.00	329.91	90.09	4.662	
8,600.00	8,242.94	8,440.16	8,241.94	57.75	51.26	90.14	-303.00	-1,119.00	420.00	328.94	91.06	4.612	
8,700.00	8,342.94	8,540.16	8,341.94	58.16	51.71	90.14	-303.00	-1,119.00	420.00	327.96	92.04	4.563	
8,800.00	8,442.94	8,640.16	8,441.94	58.56	52.16	90.14	-303.00	-1,119.00	420.00	326.98	93.02	4.515	
8,900.00	8,542.94	8,740.16	8,541.94	58.97	52.61	90.14	-303.00	-1,119.00	420.00	326.00	94.00	4.468	
9,000.00	8,642.94	8,840.16	8,641.94	59.38	53.06	90.14	-303.00	-1,119.00	420.00	325.02	94.98	4.422	
9,100.00	8,742.94	8,940.16	8,741.94	59.79	53.52	90.14	-303.00	-1,119.00	420.00	324.04	95.96	4.377	
9,200.00	8,842.94	9,040.16	8,841.94	60.20	53.98	90.14	-303.00	-1,119.00	420.00	323.05	96.95	4.332	
9,300.00	8,942.94	9,140.16	8,941.94	60.62	54.44	90.14	-303.00	-1,119.00	420.00	322.06	97.94	4.288	
9,394.20	9,036.77	9,233.99	9,035.77	61.00	54.87	-90.00	-303.00	-1,119.00	419.94	321.39	98.55	4.261	
9,400.00	9,042.54	9,239.75	9,041.54	61.03	54.89	-90.05	-303.00	-1,119.00	419.94	321.34	98.60	4.259	
9,500.00	9,139.32	9,336.53	9,138.32	61.44	55.34	-93.22	-303.00	-1,119.00	420.68	321.28	99.40	4.232	
9,600.00	9,230.35	9,427.56	9,229.35	61.85	55.76	-97.82	-303.00	-1,119.00	425.11	324.64	100.47	4.231	
9,700.00	9,312.86	9,510.07	9,311.86	62.24	56.15	-102.71	-303.00	-1,119.00	437.40	335.83	101.57	4.306	
9,800.00	9,384.34	9,615.41	9,416.63	62.61	56.64	-108.99	-312.27	-1,118.86	459.23	357.00	102.23	4.492	
9,900.00	9,442.63	9,742.85	9,538.46	62.95	57.26	-115.40	-348.79	-1,118.33	487.28	385.55	101.73	4.790	
10,000.00	9,485.95	9,904.01	9,675.96	63.28	58.07	-121.92	-431.80	-1,117.10	517.47	417.64	99.82	5.184	
10,100.00	9,512.99	10,113.71	9,810.94	63.61	59.09	-127.79	-590.75	-1,114.76	543.29	445.89	97.39	5.578	
10,200.00	9,522.91	10,373.04	9,885.62	63.96	60.45	-130.92	-836.75	-1,111.14	556.10	458.49	97.61	5.697	
10,300.00	9,521.18	10,504.17	9,885.48	64.35	61.25	-131.02	-967.83	-1,109.21	556.63	457.15	99.48	5.595	
10,400.00	9,519.14	10,604.17	9,883.78	64.79	61.95	-131.05	-1,067.80	-1,107.74	556.85	455.75	101.10	5.508	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 1H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
10,500.00	9,517.10	10,704.17	9,882.09	65.30	62.71	-131.08	-1,167.78	-1,106.27	557.08	454.26	102.82	5.418	
10,600.00	9,515.06	10,804.17	9,880.39	65.87	63.55	-131.10	-1,267.75	-1,104.79	557.30	452.67	104.63	5.326	
10,700.00	9,513.02	10,904.17	9,878.69	66.50	64.45	-131.13	-1,367.73	-1,103.32	557.53	451.00	106.53	5.233	
10,800.00	9,510.98	11,004.17	9,876.99	67.20	65.42	-131.16	-1,467.70	-1,101.85	557.76	449.23	108.52	5.140	
10,900.00	9,508.93	11,104.17	9,875.30	67.97	66.44	-131.18	-1,567.67	-1,100.38	557.98	447.39	110.59	5.045	
11,000.00	9,506.89	11,204.17	9,873.60	68.81	67.53	-131.21	-1,667.65	-1,098.90	558.21	445.48	112.74	4.952	
11,100.00	9,504.85	11,304.17	9,871.90	69.71	68.67	-131.24	-1,767.62	-1,097.43	558.44	443.49	114.95	4.858	
11,200.00	9,502.81	11,404.17	9,870.21	70.68	69.86	-131.26	-1,867.60	-1,095.96	558.66	441.43	117.23	4.765	
11,300.00	9,500.77	11,504.17	9,868.51	71.71	71.11	-131.29	-1,967.57	-1,094.49	558.89	439.31	119.58	4.674	
11,400.00	9,498.73	11,604.17	9,866.81	72.80	72.39	-131.32	-2,067.55	-1,093.02	559.12	437.14	121.98	4.584	
11,500.00	9,496.69	11,704.16	9,865.11	73.95	73.72	-131.34	-2,167.52	-1,091.54	559.35	434.90	124.44	4.495	
11,600.00	9,494.65	11,804.16	9,863.42	75.16	75.10	-131.37	-2,267.49	-1,090.07	559.57	432.62	126.96	4.408	
11,700.00	9,492.61	11,904.16	9,861.72	76.41	76.51	-131.39	-2,367.47	-1,088.60	559.80	430.28	129.52	4.322	
11,800.00	9,490.57	12,004.16	9,860.02	77.72	77.96	-131.42	-2,467.44	-1,087.13	560.03	427.90	132.13	4.239	
11,900.00	9,488.53	12,104.16	9,858.33	79.07	79.44	-131.45	-2,567.42	-1,085.66	560.26	425.48	134.78	4.157	
12,000.00	9,486.49	12,204.16	9,856.63	80.46	80.95	-131.47	-2,667.39	-1,084.18	560.48	423.02	137.47	4.077	
12,100.00	9,484.44	12,304.16	9,854.93	81.89	82.49	-131.50	-2,767.36	-1,082.71	560.71	420.51	140.20	3.999	
12,200.00	9,482.40	12,404.16	9,853.23	83.36	84.06	-131.53	-2,867.34	-1,081.24	560.94	417.98	142.96	3.924	
12,300.00	9,480.36	12,504.16	9,851.54	84.86	85.66	-131.55	-2,967.31	-1,079.77	561.17	415.41	145.76	3.850	
12,400.00	9,478.32	12,604.16	9,849.84	86.40	87.28	-131.58	-3,067.29	-1,078.29	561.40	412.80	148.59	3.778	
12,500.00	9,476.28	12,704.16	9,848.14	87.96	88.93	-131.61	-3,167.26	-1,076.82	561.63	410.17	151.46	3.708	
12,600.00	9,474.24	12,804.16	9,846.45	89.55	90.60	-131.63	-3,267.24	-1,075.35	561.85	407.51	154.34	3.640	
12,700.00	9,472.20	12,904.16	9,844.75	91.17	92.29	-131.66	-3,367.21	-1,073.88	562.08	404.82	157.26	3.574	
12,800.00	9,470.16	13,004.16	9,843.05	92.82	94.00	-131.68	-3,467.18	-1,072.41	562.31	402.11	160.20	3.510	
12,900.00	9,468.12	13,104.16	9,841.35	94.48	95.73	-131.71	-3,567.16	-1,070.93	562.54	399.38	163.16	3.448	
13,000.00	9,466.08	13,204.16	9,839.66	96.17	97.47	-131.74	-3,667.13	-1,069.46	562.77	396.62	166.15	3.387	
13,100.00	9,464.04	13,304.16	9,837.96	97.88	99.24	-131.76	-3,767.11	-1,067.99	563.00	393.84	169.16	3.328	
13,200.00	9,461.99	13,404.15	9,836.26	99.61	101.01	-131.79	-3,867.08	-1,066.52	563.23	391.05	172.18	3.271	
13,300.00	9,459.95	13,504.15	9,834.57	101.36	102.81	-131.81	-3,967.05	-1,065.04	563.46	388.23	175.23	3.216	
13,400.00	9,457.91	13,604.15	9,832.87	103.12	104.62	-131.84	-4,067.03	-1,063.57	563.69	385.40	178.29	3.162	
13,500.00	9,455.87	13,704.15	9,831.17	104.90	106.44	-131.87	-4,167.00	-1,062.10	563.92	382.55	181.37	3.109	
13,600.00	9,453.83	13,804.15	9,829.47	106.70	108.27	-131.89	-4,266.98	-1,060.63	564.15	379.69	184.46	3.058	
13,700.00	9,451.79	13,904.15	9,827.78	108.50	110.12	-131.92	-4,366.95	-1,059.16	564.38	376.81	187.57	3.009	
13,800.00	9,449.75	14,004.15	9,826.08	110.33	111.97	-131.94	-4,466.93	-1,057.68	564.61	373.92	190.69	2.961	
13,900.00	9,447.71	14,104.15	9,824.38	112.16	113.84	-131.97	-4,566.90	-1,056.21	564.84	371.01	193.82	2.914	
14,000.00	9,445.67	14,204.15	9,822.69	114.01	115.72	-132.00	-4,666.87	-1,054.74	565.07	368.09	196.97	2.869	
14,100.00	9,443.63	14,304.15	9,820.99	115.87	117.61	-132.02	-4,766.85	-1,053.27	565.30	365.16	200.13	2.825	
14,200.00	9,441.59	14,404.15	9,819.29	117.74	119.50	-132.05	-4,866.82	-1,051.80	565.53	362.22	203.30	2.782	
14,300.00	9,439.54	14,504.15	9,817.59	119.62	121.41	-132.07	-4,966.80	-1,050.32	565.76	359.27	206.48	2.740	
14,400.00	9,437.50	14,604.15	9,815.90	121.51	123.33	-132.10	-5,066.77	-1,048.85	565.99	356.31	209.67	2.699	
14,500.00	9,435.46	14,704.15	9,814.20	123.41	125.25	-132.13	-5,166.74	-1,047.38	566.22	353.34	212.87	2.660	
14,600.00	9,433.42	14,804.15	9,812.50	125.32	127.18	-132.15	-5,266.72	-1,045.91	566.45	350.37	216.08	2.621	
14,700.00	9,431.38	14,904.15	9,810.81	127.24	129.12	-132.18	-5,366.69	-1,044.43	566.68	347.38	219.30	2.584	
14,800.00	9,429.34	15,004.15	9,809.11	129.16	131.06	-132.20	-5,466.67	-1,042.96	566.91	344.39	222.53	2.548	
14,900.00	9,427.30	15,104.15	9,807.41	131.09	132.98	-132.22	-5,566.64	-1,041.49	567.14	341.40	225.71	2.513	
15,000.00	9,425.26	15,204.15	9,805.71	133.03	134.89	-132.24	-5,666.62	-1,040.02	567.37	338.41	228.89	2.482	
15,100.00	9,423.22	15,304.15	9,804.01	134.98	136.81	-132.26	-5,766.60	-1,038.55	567.60	335.42	232.07	2.453	
15,200.00	9,421.18	15,404.15	9,802.31	136.93	138.72	-132.28	-5,866.58	-1,037.08	567.83	332.43	235.25	2.424	
15,300.00	9,419.14	15,504.15	9,800.61	138.89	140.63	-132.30	-5,966.56	-1,035.61	568.06	329.44	238.43	2.396	
15,400.00	9,417.10	15,604.15	9,798.91	140.85	142.54	-132.32	-6,066.54	-1,034.14	568.29	326.45	241.61	2.368	
15,500.00	9,415.06	15,704.15	9,797.21	142.82	144.46	-132.34	-6,166.52	-1,032.67	568.52	323.46	244.79	2.342	
15,600.00	9,413.02	15,804.15	9,795.51	144.80	146.37	-132.36	-6,266.50	-1,031.20	568.75	320.47	247.97	2.316	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 1H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (")	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,700.00	9,422.25	15,900.10	9,812.37	146.78	148.74	-132.95	-6,362.58	-1,039.01	574.00	323.39	250.61	2.290	
15,800.00	9,421.60	16,000.09	9,813.00	148.77	150.74	-133.05	-6,462.57	-1,038.70	574.87	321.14	253.73	2.266	
15,900.00	9,420.95	16,100.08	9,813.64	150.76	152.74	-133.14	-6,562.56	-1,038.39	575.74	318.89	256.85	2.242	
16,000.00	9,420.31	16,200.07	9,814.27	152.75	154.75	-133.23	-6,662.54	-1,038.08	576.61	316.64	259.97	2.218	
16,100.00	9,419.66	16,300.06	9,814.90	154.75	156.76	-133.32	-6,762.53	-1,037.77	577.49	314.39	263.09	2.195	
16,200.00	9,419.01	16,400.06	9,815.53	156.76	158.78	-133.42	-6,862.52	-1,037.46	578.36	312.15	266.21	2.173	
16,300.00	9,418.37	16,500.05	9,816.16	158.77	160.79	-133.51	-6,962.51	-1,037.16	579.24	309.90	269.34	2.151	
16,400.00	9,417.72	16,600.04	9,816.79	160.78	162.82	-133.60	-7,062.50	-1,036.85	580.12	307.66	272.46	2.129	
16,500.00	9,417.08	16,700.03	9,817.42	162.80	164.84	-133.69	-7,162.49	-1,036.54	581.00	305.42	275.58	2.108	
16,600.00	9,416.43	16,800.02	9,818.05	164.82	166.87	-133.78	-7,262.48	-1,036.23	581.88	303.18	278.70	2.088	
16,700.00	9,415.78	16,900.01	9,818.68	166.84	168.90	-133.87	-7,362.47	-1,035.92	582.76	300.95	281.82	2.068	
16,800.00	9,415.14	17,000.01	9,819.31	168.86	170.94	-133.96	-7,462.46	-1,035.62	583.65	298.71	284.93	2.048	
16,900.00	9,414.49	17,100.00	9,819.95	170.89	172.98	-134.05	-7,562.45	-1,035.31	584.53	296.48	288.05	2.029	
17,000.00	9,413.84	17,199.99	9,820.58	172.93	175.02	-134.14	-7,662.44	-1,035.00	585.42	294.25	291.17	2.011	
17,100.00	9,413.20	17,299.98	9,821.21	174.96	177.06	-134.23	-7,762.43	-1,034.69	586.31	292.02	294.28	1.992	
17,200.00	9,412.55	17,399.97	9,821.84	177.00	179.11	-134.32	-7,862.42	-1,034.38	587.20	289.80	297.40	1.974	
17,300.00	9,411.91	17,499.97	9,822.47	179.04	181.16	-134.41	-7,962.41	-1,034.07	588.09	287.58	300.51	1.957	
17,400.00	9,411.26	17,599.96	9,823.10	181.09	183.21	-134.50	-8,062.40	-1,033.77	588.98	285.36	303.62	1.940	
17,500.00	9,410.61	17,699.95	9,823.73	183.13	185.26	-134.59	-8,162.39	-1,033.46	589.88	283.15	306.72	1.923	
17,600.00	9,409.97	17,799.94	9,824.36	185.18	187.32	-134.68	-8,262.37	-1,033.15	590.77	280.94	309.83	1.907	
17,700.00	9,409.32	17,899.93	9,824.99	187.24	189.37	-134.77	-8,362.36	-1,032.84	591.67	278.73	312.94	1.891	
17,800.00	9,408.67	17,999.92	9,825.62	189.29	191.44	-134.85	-8,462.35	-1,032.53	592.57	276.53	316.04	1.875	
17,900.00	9,408.03	18,099.92	9,826.26	191.35	193.50	-134.94	-8,562.34	-1,032.23	593.47	274.33	319.14	1.860	
18,000.00	9,407.38	18,199.91	9,826.89	193.40	195.56	-135.03	-8,662.33	-1,031.92	594.37	272.13	322.24	1.845	
18,100.00	9,406.73	18,299.90	9,827.52	195.47	197.63	-135.12	-8,762.32	-1,031.61	595.27	269.94	325.33	1.830	
18,200.00	9,406.09	18,399.89	9,828.15	197.53	199.70	-135.20	-8,862.31	-1,031.30	596.17	267.75	328.42	1.815	
18,300.00	9,405.44	18,499.88	9,828.78	199.59	201.77	-135.29	-8,962.30	-1,030.99	597.08	265.56	331.52	1.801	
18,400.00	9,404.80	18,599.88	9,829.41	201.66	203.84	-135.38	-9,062.29	-1,030.68	597.99	263.38	334.60	1.787	
18,500.00	9,404.15	18,699.87	9,830.04	203.73	205.91	-135.46	-9,162.28	-1,030.38	598.89	261.20	337.69	1.774	
18,600.00	9,403.50	18,799.86	9,830.67	205.80	207.99	-135.55	-9,262.27	-1,030.07	599.80	259.03	340.77	1.760	
18,700.00	9,402.86	18,899.85	9,831.30	207.87	210.07	-135.63	-9,362.26	-1,029.76	600.71	256.86	343.85	1.747	
18,800.00	9,402.21	18,999.84	9,831.93	209.94	212.15	-135.72	-9,462.25	-1,029.45	601.62	254.69	346.93	1.734	
18,900.00	9,401.56	19,099.84	9,832.56	212.02	214.23	-135.80	-9,562.24	-1,029.14	602.54	252.53	350.01	1.722	
19,000.00	9,400.92	19,199.83	9,833.20	214.10	216.31	-135.89	-9,662.23	-1,028.84	603.45	250.37	353.08	1.709	
19,100.00	9,400.27	19,299.82	9,833.83	216.18	218.39	-135.97	-9,762.22	-1,028.53	604.37	248.22	356.15	1.697	
19,200.00	9,399.63	19,399.81	9,834.46	218.26	220.47	-136.06	-9,862.20	-1,028.22	605.29	246.07	359.21	1.685	
19,300.00	9,398.98	19,499.80	9,835.09	220.34	222.56	-136.14	-9,962.19	-1,027.91	606.20	243.93	362.28	1.673	
19,400.00	9,398.33	19,599.79	9,835.72	222.42	224.65	-136.22	-10,062.18	-1,027.60	607.12	241.79	365.34	1.662	
19,500.00	9,397.69	19,699.79	9,836.35	224.50	226.74	-136.31	-10,162.17	-1,027.29	608.05	239.65	368.40	1.651	
19,600.00	9,397.04	19,799.78	9,836.98	226.59	228.83	-136.39	-10,262.16	-1,026.99	608.97	237.52	371.45	1.639	
19,700.00	9,396.39	19,899.77	9,837.61	228.68	230.92	-136.47	-10,362.15	-1,026.68	609.89	235.39	374.50	1.629	
19,800.00	9,395.75	19,999.76	9,838.24	230.77	233.01	-136.56	-10,462.14	-1,026.37	610.82	233.27	377.55	1.618	
19,900.00	9,395.10	20,099.75	9,838.87	232.86	235.10	-136.64	-10,562.13	-1,026.06	611.74	231.15	380.60	1.607	
19,915.77	9,395.00	20,115.52	9,838.97	233.19	235.43	-136.65	-10,577.90	-1,026.01	611.89	230.81	381.07	1.606 SF	

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 2H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	100.01				
100.00	100.00	99.00	99.00	0.19	0.19	0.00	100.00	0.00	100.00	99.61	0.39	259.596	
200.00	200.00	199.00	199.00	0.73	0.73	0.00	100.00	0.00	100.00	98.54	1.46	68.625	
300.00	300.00	299.00	299.00	1.27	1.26	0.00	100.00	0.00	100.00	97.47	2.53	39.485	
400.00	400.00	399.00	399.00	1.81	1.80	0.00	100.00	0.00	100.00	96.39	3.61	27.716	
500.00	500.00	499.00	499.00	2.34	2.34	0.00	100.00	0.00	100.00	95.32	4.68	21.352	
600.00	600.00	599.00	599.00	2.88	2.88	0.00	100.00	0.00	100.00	94.24	5.76	17.365	
700.00	700.00	699.00	699.00	3.42	3.41	0.00	100.00	0.00	100.00	93.17	6.83	14.632	
800.00	800.00	799.00	799.00	3.96	3.95	0.00	100.00	0.00	100.00	92.09	7.91	12.643	
900.00	900.00	899.00	899.00	4.50	4.49	0.00	100.00	0.00	100.00	91.01	8.99	11.130	
1,000.00	1,000.00	999.00	999.00	5.03	5.03	0.00	100.00	0.00	100.00	89.94	10.06	9.940	
1,100.00	1,100.00	1,099.00	1,099.00	5.57	5.57	0.00	100.00	0.00	100.00	88.86	11.14	8.980	
1,200.00	1,200.00	1,199.00	1,199.00	6.11	6.10	0.00	100.00	0.00	100.00	87.79	12.21	8.189	
1,300.00	1,300.00	1,299.00	1,299.00	6.65	6.64	0.00	100.00	0.00	100.00	86.71	13.29	7.526	
1,400.00	1,400.00	1,399.00	1,399.00	7.18	7.18	0.00	100.00	0.00	100.00	85.64	14.36	6.963	
1,500.00	1,500.00	1,499.00	1,499.00	7.72	7.72	0.00	100.00	0.00	100.00	84.56	15.44	6.478	
1,600.00	1,600.00	1,599.00	1,599.00	8.26	8.25	0.00	100.00	0.00	100.00	83.49	16.51	6.056	
1,700.00	1,700.00	1,699.00	1,699.00	8.80	8.79	0.00	100.00	0.00	100.00	82.41	17.59	5.686	
1,800.00	1,800.00	1,799.00	1,799.00	9.33	9.33	0.00	100.00	0.00	100.00	81.34	18.66	5.358	
1,900.00	1,899.98	1,901.91	1,901.89	9.86	9.86	101.55	98.51	-1.03	98.89	79.18	19.71	5.016	
2,000.00	1,999.84	2,004.74	2,004.57	10.37	10.36	102.93	93.98	-4.15	95.53	74.80	20.73	4.609	
2,100.00	2,099.45	2,107.35	2,106.76	10.88	10.88	105.43	86.44	-9.34	90.05	68.29	21.75	4.140	
2,200.00	2,198.70	2,209.37	2,207.98	11.41	11.39	109.44	75.97	-16.56	82.69	59.92	22.78	3.631	
2,300.00	2,297.47	2,308.73	2,306.37	11.94	11.91	116.03	64.58	-24.40	75.87	52.10	23.77	3.192	
2,400.00	2,395.62	2,407.83	2,404.51	12.49	12.43	125.96	53.22	-32.23	72.19	47.47	24.72	2.921	
2,429.05	2,424.00	2,436.55	2,432.95	12.66	12.58	129.37	49.93	-34.49	71.97	46.99	24.98	2.881 CC, ES	
2,500.00	2,493.06	2,506.55	2,502.27	13.06	12.95	138.28	41.91	-40.02	73.44	47.87	25.56	2.873	
2,600.00	2,589.64	2,604.77	2,599.54	13.68	13.48	150.80	30.65	-47.77	81.00	54.69	26.31	3.078	
2,700.00	2,685.27	2,702.38	2,696.19	14.29	14.01	161.46	19.46	-55.48	95.09	68.08	27.01	3.520	
2,800.00	2,779.82	2,799.25	2,792.12	14.95	14.55	169.53	8.36	-63.13	115.03	87.32	27.71	4.151	
2,900.00	2,873.17	2,895.26	2,887.19	15.66	15.08	175.31	-2.64	-70.71	139.95	111.55	28.41	4.927	
3,000.00	2,965.21	2,990.30	2,981.31	16.42	15.61	179.37	-13.54	-78.21	169.19	140.09	29.10	5.814	
3,100.00	3,055.84	3,084.25	3,074.35	17.24	16.14	-177.78	-24.30	-85.63	202.30	172.53	29.77	6.795	
3,200.00	3,144.94	3,177.00	3,166.19	18.12	16.67	-175.74	-34.93	-92.95	238.99	208.57	30.42	7.856	
3,300.00	3,232.39	3,268.43	3,256.73	19.07	17.19	-174.28	-45.41	-100.17	279.07	248.03	31.04	8.990	
3,400.00	3,318.33	3,358.62	3,346.05	20.09	17.70	-173.26	-55.75	-107.29	322.01	290.13	31.89	10.098	
3,500.00	3,404.05	3,448.63	3,435.18	21.16	18.22	-172.53	-66.06	-114.40	365.41	332.41	33.00	11.073	
3,600.00	3,489.76	3,538.64	3,524.31	22.27	18.74	-171.95	-76.38	-121.51	408.84	374.72	34.12	11.981	
3,700.00	3,575.48	3,628.64	3,613.44	23.40	19.26	-171.49	-86.70	-128.61	452.30	417.04	35.26	12.827	
3,800.00	3,661.19	3,718.65	3,702.57	24.56	19.78	-171.10	-97.01	-135.72	495.78	459.37	36.41	13.617	
3,900.00	3,746.90	3,808.66	3,791.71	25.74	20.31	-170.78	-107.33	-142.83	539.27	501.70	37.57	14.354	
4,000.00	3,832.62	3,898.67	3,880.84	26.94	20.83	-170.50	-117.64	-149.93	582.78	544.04	38.74	15.044	
4,100.00	3,918.33	3,988.67	3,969.97	28.16	21.36	-170.27	-127.96	-157.04	626.29	586.38	39.92	15.690	
4,200.00	4,004.05	4,078.68	4,059.10	29.39	21.89	-170.06	-138.27	-164.14	669.82	628.71	41.10	16.296	
4,300.00	4,089.76	4,168.69	4,148.23	30.64	22.42	-169.88	-148.59	-171.25	713.35	671.05	42.30	16.865	
4,400.00	4,175.48	4,258.70	4,237.36	31.89	22.95	-169.72	-158.91	-178.36	756.88	713.38	43.50	17.400	
4,500.00	4,261.19	4,348.70	4,326.50	33.16	23.48	-169.58	-169.22	-185.46	800.42	755.71	44.70	17.905	
4,600.00	4,346.91	4,438.71	4,415.63	34.43	24.01	-169.45	-179.54	-192.57	843.96	798.04	45.92	18.380	
4,700.00	4,432.62	4,528.72	4,504.76	35.72	24.55	-169.34	-189.85	-199.68	887.51	840.37	47.13	18.829	
4,800.00	4,518.33	4,618.73	4,593.89	37.01	25.08	-169.23	-200.17	-206.78	931.05	882.70	48.36	19.254	
4,900.00	4,604.83	4,709.38	4,683.66	38.28	25.62	-169.28	-210.56	-213.94	973.23	923.13	50.10	19.426	
5,000.00	4,693.02	4,801.40	4,774.79	39.48	26.17	-169.29	-221.10	-221.21	1,012.28	960.45	51.83	19.530	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 2H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	4,782.80	4,894.69	4,867.17	40.62	26.72	-169.26	-231.80	-228.57	1,048.16	994.64	53.52	19.584	
5,200.00	4,874.07	4,989.13	4,960.69	41.68	27.29	-169.19	-242.62	-236.03	1,080.83	1,025.68	55.16	19.586	
5,300.00	4,966.70	5,084.62	5,055.24	42.69	27.86	-169.09	-253.56	-243.57	1,110.26	1,053.52	56.74	19.569	
5,400.00	5,060.59	5,181.02	5,150.71	43.62	28.43	-168.94	-264.61	-251.18	1,136.41	1,078.15	58.25	19.507	
5,500.00	5,155.63	5,278.22	5,246.97	44.48	29.02	-168.76	-275.75	-258.85	1,159.25	1,099.54	59.71	19.415	
5,600.00	5,251.69	5,367.96	5,335.86	45.28	29.55	-168.58	-285.86	-265.82	1,178.93	1,117.89	61.04	19.313	
5,700.00	5,348.66	5,447.58	5,414.96	46.02	30.01	-168.48	-293.29	-270.94	1,196.58	1,134.36	62.22	19.232	
5,800.00	5,446.43	5,527.35	5,494.44	46.69	30.46	-168.43	-298.92	-274.81	1,212.41	1,149.12	63.29	19.155	
5,900.00	5,544.87	5,600.00	5,566.96	47.30	30.86	-168.44	-302.45	-277.25	1,226.45	1,162.22	64.23	19.096	
6,000.00	5,643.86	5,687.13	5,654.04	47.85	31.32	-168.50	-304.70	-278.79	1,238.59	1,173.47	65.12	19.019	
6,100.00	5,743.29	5,775.37	5,742.29	48.35	31.75	-168.61	-305.00	-279.00	1,248.79	1,182.88	65.91	18.948	
6,200.00	5,843.02	5,875.11	5,842.02	48.79	32.24	-168.71	-305.00	-279.00	1,255.84	1,189.19	66.65	18.843	
6,300.00	5,942.95	5,975.04	5,941.95	49.19	32.72	-168.75	-305.00	-279.00	1,259.47	1,192.16	67.31	18.712	
6,400.00	6,042.94	6,075.03	6,041.94	49.53	33.21	90.14	-305.00	-279.00	1,260.00	1,191.82	68.18	18.480	
6,500.00	6,142.94	6,175.03	6,141.94	49.88	33.69	90.14	-305.00	-279.00	1,260.00	1,190.89	69.12	18.230	
6,600.00	6,242.94	6,275.03	6,241.94	50.22	34.18	90.14	-305.00	-279.00	1,260.00	1,189.95	70.06	17.985	
6,700.00	6,342.94	6,375.03	6,341.94	50.57	34.67	90.14	-305.00	-279.00	1,260.00	1,189.00	71.00	17.746	
6,800.00	6,442.94	6,475.03	6,441.94	50.92	35.17	90.14	-305.00	-279.00	1,260.00	1,188.05	71.95	17.512	
6,900.00	6,542.94	6,575.03	6,541.94	51.28	35.66	90.14	-305.00	-279.00	1,260.00	1,187.10	72.90	17.283	
7,000.00	6,642.94	6,675.03	6,641.94	51.64	36.16	90.14	-305.00	-279.00	1,260.00	1,186.15	73.86	17.060	
7,100.00	6,742.94	6,775.03	6,741.94	52.00	36.65	90.14	-305.00	-279.00	1,260.00	1,185.19	74.82	16.841	
7,200.00	6,842.94	6,875.03	6,841.94	52.36	37.15	90.14	-305.00	-279.00	1,260.00	1,184.23	75.78	16.627	
7,300.00	6,942.94	6,975.03	6,941.94	52.73	37.65	90.14	-305.00	-279.00	1,260.00	1,183.26	76.74	16.418	
7,400.00	7,042.94	7,075.03	7,041.94	53.10	38.15	90.14	-305.00	-279.00	1,260.00	1,182.29	77.71	16.214	
7,500.00	7,142.94	7,175.03	7,141.94	53.47	38.65	90.14	-305.00	-279.00	1,260.00	1,181.32	78.68	16.014	
7,600.00	7,242.94	7,275.03	7,241.94	53.85	39.15	90.14	-305.00	-279.00	1,260.00	1,180.35	79.65	15.819	
7,700.00	7,342.94	7,375.03	7,341.94	54.23	39.65	90.14	-305.00	-279.00	1,260.00	1,179.38	80.63	15.627	
7,800.00	7,442.94	7,475.03	7,441.94	54.61	40.15	90.14	-305.00	-279.00	1,260.00	1,178.40	81.61	15.440	
7,900.00	7,542.94	7,575.03	7,541.94	54.99	40.66	90.14	-305.00	-279.00	1,260.00	1,177.42	82.59	15.257	
8,000.00	7,642.94	7,675.03	7,641.94	55.38	41.16	90.14	-305.00	-279.00	1,260.00	1,176.43	83.57	15.077	
8,100.00	7,742.94	7,775.03	7,741.94	55.77	41.67	90.14	-305.00	-279.00	1,260.00	1,175.45	84.55	14.902	
8,200.00	7,842.94	7,875.03	7,841.94	56.16	42.18	90.14	-305.00	-279.00	1,260.00	1,174.46	85.54	14.730	
8,300.00	7,942.94	7,975.03	7,941.94	56.56	42.68	90.14	-305.00	-279.00	1,260.00	1,173.47	86.53	14.562	
8,400.00	8,042.94	8,075.03	8,041.94	56.95	43.19	90.14	-305.00	-279.00	1,260.00	1,172.48	87.52	14.397	
8,500.00	8,142.94	8,175.03	8,141.94	57.35	43.70	90.14	-305.00	-279.00	1,260.00	1,171.49	88.51	14.235	
8,600.00	8,242.94	8,275.03	8,241.94	57.75	44.21	90.14	-305.00	-279.00	1,260.00	1,170.50	89.51	14.077	
8,700.00	8,342.94	8,375.03	8,341.94	58.16	44.72	90.14	-305.00	-279.00	1,260.00	1,169.50	90.50	13.922	
8,800.00	8,442.94	8,475.03	8,441.94	58.56	45.23	90.14	-305.00	-279.00	1,260.00	1,168.50	91.50	13.770	
8,900.00	8,542.94	8,575.03	8,541.94	58.97	45.74	90.14	-305.00	-279.00	1,260.00	1,167.50	92.50	13.621	
9,000.00	8,642.94	8,675.03	8,641.94	59.38	46.25	90.14	-305.00	-279.00	1,260.00	1,166.50	93.51	13.475	
9,100.00	8,742.94	8,775.03	8,741.94	59.79	46.77	90.14	-305.00	-279.00	1,260.00	1,165.49	94.51	13.332	
9,200.00	8,842.94	8,875.03	8,841.94	60.20	47.28	90.14	-305.00	-279.00	1,260.00	1,164.49	95.51	13.192	
9,300.00	8,942.94	8,975.03	8,941.94	60.62	47.79	90.14	-305.00	-279.00	1,260.00	1,163.48	96.52	13.054	
9,400.00	9,042.54	9,074.63	9,041.54	61.03	48.31	-89.37	-305.00	-279.00	1,259.90	1,162.53	97.37	12.939	
9,464.69	9,105.65	9,137.74	9,104.65	61.29	48.63	-90.00	-305.00	-279.00	1,259.82	1,161.84	97.97	12.859	
9,500.00	9,139.32	9,171.41	9,138.32	61.44	48.80	-90.46	-305.00	-279.00	1,259.86	1,161.56	98.31	12.816	
9,600.00	9,230.35	9,262.44	9,229.35	61.85	49.27	-92.05	-305.00	-279.00	1,260.88	1,161.58	99.30	12.698	
9,700.00	9,312.86	9,355.08	9,321.91	62.24	49.76	-93.99	-307.59	-278.96	1,264.26	1,163.88	100.38	12.595	
9,800.00	9,384.34	9,463.95	9,428.66	62.61	50.36	-96.12	-328.13	-278.66	1,270.08	1,168.46	101.62	12.498	
9,900.00	9,442.63	9,590.60	9,545.29	62.95	51.12	-98.34	-376.84	-277.94	1,277.83	1,174.86	102.98	12.409	
10,000.00	9,485.95	9,741.92	9,666.47	63.28	52.09	-100.61	-466.71	-276.62	1,286.51	1,182.03	104.47	12.314	
10,100.00	9,512.99	9,924.27	9,775.11	63.61	53.36	-102.71	-612.19	-274.48	1,294.36	1,188.10	106.25	12.182	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 2H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)
10,200.00	9,522.91	10,136.42	9,836.87	63.96	54.98	-104.05	-813.87	-271.51	1,299.08	1,190.51	108.57	11.965	
10,300.00	9,521.18	10,278.66	9,838.95	64.35	56.13	-104.20	-955.94	-269.41	1,299.54	1,189.05	110.50	11.761	
10,400.00	9,519.14	10,378.66	9,836.85	64.79	57.02	-104.20	-1,055.91	-267.94	1,299.53	1,187.34	112.19	11.583	
10,500.00	9,517.10	10,478.66	9,834.76	65.30	57.98	-104.20	-1,155.87	-266.47	1,299.52	1,185.50	114.02	11.398	
10,600.00	9,515.06	10,578.66	9,832.66	65.87	59.00	-104.20	-1,255.84	-265.00	1,299.50	1,183.54	115.97	11.206	
10,700.00	9,513.02	10,678.66	9,830.57	66.50	60.07	-104.19	-1,355.81	-263.52	1,299.49	1,181.45	118.04	11.009	
10,800.00	9,510.98	10,778.66	9,828.47	67.20	61.21	-104.19	-1,455.78	-262.05	1,299.48	1,179.26	120.22	10.809	
10,900.00	9,508.93	10,878.66	9,826.37	67.97	62.40	-104.19	-1,555.74	-260.58	1,299.47	1,176.96	122.51	10.607	
11,000.00	9,506.89	10,978.66	9,824.28	68.81	63.64	-104.19	-1,655.71	-259.11	1,299.45	1,174.55	124.90	10.404	
11,100.00	9,504.85	11,078.66	9,822.18	69.71	64.93	-104.18	-1,755.68	-257.63	1,299.44	1,172.05	127.39	10.201	
11,200.00	9,502.81	11,178.66	9,820.09	70.68	66.26	-104.18	-1,855.64	-256.16	1,299.43	1,169.46	129.96	9.998	
11,300.00	9,500.77	11,278.66	9,817.99	71.71	67.64	-104.18	-1,955.61	-254.69	1,299.41	1,166.79	132.63	9.798	
11,400.00	9,498.73	11,378.66	9,815.90	72.80	69.05	-104.18	-2,055.58	-253.22	1,299.40	1,164.03	135.37	9.599	
11,500.00	9,496.69	11,478.66	9,813.80	73.95	70.51	-104.17	-2,155.55	-251.74	1,299.39	1,161.21	138.18	9.403	
11,600.00	9,494.65	11,578.66	9,811.71	75.16	72.00	-104.17	-2,255.51	-250.27	1,299.38	1,158.31	141.07	9.211	
11,700.00	9,492.61	11,678.66	9,809.61	76.41	73.52	-104.17	-2,355.48	-248.80	1,299.36	1,155.34	144.02	9.022	
11,800.00	9,490.57	11,778.66	9,807.51	77.72	75.07	-104.17	-2,455.45	-247.33	1,299.35	1,152.31	147.04	8.837	
11,900.00	9,488.53	11,878.66	9,805.42	79.07	76.66	-104.16	-2,555.42	-245.86	1,299.34	1,149.23	150.11	8.656	
12,000.00	9,486.49	11,978.66	9,803.32	80.46	78.27	-104.16	-2,655.38	-244.38	1,299.32	1,146.08	153.24	8.479	
12,100.00	9,484.44	12,078.66	9,801.23	81.89	79.90	-104.16	-2,755.35	-242.91	1,299.31	1,142.89	156.42	8.307	
12,200.00	9,482.40	12,178.66	9,799.13	83.36	81.56	-104.16	-2,855.32	-241.44	1,299.30	1,139.65	159.65	8.138	
12,300.00	9,480.36	12,278.66	9,797.04	84.86	83.25	-104.16	-2,955.28	-239.97	1,299.29	1,136.36	162.92	7.975	
12,400.00	9,478.32	12,378.66	9,794.94	86.40	84.95	-104.15	-3,055.25	-238.49	1,299.27	1,133.03	166.24	7.816	
12,500.00	9,476.28	12,478.66	9,792.84	87.96	86.68	-104.15	-3,155.22	-237.02	1,299.26	1,129.66	169.60	7.661	
12,600.00	9,474.24	12,578.66	9,790.75	89.55	88.42	-104.15	-3,255.19	-235.55	1,299.25	1,126.25	173.00	7.510	
12,700.00	9,472.20	12,678.66	9,788.65	91.17	90.19	-104.15	-3,355.15	-234.08	1,299.23	1,122.80	176.43	7.364	
12,800.00	9,470.16	12,778.66	9,786.56	92.82	91.97	-104.14	-3,455.12	-232.60	1,299.22	1,119.33	179.90	7.222	
12,900.00	9,468.12	12,878.66	9,784.46	94.48	93.76	-104.14	-3,555.09	-231.13	1,299.21	1,115.81	183.39	7.084	
13,000.00	9,466.08	12,978.66	9,782.37	96.17	95.57	-104.14	-3,655.05	-229.66	1,299.20	1,112.27	186.92	6.950	
13,100.00	9,464.04	13,078.66	9,780.27	97.88	97.40	-104.14	-3,755.02	-228.19	1,299.18	1,108.70	190.48	6.821	
13,200.00	9,461.99	13,178.66	9,778.18	99.61	99.24	-104.13	-3,854.99	-226.71	1,299.17	1,105.10	194.07	6.694	
13,300.00	9,459.95	13,278.66	9,776.08	101.36	101.09	-104.13	-3,954.96	-225.24	1,299.16	1,101.48	197.68	6.572	
13,400.00	9,457.91	13,378.66	9,773.98	103.12	102.95	-104.13	-4,054.92	-223.77	1,299.14	1,097.84	201.31	6.453	
13,500.00	9,455.87	13,478.66	9,771.89	104.90	104.82	-104.13	-4,154.89	-222.30	1,299.13	1,094.17	204.97	6.338	
13,600.00	9,453.83	13,578.66	9,769.79	106.70	106.71	-104.12	-4,254.86	-220.82	1,299.12	1,090.47	208.64	6.226	
13,700.00	9,451.79	13,678.66	9,767.70	108.50	108.60	-104.12	-4,354.82	-219.35	1,299.11	1,086.76	212.34	6.118	
13,800.00	9,449.75	13,778.66	9,765.60	110.33	110.51	-104.12	-4,454.79	-217.88	1,299.09	1,083.03	216.06	6.013	
13,900.00	9,447.71	13,878.66	9,763.51	112.16	112.42	-104.12	-4,554.76	-216.41	1,299.08	1,079.28	219.80	5.910	
14,000.00	9,445.67	13,978.66	9,761.41	114.01	114.35	-104.12	-4,654.73	-214.94	1,299.07	1,075.51	223.55	5.811	
14,100.00	9,443.63	14,078.66	9,759.32	115.87	116.28	-104.11	-4,754.69	-213.46	1,299.06	1,071.73	227.33	5.715	
14,200.00	9,441.59	14,178.66	9,757.22	117.74	118.22	-104.11	-4,854.66	-211.99	1,299.04	1,067.93	231.11	5.621	
14,300.00	9,439.54	14,278.66	9,755.12	119.62	120.17	-104.11	-4,954.63	-210.52	1,299.03	1,064.11	234.92	5.530	
14,400.00	9,437.50	14,378.66	9,753.03	121.51	122.12	-104.11	-5,054.59	-209.05	1,299.02	1,060.28	238.73	5.441	
14,500.00	9,435.46	14,478.66	9,750.93	123.41	124.08	-104.10	-5,154.56	-207.57	1,299.00	1,056.44	242.56	5.355	
14,600.00	9,433.42	14,578.66	9,748.84	125.32	126.05	-104.10	-5,254.53	-206.10	1,298.99	1,052.59	246.41	5.272	
14,700.00	9,431.38	14,678.66	9,746.74	127.24	128.02	-104.10	-5,354.50	-204.63	1,298.98	1,048.72	250.26	5.190	
14,800.00	9,429.34	14,778.66	9,744.65	129.16	130.00	-104.10	-5,454.46	-203.16	1,298.97	1,044.84	254.13	5.111	
14,842.99	9,428.55	14,821.64	9,743.75	129.99	130.85	-104.09	-5,497.44	-202.52	1,299.01	1,043.15	255.86	5.077	
14,900.00	9,427.46	14,880.68	9,742.60	131.09	132.02	-104.08	-5,556.46	-201.70	1,299.03	1,040.85	258.18	5.032	
15,000.00	9,426.77	14,985.45	9,742.53	133.03	134.10	-104.11	-5,661.23	-201.15	1,299.35	1,037.15	262.19	4.956	
15,100.00	9,426.12	15,085.45	9,742.92	134.98	136.10	-104.15	-5,761.22	-200.84	1,299.60	1,033.54	266.06	4.885	
15,200.00	9,425.48	15,185.44	9,743.32	136.93	138.09	-104.20	-5,861.21	-200.53	1,299.85	1,029.92	269.93	4.816	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 2H - OH - Plan 1 12-21-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,300.00	9,424.83	15,285.44	9,743.71	138.89	140.09	-104.24	-5,961.21	-200.22	1,300.10	1,026.30	273.80	4.748	
15,400.00	9,424.18	15,385.43	9,744.11	140.85	142.10	-104.29	-6,061.20	-199.92	1,300.36	1,022.67	277.69	4.683	
15,500.00	9,423.54	15,485.43	9,744.50	142.82	144.11	-104.33	-6,161.19	-199.61	1,300.61	1,019.03	281.58	4.619	
15,600.00	9,422.89	15,585.42	9,744.90	144.80	146.12	-104.38	-6,261.19	-199.30	1,300.87	1,015.38	285.48	4.557	
15,700.00	9,422.25	15,685.42	9,745.30	146.78	148.14	-104.42	-6,361.18	-198.99	1,301.12	1,011.73	289.39	4.496	
15,800.00	9,421.60	15,785.41	9,745.69	148.77	150.16	-104.47	-6,461.17	-198.68	1,301.38	1,008.07	293.30	4.437	
15,900.00	9,420.95	15,885.40	9,746.09	150.76	152.18	-104.51	-6,561.17	-198.38	1,301.64	1,004.41	297.23	4.379	
16,000.00	9,420.31	15,985.40	9,746.48	152.75	154.21	-104.55	-6,661.16	-198.07	1,301.89	1,000.74	301.15	4.323	
16,100.00	9,419.66	16,085.39	9,746.88	154.75	156.24	-104.60	-6,761.15	-197.76	1,302.15	997.07	305.08	4.268	
16,200.00	9,419.01	16,185.39	9,747.27	156.76	158.28	-104.64	-6,861.15	-197.45	1,302.41	993.39	309.02	4.215	
16,300.00	9,418.37	16,285.38	9,747.67	158.77	160.32	-104.69	-6,961.14	-197.15	1,302.67	989.71	312.96	4.162	
16,400.00	9,417.72	16,385.38	9,748.07	160.78	162.36	-104.73	-7,061.13	-196.84	1,302.94	986.03	316.91	4.111	
16,500.00	9,417.08	16,485.37	9,748.46	162.80	164.40	-104.78	-7,161.13	-196.53	1,303.20	982.34	320.86	4.062	
16,600.00	9,416.43	16,585.37	9,748.86	164.82	166.45	-104.82	-7,261.12	-196.22	1,303.46	978.64	324.82	4.013	
16,700.00	9,415.78	16,685.36	9,749.25	166.84	168.50	-104.86	-7,361.11	-195.92	1,303.73	974.95	328.78	3.965	
16,800.00	9,415.14	16,785.36	9,749.65	168.86	170.55	-104.91	-7,461.11	-195.61	1,303.99	971.25	332.74	3.919	
16,900.00	9,414.49	16,885.35	9,750.04	170.89	172.61	-104.95	-7,561.10	-195.30	1,304.26	967.55	336.71	3.874	
17,000.00	9,413.84	16,985.34	9,750.44	172.93	174.67	-105.00	-7,661.09	-194.99	1,304.52	963.84	340.68	3.829	
17,100.00	9,413.20	17,085.34	9,750.83	174.96	176.72	-105.04	-7,761.09	-194.68	1,304.79	960.13	344.66	3.786	
17,200.00	9,412.55	17,185.33	9,751.23	177.00	178.79	-105.09	-7,861.08	-194.38	1,305.06	956.42	348.64	3.743	
17,300.00	9,411.91	17,285.33	9,751.63	179.04	180.85	-105.13	-7,961.07	-194.07	1,305.33	952.71	352.62	3.702	
17,400.00	9,411.26	17,385.32	9,752.02	181.09	182.92	-105.17	-8,061.07	-193.76	1,305.59	948.99	356.60	3.661	
17,500.00	9,410.61	17,485.32	9,752.42	183.13	184.99	-105.22	-8,161.06	-193.45	1,305.87	945.28	360.59	3.621	
17,600.00	9,409.97	17,585.31	9,752.81	185.18	187.06	-105.26	-8,261.05	-193.15	1,306.14	941.56	364.58	3.583	
17,700.00	9,409.32	17,685.31	9,753.21	187.24	189.13	-105.31	-8,361.05	-192.84	1,306.41	937.84	368.57	3.545	
17,800.00	9,408.67	17,785.30	9,753.60	189.29	191.20	-105.35	-8,461.04	-192.53	1,306.68	934.11	372.57	3.507	
17,900.00	9,408.03	17,885.30	9,754.00	191.35	193.28	-105.39	-8,561.03	-192.22	1,306.95	930.39	376.56	3.471	
18,000.00	9,407.38	17,985.29	9,754.40	193.40	195.36	-105.44	-8,661.03	-191.91	1,307.23	926.66	380.56	3.435	
18,100.00	9,406.73	18,085.28	9,754.79	195.47	197.44	-105.48	-8,761.02	-191.61	1,307.50	922.94	384.56	3.400	
18,200.00	9,406.09	18,185.28	9,755.19	197.53	199.52	-105.53	-8,861.01	-191.30	1,307.78	919.21	388.57	3.366	
18,300.00	9,405.44	18,285.27	9,755.58	199.59	201.60	-105.57	-8,961.01	-190.99	1,308.05	915.48	392.57	3.332	
18,400.00	9,404.80	18,385.27	9,755.98	201.66	203.69	-105.62	-9,061.00	-190.68	1,308.33	911.75	396.58	3.299	
18,500.00	9,404.15	18,485.26	9,756.37	203.73	205.77	-105.66	-9,160.99	-190.38	1,308.61	908.02	400.59	3.267	
18,600.00	9,403.50	18,585.26	9,756.77	205.80	207.86	-105.70	-9,260.99	-190.07	1,308.89	904.29	404.60	3.235	
18,700.00	9,402.86	18,685.25	9,757.17	207.87	209.95	-105.75	-9,360.98	-189.76	1,309.17	900.56	408.61	3.204	
18,800.00	9,402.21	18,785.25	9,757.56	209.94	212.04	-105.79	-9,460.97	-189.45	1,309.45	896.82	412.62	3.173	
18,900.00	9,401.56	18,885.24	9,757.96	212.02	214.13	-105.83	-9,560.97	-189.15	1,309.73	893.09	416.64	3.144	
19,000.00	9,400.92	18,985.24	9,758.35	214.10	216.22	-105.88	-9,660.96	-188.84	1,310.01	889.36	420.65	3.114	
19,100.00	9,400.27	19,085.23	9,758.75	216.18	218.31	-105.92	-9,760.95	-188.53	1,310.29	885.62	424.67	3.085	
19,200.00	9,399.63	19,185.23	9,759.14	218.26	220.41	-105.97	-9,860.95	-188.22	1,310.58	881.89	428.68	3.057	
19,300.00	9,398.98	19,285.22	9,759.54	220.34	222.51	-106.01	-9,960.94	-187.91	1,310.86	878.16	432.70	3.029	
19,400.00	9,398.33	19,385.21	9,759.93	222.42	224.60	-106.05	-10,060.93	-187.61	1,311.14	874.42	436.72	3.002	
19,500.00	9,397.69	19,485.21	9,760.33	224.50	226.70	-106.10	-10,160.93	-187.30	1,311.43	870.69	440.74	2.976	
19,600.00	9,397.04	19,585.20	9,760.73	226.59	228.80	-106.14	-10,260.92	-186.99	1,311.72	866.95	444.76	2.949	
19,700.00	9,396.39	19,685.20	9,761.12	228.68	230.90	-106.19	-10,360.91	-186.68	1,312.00	863.22	448.78	2.923	
19,800.00	9,395.75	19,785.19	9,761.52	230.77	233.00	-106.23	-10,460.91	-186.38	1,312.29	859.48	452.81	2.898	
19,900.00	9,395.10	19,885.19	9,761.91	232.86	235.11	-106.27	-10,560.90	-186.07	1,312.58	855.75	456.83	2.873	
19,915.77	9,395.00	19,900.96	9,761.98	233.19	235.44	-106.28	-10,576.67	-186.02	1,312.63	855.16	457.46	2.869 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 3H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.00	0.00	75.00				
100.00	100.00	100.00	100.00	0.19	0.19	0.00	75.00	0.00	75.00	74.61	0.39	193.723	
200.00	200.00	200.00	200.00	0.73	0.73	0.00	75.00	0.00	75.00	73.54	1.46	51.280	
300.00	300.00	300.00	300.00	1.27	1.27	0.00	75.00	0.00	75.00	72.46	2.54	29.551	
400.00	400.00	400.00	400.00	1.81	1.81	0.00	75.00	0.00	75.00	71.39	3.61	20.756	
500.00	500.00	500.00	500.00	2.34	2.34	0.00	75.00	0.00	75.00	70.31	4.69	15.996	
600.00	600.00	600.00	600.00	2.88	2.88	0.00	75.00	0.00	75.00	69.24	5.76	13.011	
700.00	700.00	700.00	700.00	3.42	3.42	0.00	75.00	0.00	75.00	68.16	6.84	10.965	
800.00	800.00	800.00	800.00	3.96	3.96	0.00	75.00	0.00	75.00	67.08	7.92	9.476	
900.00	900.00	900.00	900.00	4.50	4.50	0.00	75.00	0.00	75.00	66.01	8.99	8.342	
1,000.00	1,000.00	1,000.00	1,000.00	5.03	5.03	0.00	75.00	0.00	75.00	64.93	10.07	7.451	
1,100.00	1,100.00	1,100.00	1,100.00	5.57	5.57	0.00	75.00	0.00	75.00	63.86	11.14	6.732	
1,200.00	1,200.00	1,200.00	1,200.00	6.11	6.11	0.00	75.00	0.00	75.00	62.78	12.22	6.139	
1,300.00	1,300.00	1,300.00	1,300.00	6.65	6.65	0.00	75.00	0.00	75.00	61.71	13.29	5.642	
1,400.00	1,400.00	1,400.00	1,400.00	7.18	7.18	0.00	75.00	0.00	75.00	60.63	14.37	5.220	
1,500.00	1,500.00	1,500.00	1,500.00	7.72	7.72	0.00	75.00	0.00	75.00	59.56	15.44	4.857	
1,600.00	1,600.00	1,600.00	1,600.00	8.26	8.26	0.00	75.00	0.00	75.00	58.48	16.52	4.540	
1,700.00	1,700.00	1,700.00	1,700.00	8.80	8.80	0.00	75.00	0.00	75.00	57.41	17.59	4.263	
1,800.00	1,800.00	1,800.00	1,800.00	9.33	9.33	0.00	75.00	0.00	75.00	56.33	18.67	4.017	
1,900.00	1,899.98	1,901.39	1,901.36	9.86	9.86	103.59	73.99	1.48	74.41	54.69	19.71	3.774	
2,000.00	1,999.84	2,002.13	2,001.96	10.37	10.36	111.16	71.00	5.90	73.48	52.76	20.72	3.546	
2,015.87	2,015.67	2,018.02	2,017.81	10.45	10.44	112.82	70.34	6.86	73.45	52.57	20.88	3.517 CC, ES	
2,100.00	2,099.45	2,101.62	2,101.06	10.88	10.87	123.49	66.09	13.12	74.78	53.06	21.72	3.443 SF	
2,200.00	2,198.70	2,199.26	2,197.96	11.41	11.37	138.63	59.39	22.98	82.03	59.37	22.66	3.620	
2,300.00	2,297.47	2,294.50	2,292.05	11.94	11.87	153.16	51.08	35.22	98.17	74.65	23.53	4.173	
2,400.00	2,395.62	2,387.69	2,383.62	12.49	12.37	164.75	41.39	49.49	123.71	99.37	24.34	5.084	
2,500.00	2,493.06	2,480.31	2,474.54	13.06	12.89	172.72	31.46	64.11	156.28	131.17	25.11	6.224	
2,600.00	2,589.84	2,571.64	2,564.20	13.66	13.40	178.02	21.66	78.53	193.99	168.13	25.85	7.504	
2,700.00	2,685.27	2,661.59	2,652.49	14.29	13.91	-178.36	12.02	92.73	235.89	209.33	26.56	8.881	
2,800.00	2,779.82	2,750.03	2,739.30	14.95	14.43	-175.83	2.54	106.69	281.47	254.23	27.24	10.334	
2,900.00	2,873.17	2,836.85	2,824.53	15.66	14.94	-173.99	-6.77	120.40	330.41	302.54	27.87	11.854	
3,000.00	2,965.21	2,921.96	2,908.08	16.42	15.44	-172.64	-15.90	133.84	382.51	354.03	28.47	13.434	
3,100.00	3,055.84	3,005.25	2,989.83	17.24	15.94	-171.61	-24.83	146.99	437.61	408.58	29.03	15.072	
3,200.00	3,144.94	3,086.61	3,069.70	18.12	16.43	-170.81	-33.55	159.83	495.61	466.06	29.56	16.768	
3,300.00	3,232.39	3,165.95	3,147.58	19.07	16.91	-170.16	-42.06	172.36	556.41	526.37	30.04	18.521	
3,400.00	3,318.33	3,243.44	3,223.65	20.09	17.38	-169.77	-50.36	184.59	619.58	588.82	30.76	20.144	
3,500.00	3,404.05	3,320.67	3,299.46	21.16	17.86	-169.58	-58.64	196.78	683.09	651.35	31.74	21.518	
3,600.00	3,489.76	3,397.89	3,375.26	22.27	18.33	-169.42	-66.92	208.97	746.60	713.86	32.75	22.800	
3,700.00	3,575.48	3,475.11	3,451.06	23.40	18.81	-169.28	-75.20	221.16	810.12	776.36	33.76	23.995	
3,800.00	3,661.19	3,552.34	3,526.87	24.56	19.29	-169.16	-83.48	233.36	873.64	838.85	34.79	25.113	
3,900.00	3,746.90	3,629.56	3,602.67	25.74	19.78	-169.06	-91.76	245.55	937.17	901.34	35.83	26.159	
4,000.00	3,832.62	3,706.78	3,678.47	26.94	20.26	-168.97	-100.04	257.74	1,000.69	963.82	36.87	27.138	
4,100.00	3,918.33	3,784.01	3,754.28	28.16	20.75	-168.90	-108.32	269.93	1,064.21	1,026.28	37.93	28.057	
4,200.00	4,004.05	3,861.23	3,830.08	29.39	21.24	-168.83	-116.60	282.12	1,127.74	1,088.75	38.99	28.920	
4,300.00	4,089.76	3,938.45	3,905.89	30.64	21.73	-168.77	-124.88	294.31	1,191.27	1,151.20	40.07	29.732	
4,400.00	4,175.48	4,015.68	3,981.69	31.89	22.22	-168.71	-133.16	306.50	1,254.79	1,213.65	41.15	30.496	
4,500.00	4,261.19	4,092.90	4,057.49	33.16	22.71	-168.66	-141.44	318.70	1,318.32	1,276.09	42.23	31.217	
4,600.00	4,346.91	4,170.12	4,133.30	34.43	23.20	-168.62	-149.72	330.89	1,381.85	1,338.53	43.32	31.897	
4,700.00	4,432.62	4,247.34	4,209.10	35.72	23.70	-168.58	-158.00	343.08	1,445.38	1,400.96	44.42	32.540	
4,800.00	4,518.33	4,324.57	4,284.91	37.01	24.19	-168.54	-166.28	355.27	1,508.91	1,463.39	45.52	33.149	
4,900.00	4,604.83	4,402.74	4,361.64	38.28	24.69	-168.78	-174.66	367.61	1,571.26	1,524.07	47.20	33.292	
5,000.00	4,693.02	4,482.98	4,440.41	39.48	25.21	-168.99	-183.26	380.28	1,630.91	1,582.03	48.88	33.366	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 3H - OH - Plan 1 12-21-17

Survey Program: 0-MWD+HDGM

Offset Site Error: 0.00 usft
 Offset Well Error: 0.00 usft

Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	4,782.80	4,565.20	4,521.11	40.62	25.74	-169.16	-192.08	393.26	1,687.77	1,637.24	50.53	33.404		
5,200.00	4,874.07	4,649.30	4,603.67	41.68	26.29	-169.28	-201.10	406.54	1,741.78	1,689.65	52.13	33.411		
5,300.00	4,966.70	4,735.17	4,687.97	42.69	26.84	-169.36	-210.30	420.09	1,792.88	1,739.19	53.69	33.392		
5,400.00	5,060.59	4,822.72	4,773.90	43.62	27.41	-169.42	-219.69	433.91	1,841.02	1,785.81	55.20	33.350		
5,500.00	5,155.63	4,911.83	4,861.38	44.48	27.99	-169.44	-229.24	447.98	1,886.12	1,829.46	56.66	33.288		
5,600.00	5,251.69	5,002.40	4,950.28	45.28	28.58	-169.43	-238.96	462.28	1,928.16	1,870.10	58.06	33.209		
5,700.00	5,348.66	5,094.32	5,040.51	46.02	29.18	-169.39	-248.81	476.79	1,967.07	1,907.67	59.40	33.116		
5,800.00	5,446.43	5,187.47	5,131.95	46.69	29.79	-169.33	-258.80	491.50	2,002.82	1,942.15	60.68	33.008		
5,900.00	5,544.87	5,281.74	5,224.49	47.30	30.40	-169.24	-268.90	506.38	2,035.38	1,973.49	61.88	32.890		
6,000.00	5,643.86	5,414.16	5,354.60	47.85	31.26	-169.05	-282.73	526.73	2,064.47	2,001.23	63.24	32.645		
6,100.00	5,743.29	5,658.04	5,596.42	48.35	32.71	-168.77	-300.17	552.42	2,085.37	2,020.26	65.11	32.027		
6,200.00	5,843.02	5,904.94	5,843.02	48.79	33.99	-168.75	-306.00	561.00	2,095.84	2,029.02	66.81	31.368		
6,300.00	5,942.95	6,004.86	5,942.95	49.19	34.46	-168.78	-306.00	561.00	2,099.47	2,031.84	67.63	31.045		
6,400.00	6,042.94	6,104.86	6,042.94	49.53	34.93	90.11	-306.00	561.00	2,100.00	2,031.48	68.52	30.648		
6,500.00	6,142.94	6,204.86	6,142.94	49.88	35.40	90.11	-306.00	561.00	2,100.00	2,030.55	69.46	30.235		
6,600.00	6,242.94	6,304.86	6,242.94	50.22	35.87	90.11	-306.00	561.00	2,100.00	2,029.61	70.39	29.832		
6,700.00	6,342.94	6,404.86	6,342.94	50.57	36.35	90.11	-306.00	561.00	2,100.00	2,028.67	71.34	29.438		
6,800.00	6,442.94	6,504.86	6,442.94	50.92	36.82	90.11	-306.00	561.00	2,100.00	2,027.72	72.28	29.053		
6,900.00	6,542.94	6,604.86	6,542.94	51.28	37.30	90.11	-306.00	561.00	2,100.00	2,026.77	73.23	28.676		
7,000.00	6,642.94	6,704.86	6,642.94	51.64	37.78	90.11	-306.00	561.00	2,100.00	2,025.82	74.19	28.307		
7,100.00	6,742.94	6,804.86	6,742.94	52.00	38.26	90.11	-306.00	561.00	2,100.00	2,024.86	75.14	27.947		
7,200.00	6,842.94	6,904.86	6,842.94	52.36	38.75	90.11	-306.00	561.00	2,100.00	2,023.90	76.10	27.595		
7,300.00	6,942.94	7,004.86	6,942.94	52.73	39.23	90.11	-306.00	561.00	2,100.00	2,022.94	77.06	27.250		
7,400.00	7,042.94	7,104.86	7,042.94	53.10	39.72	90.11	-306.00	561.00	2,100.00	2,021.97	78.03	26.913		
7,500.00	7,142.94	7,204.86	7,142.94	53.47	40.21	90.11	-306.00	561.00	2,100.00	2,021.01	79.00	26.583		
7,600.00	7,242.94	7,304.86	7,242.94	53.85	40.70	90.11	-306.00	561.00	2,100.00	2,020.04	79.97	26.260		
7,700.00	7,342.94	7,404.86	7,342.94	54.23	41.19	90.11	-306.00	561.00	2,100.00	2,019.06	80.94	25.945		
7,800.00	7,442.94	7,504.86	7,442.94	54.61	41.68	90.11	-306.00	561.00	2,100.00	2,018.09	81.92	25.636		
7,900.00	7,542.94	7,604.86	7,542.94	54.99	42.17	90.11	-306.00	561.00	2,100.00	2,017.11	82.90	25.333		
8,000.00	7,642.94	7,704.86	7,642.94	55.38	42.66	90.11	-306.00	561.00	2,100.00	2,016.13	83.88	25.037		
8,100.00	7,742.94	7,804.86	7,742.94	55.77	43.16	90.11	-306.00	561.00	2,100.00	2,015.14	84.86	24.747		
8,200.00	7,842.94	7,904.86	7,842.94	56.16	43.65	90.11	-306.00	561.00	2,100.00	2,014.16	85.85	24.463		
8,300.00	7,942.94	8,004.86	7,942.94	56.56	44.15	90.11	-306.00	561.00	2,100.00	2,013.17	86.83	24.184		
8,400.00	8,042.94	8,104.86	8,042.94	56.95	44.65	90.11	-306.00	561.00	2,100.00	2,012.18	87.82	23.912		
8,500.00	8,142.94	8,204.86	8,142.94	57.35	45.14	90.11	-306.00	561.00	2,100.00	2,011.19	88.81	23.645		
8,600.00	8,242.94	8,304.86	8,242.94	57.75	45.64	90.11	-306.00	561.00	2,100.00	2,010.20	89.81	23.384		
8,700.00	8,342.94	8,404.86	8,342.94	58.16	46.14	90.11	-306.00	561.00	2,100.00	2,009.20	90.80	23.127		
8,800.00	8,442.94	8,504.86	8,442.94	58.56	46.64	90.11	-306.00	561.00	2,100.00	2,008.20	91.80	22.876		
8,900.00	8,542.94	8,604.86	8,542.94	58.97	47.15	90.11	-306.00	561.00	2,100.00	2,007.21	92.80	22.630		
9,000.00	8,642.94	8,704.86	8,642.94	59.38	47.65	90.11	-306.00	561.00	2,100.00	2,006.21	93.80	22.389		
9,100.00	8,742.94	8,804.86	8,742.94	59.79	48.15	90.11	-306.00	561.00	2,100.00	2,005.20	94.80	22.152		
9,200.00	8,842.94	8,904.86	8,842.94	60.20	48.66	90.11	-306.00	561.00	2,100.00	2,004.20	95.80	21.920		
9,300.00	8,942.94	9,004.86	8,942.94	60.62	49.16	90.11	-306.00	561.00	2,100.00	2,003.20	96.81	21.692		
9,400.00	9,042.54	9,104.45	9,042.54	61.03	49.66	-89.26	-306.00	561.00	2,099.89	2,002.16	97.73	21.487		
9,500.00	9,139.32	9,201.23	9,139.32	61.44	50.15	-89.93	-306.00	561.00	2,099.72	2,001.01	98.70	21.273		
9,508.10	9,146.94	9,208.86	9,146.94	61.47	50.19	-90.00	-306.00	561.00	2,099.71	2,000.93	98.78	21.256		
9,600.00	9,230.35	9,292.26	9,230.35	61.85	50.62	-90.91	-306.00	561.00	2,100.06	2,000.38	99.69	21.067		
9,700.00	9,312.86	9,374.77	9,312.86	62.24	51.03	-92.00	-306.00	561.00	2,101.84	2,001.18	100.67	20.879		
9,800.00	9,384.34	9,463.85	9,401.82	62.61	51.49	-93.22	-309.34	561.05	2,105.95	2,004.24	101.71	20.706		
9,900.00	9,442.63	9,575.92	9,511.34	62.95	52.09	-94.66	-332.22	561.39	2,112.25	2,009.33	102.92	20.524		
10,000.00	9,485.95	9,717.63	9,639.98	63.28	52.89	-96.32	-390.80	562.25	2,120.23	2,015.90	104.33	20.323		
10,100.00	9,512.99	9,909.37	9,783.66	63.61	54.04	-98.32	-516.38	564.10	2,128.61	2,022.54	106.07	20.067		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 3H - OH - Plan 1 12-21-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.00	9,522.91	10,172.65	9,898.44	63.96	55.80	-100.17	-750.74	567.55	2,134.77	2,026.35	108.42	19.690		
10,300.00	9,521.18	10,365.38	9,912.13	64.35	57.24	-100.55	-942.35	570.37	2,135.81	2,025.28	110.53	19.323		
10,400.00	9,519.14	10,465.38	9,910.73	64.79	58.07	-100.56	-1,042.33	571.84	2,135.93	2,023.78	112.15	19.045		
10,500.00	9,517.10	10,565.38	9,909.34	65.30	58.97	-100.58	-1,142.30	573.32	2,136.05	2,022.14	113.90	18.753		
10,600.00	9,515.06	10,665.38	9,907.94	65.87	59.93	-100.60	-1,242.28	574.79	2,136.17	2,020.38	115.79	18.449		
10,700.00	9,513.02	10,765.37	9,906.54	66.50	60.95	-100.62	-1,342.26	576.26	2,136.29	2,018.49	117.80	18.135		
10,800.00	9,510.98	10,865.37	9,905.15	67.20	62.04	-100.63	-1,442.24	577.73	2,136.40	2,016.48	119.92	17.815		
10,900.00	9,508.93	10,965.37	9,903.75	67.97	63.17	-100.65	-1,542.21	579.21	2,136.52	2,014.36	122.16	17.489		
11,000.00	9,506.89	11,065.37	9,902.35	68.81	64.36	-100.67	-1,642.19	580.68	2,136.64	2,012.14	124.51	17.161		
11,100.00	9,504.85	11,165.37	9,900.96	69.71	65.60	-100.68	-1,742.17	582.15	2,136.76	2,009.81	126.95	16.832		
11,200.00	9,502.81	11,265.36	9,899.56	70.68	66.89	-100.70	-1,842.15	583.62	2,136.88	2,007.40	129.49	16.503		
11,300.00	9,500.77	11,365.36	9,898.16	71.71	68.22	-100.72	-1,942.12	585.10	2,137.00	2,004.89	132.12	16.175		
11,400.00	9,498.73	11,465.36	9,896.77	72.80	69.59	-100.73	-2,042.10	586.57	2,137.12	2,002.30	134.83	15.851		
11,500.00	9,496.69	11,565.36	9,895.37	73.95	71.00	-100.75	-2,142.08	588.04	2,137.25	1,999.63	137.62	15.530		
11,600.00	9,494.65	11,665.35	9,893.98	75.16	72.44	-100.77	-2,242.05	589.51	2,137.37	1,996.89	140.48	15.215		
11,700.00	9,492.61	11,765.35	9,892.58	76.41	73.93	-100.79	-2,342.03	590.99	2,137.49	1,994.08	143.41	14.904		
11,800.00	9,490.57	11,865.35	9,891.18	77.72	75.44	-100.80	-2,442.01	592.46	2,137.61	1,991.20	146.41	14.600		
11,900.00	9,488.53	11,965.35	9,889.79	79.07	76.99	-100.82	-2,541.99	593.93	2,137.73	1,988.26	149.47	14.302		
12,000.00	9,486.49	12,065.35	9,888.39	80.46	78.56	-100.84	-2,641.96	595.40	2,137.85	1,985.27	152.59	14.011		
12,100.00	9,484.44	12,165.34	9,886.99	81.89	80.16	-100.85	-2,741.94	596.88	2,137.97	1,982.22	155.76	13.726		
12,200.00	9,482.40	12,265.34	9,885.60	83.36	81.79	-100.87	-2,841.92	598.35	2,138.10	1,979.12	158.98	13.449		
12,300.00	9,480.36	12,365.34	9,884.20	84.86	83.44	-100.89	-2,941.90	599.82	2,138.22	1,975.97	162.25	13.179		
12,400.00	9,478.32	12,465.34	9,882.81	86.40	85.12	-100.90	-3,041.87	601.30	2,138.34	1,972.78	165.56	12.915		
12,500.00	9,476.28	12,565.34	9,881.41	87.96	86.81	-100.92	-3,141.85	602.77	2,138.46	1,969.54	168.92	12.660		
12,600.00	9,474.24	12,665.33	9,880.01	89.55	88.53	-100.94	-3,241.83	604.24	2,138.59	1,966.27	172.32	12.411		
12,700.00	9,472.20	12,765.33	9,878.62	91.17	90.26	-100.96	-3,341.81	605.71	2,138.71	1,962.96	175.75	12.169		
12,800.00	9,470.16	12,865.33	9,877.22	92.82	92.02	-100.97	-3,441.78	607.19	2,138.83	1,959.61	179.22	11.934		
12,900.00	9,468.12	12,965.33	9,875.82	94.48	93.79	-100.99	-3,541.76	608.66	2,138.96	1,956.23	182.72	11.706		
13,000.00	9,466.08	13,065.33	9,874.43	96.17	95.57	-101.01	-3,641.74	610.13	2,139.08	1,952.82	186.26	11.485		
13,100.00	9,464.04	13,165.32	9,873.03	97.88	97.38	-101.02	-3,741.71	611.60	2,139.20	1,949.38	189.82	11.270		
13,200.00	9,461.99	13,265.32	9,871.64	99.61	99.19	-101.04	-3,841.69	613.08	2,139.33	1,945.92	193.41	11.061		
13,300.00	9,459.95	13,365.32	9,870.24	101.36	101.02	-101.06	-3,941.67	614.55	2,139.45	1,942.42	197.03	10.859		
13,400.00	9,457.91	13,465.32	9,868.84	103.12	102.86	-101.07	-4,041.65	616.02	2,139.58	1,938.91	200.67	10.662		
13,500.00	9,455.87	13,565.32	9,867.45	104.90	104.72	-101.09	-4,141.62	617.49	2,139.70	1,935.36	204.34	10.472		
13,600.00	9,453.83	13,665.31	9,866.05	106.70	106.58	-101.11	-4,241.60	618.97	2,139.82	1,931.80	208.02	10.286		
13,700.00	9,451.78	13,765.31	9,864.65	108.50	108.46	-101.12	-4,341.58	620.44	2,139.95	1,928.22	211.73	10.107		
13,800.00	9,449.75	13,865.31	9,863.26	110.33	110.35	-101.14	-4,441.56	621.91	2,140.07	1,924.61	215.46	9.933		
13,900.00	9,447.71	13,965.31	9,861.86	112.16	112.25	-101.16	-4,541.53	623.38	2,140.20	1,920.99	219.21	9.763		
14,000.00	9,445.67	14,065.30	9,860.46	114.01	114.15	-101.18	-4,641.51	624.86	2,140.32	1,917.35	222.98	9.599		
14,100.00	9,443.63	14,165.30	9,859.07	115.87	116.07	-101.19	-4,741.49	626.33	2,140.45	1,913.69	226.76	9.439		
14,200.00	9,441.59	14,265.30	9,857.67	117.74	117.99	-101.21	-4,841.47	627.80	2,140.58	1,910.02	230.56	9.284		
14,300.00	9,439.54	14,365.30	9,856.28	119.62	119.92	-101.23	-4,941.44	629.27	2,140.70	1,906.33	234.37	9.134		
14,400.00	9,437.50	14,465.30	9,854.88	121.51	121.86	-101.24	-5,041.42	630.75	2,140.83	1,902.63	238.20	8.987		
14,500.00	9,435.46	14,565.29	9,853.48	123.41	123.81	-101.26	-5,141.40	632.22	2,140.95	1,898.91	242.04	8.845		
14,600.00	9,433.42	14,665.29	9,852.09	125.32	125.76	-101.28	-5,241.37	633.69	2,141.08	1,895.18	245.90	8.707		
14,700.00	9,431.38	14,765.29	9,850.69	127.24	127.72	-101.29	-5,341.35	635.16	2,141.21	1,891.44	249.77	8.573		
14,800.00	9,429.34	14,865.29	9,849.29	129.16	129.69	-101.31	-5,441.33	636.64	2,141.33	1,887.69	253.65	8.442		
14,900.00	9,427.46	14,968.36	9,847.87	131.09	131.72	-101.32	-5,544.38	638.14	2,141.55	1,883.90	257.66	8.312		
15,000.00	9,426.77	15,082.62	9,847.86	133.03	133.98	-101.34	-5,658.64	638.73	2,141.82	1,879.97	261.85	8.179		
15,100.00	9,426.12	15,182.61	9,848.15	134.98	135.95	-101.36	-5,758.63	639.04	2,142.01	1,876.25	265.75	8.060		
15,200.00	9,425.48	15,282.61	9,848.44	136.93	137.93	-101.39	-5,858.63	639.35	2,142.19	1,872.53	269.66	7.944		
15,300.00	9,424.83	15,382.61	9,848.73	138.89	139.92	-101.41	-5,958.62	639.66	2,142.37	1,868.80	273.58	7.831		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 3H - OH - Plan 1 12-21-17												Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,400.00	9,424.18	15,482.60	9,849.01	140.85	141.91	-101.44	-6,058.61	639.97	2,142.56	1,865.05	277.51	7.721	
15,500.00	9,423.54	15,582.60	9,849.30	142.82	143.91	-101.46	-6,158.61	640.28	2,142.74	1,861.30	281.44	7.613	
15,600.00	9,422.89	15,682.59	9,849.59	144.80	145.91	-101.48	-6,258.60	640.59	2,142.93	1,857.54	285.38	7.509	
15,700.00	9,422.25	15,782.59	9,849.87	146.78	147.92	-101.51	-6,358.60	640.90	2,143.11	1,853.78	289.33	7.407	
15,800.00	9,421.60	15,882.58	9,850.16	148.77	149.93	-101.53	-6,458.59	641.21	2,143.30	1,850.01	293.29	7.308	
15,900.00	9,420.95	15,982.58	9,850.45	150.76	151.94	-101.56	-6,558.59	641.52	2,143.49	1,846.23	297.26	7.211	
16,000.00	9,420.31	16,082.58	9,850.74	152.75	153.96	-101.58	-6,658.58	641.83	2,143.67	1,842.44	301.23	7.116	
16,100.00	9,419.66	16,182.57	9,851.02	154.75	155.98	-101.61	-6,758.58	642.14	2,143.86	1,838.65	305.21	7.024	
16,200.00	9,419.01	16,282.57	9,851.31	156.76	158.01	-101.63	-6,858.57	642.45	2,144.05	1,834.85	309.20	6.934	
16,300.00	9,418.37	16,382.56	9,851.60	158.77	160.03	-101.66	-6,958.57	642.76	2,144.23	1,831.05	313.19	6.846	
16,400.00	9,417.72	16,482.56	9,851.88	160.78	162.07	-101.68	-7,058.56	643.07	2,144.42	1,827.24	317.18	6.761	
16,500.00	9,417.08	16,582.55	9,852.17	162.80	164.10	-101.70	-7,158.56	643.38	2,144.61	1,823.42	321.19	6.677	
16,600.00	9,416.43	16,682.55	9,852.46	164.82	166.14	-101.73	-7,258.55	643.69	2,144.80	1,819.60	325.20	6.595	
16,700.00	9,415.78	16,782.54	9,852.74	166.84	168.18	-101.75	-7,358.55	644.00	2,144.99	1,815.78	329.21	6.516	
16,800.00	9,415.14	16,882.54	9,853.03	168.86	170.22	-101.78	-7,458.54	644.31	2,145.18	1,811.95	333.23	6.438	
16,900.00	9,414.49	16,982.54	9,853.32	170.89	172.27	-101.80	-7,558.54	644.62	2,145.37	1,808.12	337.25	6.361	
17,000.00	9,413.84	17,082.53	9,853.61	172.93	174.32	-101.83	-7,658.53	644.93	2,145.56	1,804.28	341.28	6.287	
17,100.00	9,413.20	17,182.53	9,853.89	174.96	176.37	-101.85	-7,758.53	645.24	2,145.75	1,800.44	345.31	6.214	
17,200.00	9,412.55	17,282.52	9,854.18	177.00	178.43	-101.88	-7,858.52	645.55	2,145.94	1,796.60	349.34	6.143	
17,300.00	9,411.91	17,382.52	9,854.47	179.04	180.48	-101.90	-7,958.52	645.86	2,146.13	1,792.75	353.38	6.073	
17,400.00	9,411.26	17,482.51	9,854.75	181.09	182.54	-101.92	-8,058.51	646.17	2,146.32	1,788.90	357.42	6.005	
17,500.00	9,410.61	17,582.51	9,855.04	183.13	184.60	-101.95	-8,158.50	646.48	2,146.52	1,785.05	361.47	5.938	
17,600.00	9,409.97	17,682.51	9,855.33	185.18	186.67	-101.97	-8,258.50	646.79	2,146.71	1,781.19	365.52	5.873	
17,700.00	9,409.32	17,782.50	9,855.61	187.24	188.73	-102.00	-8,358.49	647.10	2,146.90	1,777.33	369.58	5.809	
17,800.00	9,408.67	17,882.50	9,855.90	189.29	190.80	-102.02	-8,458.49	647.41	2,147.10	1,773.46	373.63	5.747	
17,900.00	9,408.03	17,982.49	9,856.19	191.35	192.87	-102.05	-8,558.48	647.72	2,147.29	1,769.60	377.69	5.685	
18,000.00	9,407.38	18,082.49	9,856.48	193.40	194.94	-102.07	-8,658.48	648.03	2,147.48	1,765.73	381.76	5.625	
18,100.00	9,406.73	18,182.48	9,856.76	195.47	197.01	-102.10	-8,758.47	648.34	2,147.68	1,761.86	385.82	5.567	
18,200.00	9,406.09	18,282.48	9,857.05	197.53	199.09	-102.12	-8,858.47	648.65	2,147.87	1,757.98	389.89	5.509	
18,300.00	9,405.44	18,382.47	9,857.34	199.59	201.16	-102.14	-8,958.46	648.96	2,148.07	1,754.11	393.96	5.452	
18,400.00	9,404.80	18,482.47	9,857.62	201.66	203.24	-102.17	-9,058.46	649.27	2,148.27	1,750.23	398.04	5.397	
18,500.00	9,404.15	18,582.47	9,857.91	203.73	205.32	-102.19	-9,158.45	649.58	2,148.46	1,746.35	402.11	5.343	
18,600.00	9,403.50	18,682.46	9,858.20	205.80	207.40	-102.22	-9,258.45	649.89	2,148.66	1,742.47	406.19	5.290	
18,700.00	9,402.86	18,782.46	9,858.49	207.87	209.49	-102.24	-9,358.44	650.20	2,148.86	1,738.58	410.27	5.238	
18,800.00	9,402.21	18,882.45	9,858.77	209.94	211.57	-102.27	-9,458.44	650.51	2,149.05	1,734.70	414.36	5.186	
18,900.00	9,401.56	18,982.45	9,859.06	212.02	213.66	-102.29	-9,558.43	650.82	2,149.25	1,730.81	418.44	5.136	
19,000.00	9,400.92	19,082.44	9,859.35	214.10	215.74	-102.31	-9,658.43	651.13	2,149.45	1,726.92	422.53	5.087	
19,100.00	9,400.27	19,182.44	9,859.63	216.18	217.83	-102.34	-9,758.42	651.44	2,149.65	1,723.03	426.62	5.039	
19,200.00	9,399.63	19,282.44	9,859.92	218.26	219.92	-102.36	-9,858.42	651.75	2,149.85	1,719.14	430.71	4.991	
19,300.00	9,398.98	19,382.43	9,860.21	220.34	222.01	-102.39	-9,958.41	652.06	2,150.05	1,715.24	434.80	4.945	
19,400.00	9,398.33	19,482.43	9,860.49	222.42	224.11	-102.41	-10,058.40	652.37	2,150.25	1,711.35	438.90	4.899	
19,500.00	9,397.69	19,582.42	9,860.78	224.50	226.20	-102.44	-10,158.40	652.68	2,150.45	1,707.45	443.00	4.854	
19,600.00	9,397.04	19,682.42	9,861.07	226.59	228.29	-102.46	-10,258.39	652.99	2,150.65	1,703.55	447.09	4.810	
19,700.00	9,396.39	19,782.41	9,861.36	228.68	230.39	-102.48	-10,358.39	653.30	2,150.85	1,699.65	451.19	4.767	
19,800.00	9,395.75	19,882.41	9,861.64	230.77	232.49	-102.51	-10,458.38	653.61	2,151.05	1,695.75	455.30	4.725	
19,900.00	9,395.10	19,982.41	9,861.93	232.86	234.58	-102.53	-10,558.38	653.92	2,151.25	1,691.85	459.40	4.683	
19,915.77	9,395.00	19,998.17	9,861.97	233.19	234.92	-102.54	-10,574.15	653.97	2,151.28	1,691.24	460.04	4.676	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 4H - OH - Plan 1 12-21-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00					
100.00	100.00	100.00	100.00	0.19	0.19	0.00	50.00	0.00	50.00	49.61	0.39	129.149		
200.00	200.00	200.00	200.00	0.73	0.73	0.00	50.00	0.00	50.00	48.54	1.46	34.187		
300.00	300.00	300.00	300.00	1.27	1.27	0.00	50.00	0.00	50.00	47.46	2.54	19.701		
400.00	400.00	400.00	400.00	1.81	1.81	0.00	50.00	0.00	50.00	46.39	3.61	13.837		
500.00	500.00	500.00	500.00	2.34	2.34	0.00	50.00	0.00	50.00	45.31	4.69	10.664		
600.00	600.00	600.00	600.00	2.88	2.88	0.00	50.00	0.00	50.00	44.24	5.76	8.674		
700.00	700.00	700.00	700.00	3.42	3.42	0.00	50.00	0.00	50.00	43.16	6.84	7.310		
800.00	800.00	800.00	800.00	3.96	3.96	0.00	50.00	0.00	50.00	42.08	7.92	6.317		
900.00	900.00	900.00	900.00	4.50	4.50	0.00	50.00	0.00	50.00	41.01	8.99	5.561		
1,000.00	1,000.00	1,000.00	1,000.00	5.03	5.03	0.00	50.00	0.00	50.00	39.93	10.07	4.967		
1,100.00	1,100.00	1,100.00	1,100.00	5.57	5.57	0.00	50.00	0.00	50.00	38.86	11.14	4.488		
1,200.00	1,200.00	1,200.00	1,200.00	6.11	6.11	0.00	50.00	0.00	50.00	37.78	12.22	4.093		
1,300.00	1,300.00	1,300.00	1,300.00	6.65	6.65	0.00	50.00	0.00	50.00	36.71	13.29	3.762		
1,400.00	1,400.00	1,400.00	1,400.00	7.18	7.18	0.00	50.00	0.00	50.00	35.63	14.37	3.480		
1,500.00	1,500.00	1,500.00	1,500.00	7.72	7.72	0.00	50.00	0.00	50.00	34.56	15.44	3.238		
1,600.00	1,600.00	1,600.00	1,600.00	8.26	8.26	0.00	50.00	0.00	50.00	33.48	16.52	3.027		
1,700.00	1,700.00	1,700.00	1,700.00	8.80	8.80	0.00	50.00	0.00	50.00	32.41	17.59	2.842		
1,800.00	1,800.00	1,800.00	1,800.00	9.33	9.33	0.00	50.00	0.00	50.00	31.33	18.67	2.678		
1,900.00	1,899.98	1,901.57	1,901.55	9.86	9.85	103.95	48.33	0.66	48.75	29.04	19.71	2.473		
2,000.00	1,999.84	2,002.70	2,002.53	10.37	10.35	113.26	43.34	2.65	45.76	25.05	20.71	2.210		
2,098.05	2,097.51	2,100.99	2,100.43	10.87	10.84	130.03	35.32	5.83	43.79	22.13	21.66	2.021 CC		
2,100.00	2,099.45	2,102.92	2,102.35	10.88	10.85	130.43	35.13	5.91	43.80	22.11	21.68	2.020 ES, SF		
2,200.00	2,198.70	2,201.39	2,200.29	11.41	11.34	151.14	25.57	9.70	48.30	25.71	22.59	2.138		
2,300.00	2,297.47	2,299.31	2,297.67	11.94	11.84	167.42	16.05	13.48	61.27	37.83	23.45	2.613		
2,400.00	2,395.62	2,396.57	2,394.39	12.49	12.34	177.70	6.61	17.23	80.86	56.57	24.29	3.328		
2,500.00	2,493.06	2,493.03	2,490.33	13.06	12.84	-176.19	-2.76	20.96	105.38	80.26	25.12	4.195		
2,600.00	2,589.64	2,588.60	2,585.37	13.66	13.35	-172.54	-12.04	24.64	133.94	108.01	25.93	5.166		
2,700.00	2,685.27	2,683.14	2,679.40	14.29	13.85	-170.32	-21.23	28.29	166.08	139.38	26.70	6.220		
2,800.00	2,779.82	2,776.54	2,772.29	14.95	14.35	-168.95	-30.30	31.89	201.59	174.15	27.44	7.346		
2,900.00	2,873.17	2,868.70	2,863.94	15.66	14.84	-168.10	-39.25	35.45	240.33	212.18	28.15	8.537		
3,000.00	2,965.21	2,959.49	2,954.24	16.42	15.33	-167.58	-48.07	38.95	282.20	253.38	28.82	9.791		
3,100.00	3,055.84	3,048.81	3,043.07	17.24	15.82	-167.27	-56.75	42.40	327.16	297.70	29.46	11.106		
3,200.00	3,144.94	3,136.55	3,130.33	18.12	16.30	-167.09	-65.27	45.78	375.12	345.07	30.06	12.481		
3,300.00	3,232.39	3,222.60	3,215.91	19.07	16.77	-166.99	-73.63	49.10	426.05	395.43	30.82	13.916		
3,400.00	3,318.33	3,307.09	3,299.93	20.09	17.23	-167.08	-81.83	52.36	479.52	448.13	31.39	15.275		
3,500.00	3,404.05	3,391.35	3,383.73	21.16	17.70	-167.27	-90.02	55.61	533.36	500.93	32.42	16.449		
3,600.00	3,489.76	3,475.61	3,467.53	22.27	18.16	-167.43	-98.20	58.86	587.20	553.72	33.47	17.542		
3,700.00	3,575.48	3,559.87	3,551.32	23.40	18.63	-167.56	-106.39	62.11	641.04	606.51	34.53	18.562		
3,800.00	3,661.19	3,644.12	3,635.12	24.56	19.10	-167.67	-114.57	65.36	694.88	659.28	35.61	19.515		
3,900.00	3,746.90	3,728.38	3,718.92	25.74	19.57	-167.77	-122.76	68.62	748.73	712.04	36.69	20.406		
4,000.00	3,832.62	3,812.64	3,802.71	26.94	20.04	-167.85	-130.94	71.87	802.58	764.80	37.78	21.241		
4,100.00	3,918.33	3,896.90	3,886.51	28.16	20.51	-167.92	-139.12	75.12	856.43	817.54	38.89	22.024		
4,200.00	4,004.05	3,981.16	3,970.31	29.39	20.98	-167.99	-147.31	78.37	910.28	870.28	40.00	22.759		
4,300.00	4,089.76	4,065.42	4,054.11	30.64	21.46	-168.04	-155.49	81.62	964.13	923.02	41.11	23.450		
4,400.00	4,175.48	4,149.68	4,137.90	31.89	21.93	-168.09	-163.68	84.87	1,017.98	975.74	42.24	24.102		
4,500.00	4,261.19	4,233.93	4,221.70	33.16	22.40	-168.14	-171.86	88.12	1,071.83	1,028.47	43.37	24.716		
4,600.00	4,346.91	4,318.19	4,305.50	34.43	22.88	-168.18	-180.04	91.37	1,125.69	1,081.18	44.50	25.296		
4,700.00	4,432.62	4,402.45	4,389.29	35.72	23.36	-168.22	-188.23	94.62	1,179.54	1,133.90	45.64	25.844		
4,800.00	4,518.33	4,486.71	4,473.09	37.01	23.83	-168.25	-196.41	97.87	1,233.39	1,186.61	46.79	26.363		
4,900.00	4,604.83	4,571.77	4,557.68	38.28	24.31	-168.50	-204.68	101.15	1,285.96	1,237.49	48.47	26.530		
5,000.00	4,693.02	4,658.57	4,644.01	39.48	24.81	-168.71	-213.11	104.50	1,335.60	1,285.44	50.16	26.627		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 4H - OH - Plan 1 12-21-17													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	4,782.80	4,747.02	4,731.98	40.62	25.31	-168.86	-221.70	107.91	1,382.23	1,330.43	51.80	26.682		
5,200.00	4,874.07	4,837.00	4,821.47	41.68	25.82	-168.97	-230.44	111.39	1,425.81	1,372.41	53.40	26.699		
5,300.00	4,966.70	4,928.41	4,912.37	42.69	26.34	-169.03	-239.32	114.91	1,466.29	1,411.34	54.95	26.683		
5,400.00	5,060.59	5,021.13	5,004.58	43.62	26.87	-169.06	-248.32	118.49	1,503.62	1,447.17	56.45	26.638		
5,500.00	5,155.63	5,115.05	5,097.99	44.48	27.40	-169.05	-257.45	122.11	1,537.75	1,479.87	57.88	26.567		
5,600.00	5,251.69	5,210.05	5,192.47	45.28	27.94	-169.01	-266.67	125.78	1,568.65	1,509.39	59.25	26.474		
5,700.00	5,348.66	5,306.03	5,287.92	46.02	28.49	-168.94	-276.00	129.48	1,596.29	1,535.73	60.56	26.360		
5,800.00	5,446.43	5,402.85	5,384.22	46.69	29.05	-168.83	-285.40	133.22	1,620.63	1,558.84	61.79	26.227		
5,900.00	5,544.87	5,512.80	5,493.62	47.30	29.67	-168.68	-295.53	137.24	1,641.49	1,578.47	63.02	26.046		
6,000.00	5,643.86	5,638.28	5,618.84	47.85	30.36	-168.62	-302.81	140.13	1,657.64	1,593.41	64.23	25.809		
6,100.00	5,743.29	5,762.75	5,743.29	48.35	31.01	-168.68	-305.00	141.00	1,668.79	1,603.49	65.30	25.556		
6,200.00	5,843.02	5,862.49	5,843.02	48.79	31.50	-168.75	-305.00	141.00	1,675.83	1,609.71	66.12	25.344		
6,300.00	5,942.95	5,962.42	5,942.95	49.19	31.99	-168.79	-305.00	141.00	1,679.46	1,612.60	66.87	25.117		
6,400.00	6,042.94	6,062.41	6,042.94	49.53	32.49	90.10	-305.00	141.00	1,680.00	1,612.25	67.76	24.795		
6,500.00	6,142.94	6,162.41	6,142.94	49.88	32.98	90.10	-305.00	141.00	1,680.00	1,611.31	68.70	24.455		
6,600.00	6,242.94	6,262.41	6,242.94	50.22	33.48	90.10	-305.00	141.00	1,680.00	1,610.36	69.64	24.123		
6,700.00	6,342.94	6,362.41	6,342.94	50.57	33.98	90.10	-305.00	141.00	1,680.00	1,609.41	70.59	23.798		
6,800.00	6,442.94	6,462.41	6,442.94	50.92	34.48	90.10	-305.00	141.00	1,680.00	1,608.46	71.55	23.481		
6,900.00	6,542.94	6,562.41	6,542.94	51.28	34.98	90.10	-305.00	141.00	1,680.00	1,607.50	72.50	23.171		
7,000.00	6,642.94	6,662.41	6,642.94	51.64	35.48	90.10	-305.00	141.00	1,680.00	1,606.54	73.46	22.868		
7,100.00	6,742.94	6,762.41	6,742.94	52.00	35.99	90.10	-305.00	141.00	1,680.00	1,605.58	74.43	22.573		
7,200.00	6,842.94	6,862.41	6,842.94	52.36	36.49	90.10	-305.00	141.00	1,680.00	1,604.61	75.39	22.283		
7,300.00	6,942.94	6,962.41	6,942.94	52.73	37.00	90.10	-305.00	141.00	1,680.00	1,603.64	76.36	22.001		
7,400.00	7,042.94	7,062.41	7,042.94	53.10	37.50	90.10	-305.00	141.00	1,680.00	1,602.67	77.33	21.724		
7,500.00	7,142.94	7,162.41	7,142.94	53.47	38.01	90.10	-305.00	141.00	1,680.00	1,601.70	78.31	21.454		
7,600.00	7,242.94	7,262.41	7,242.94	53.85	38.52	90.10	-305.00	141.00	1,680.00	1,600.72	79.28	21.190		
7,700.00	7,342.94	7,362.41	7,342.94	54.23	39.03	90.10	-305.00	141.00	1,680.00	1,599.74	80.26	20.931		
7,800.00	7,442.94	7,462.41	7,442.94	54.61	39.54	90.10	-305.00	141.00	1,680.00	1,598.76	81.24	20.678		
7,900.00	7,542.94	7,562.41	7,542.94	54.99	40.05	90.10	-305.00	141.00	1,680.00	1,597.77	82.23	20.431		
8,000.00	7,642.94	7,662.41	7,642.94	55.38	40.56	90.10	-305.00	141.00	1,680.00	1,596.79	83.22	20.189		
8,100.00	7,742.94	7,762.41	7,742.94	55.77	41.07	90.10	-305.00	141.00	1,680.00	1,595.80	84.20	19.952		
8,200.00	7,842.94	7,862.41	7,842.94	56.16	41.58	90.10	-305.00	141.00	1,680.00	1,594.81	85.19	19.720		
8,300.00	7,942.94	7,962.41	7,942.94	56.56	42.09	90.10	-305.00	141.00	1,680.00	1,593.82	86.19	19.493		
8,400.00	8,042.94	8,062.41	8,042.94	56.95	42.61	90.10	-305.00	141.00	1,680.00	1,592.82	87.18	19.270		
8,500.00	8,142.94	8,162.41	8,142.94	57.35	43.12	90.10	-305.00	141.00	1,680.00	1,591.83	88.18	19.053		
8,600.00	8,242.94	8,262.41	8,242.94	57.75	43.64	90.10	-305.00	141.00	1,680.00	1,590.83	89.17	18.839		
8,700.00	8,342.94	8,362.41	8,342.94	58.16	44.15	90.10	-305.00	141.00	1,680.00	1,589.83	90.17	18.631		
8,800.00	8,442.94	8,462.41	8,442.94	58.56	44.67	90.10	-305.00	141.00	1,680.00	1,588.83	91.18	18.426		
8,900.00	8,542.94	8,562.41	8,542.94	58.97	45.18	90.10	-305.00	141.00	1,680.00	1,587.82	92.18	18.225		
9,000.00	8,642.94	8,662.41	8,642.94	59.38	45.70	90.10	-305.00	141.00	1,680.00	1,586.82	93.18	18.029		
9,100.00	8,742.94	8,762.41	8,742.94	59.79	46.22	90.10	-305.00	141.00	1,680.00	1,585.81	94.19	17.836		
9,200.00	8,842.94	8,862.41	8,842.94	60.20	46.74	90.10	-305.00	141.00	1,680.00	1,584.80	95.20	17.647		
9,300.00	8,942.94	8,962.41	8,942.94	60.62	47.25	90.10	-305.00	141.00	1,680.00	1,583.80	96.21	17.462		
9,400.00	9,042.54	9,059.19	9,039.55	61.03	47.76	-89.16	-309.24	141.06	1,679.95	1,582.85	97.10	17.301		
9,500.00	9,139.32	9,155.32	9,133.54	61.44	48.31	-89.31	-328.83	141.35	1,679.90	1,581.77	98.13	17.120		
9,600.00	9,230.35	9,252.19	9,223.61	61.85	48.89	-89.48	-364.18	141.87	1,679.84	1,580.63	99.21	16.932		
9,700.00	9,312.86	9,350.00	9,307.21	62.24	49.52	-89.67	-414.73	142.62	1,679.80	1,579.44	100.36	16.737		
9,800.00	9,384.34	9,448.56	9,381.52	62.61	50.18	-89.87	-479.27	143.57	1,679.78	1,578.20	101.58	16.536		
9,865.11	9,423.91	9,513.32	9,423.86	62.83	50.63	-90.00	-528.23	144.29	1,679.77	1,577.36	102.42	16.401		
9,900.00	9,442.63	9,548.21	9,444.30	62.95	50.88	-90.07	-556.50	144.70	1,679.78	1,576.90	102.88	16.328		
10,000.00	9,485.95	9,648.91	9,493.20	63.28	51.63	-90.27	-644.37	146.00	1,679.79	1,575.54	104.25	16.113		
10,100.00	9,512.99	9,750.67	9,526.23	63.61	52.41	-90.46	-740.47	147.41	1,679.83	1,574.13	105.70	15.893		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 4H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.00	9,522.91	9,853.46	9,541.83	63.96	53.23	-90.65	-841.92	148.91	1,679.88	1,572.69	107.19	15.672	
10,300.00	9,521.18	9,955.16	9,541.57	64.35	54.07	-90.70	-943.56	150.40	1,679.90	1,571.16	108.74	15.449	
10,400.00	9,519.14	10,055.16	9,539.20	64.79	54.95	-90.68	-1,043.52	151.88	1,679.90	1,569.50	110.39	15.217	
10,500.00	9,517.10	10,155.16	9,536.84	65.30	55.91	-90.67	-1,143.48	153.35	1,679.89	1,567.70	112.19	14.973	
10,600.00	9,515.06	10,255.15	9,534.47	65.87	56.93	-90.66	-1,243.44	154.82	1,679.89	1,565.76	114.13	14.719	
10,700.00	9,513.02	10,355.15	9,532.11	66.50	58.01	-90.65	-1,343.40	156.29	1,679.89	1,563.69	116.19	14.458	
10,800.00	9,510.98	10,455.15	9,529.74	67.20	59.16	-90.64	-1,443.37	157.76	1,679.88	1,561.51	118.38	14.191	
10,900.00	9,508.93	10,555.15	9,527.38	67.97	60.36	-90.63	-1,543.33	159.24	1,679.88	1,559.20	120.67	13.921	
11,000.00	9,506.89	10,655.15	9,525.02	68.81	61.61	-90.62	-1,643.29	160.71	1,679.88	1,556.79	123.08	13.648	
11,100.00	9,504.85	10,755.15	9,522.65	69.71	62.91	-90.61	-1,743.25	162.18	1,679.87	1,554.28	125.59	13.376	
11,200.00	9,502.81	10,855.15	9,520.29	70.68	64.25	-90.60	-1,843.21	163.65	1,679.87	1,551.67	128.20	13.104	
11,300.00	9,500.77	10,955.15	9,517.92	71.71	65.64	-90.59	-1,943.17	165.12	1,679.87	1,548.97	130.90	12.834	
11,400.00	9,498.73	11,055.15	9,515.56	72.80	67.08	-90.57	-2,043.13	166.59	1,679.86	1,546.19	133.68	12.567	
11,500.00	9,496.69	11,155.15	9,513.20	73.95	68.54	-90.56	-2,143.09	168.07	1,679.86	1,543.32	136.54	12.303	
11,600.00	9,494.65	11,255.15	9,510.83	75.16	70.05	-90.55	-2,243.05	169.54	1,679.86	1,540.38	139.48	12.044	
11,700.00	9,492.61	11,355.15	9,508.47	76.41	71.59	-90.54	-2,343.01	171.01	1,679.85	1,537.37	142.48	11.790	
11,800.00	9,490.57	11,455.15	9,506.10	77.72	73.16	-90.53	-2,442.97	172.48	1,679.85	1,534.30	145.56	11.541	
11,900.00	9,488.53	11,555.15	9,503.74	79.07	74.76	-90.52	-2,542.93	173.95	1,679.85	1,531.16	148.69	11.298	
12,000.00	9,486.49	11,655.15	9,501.38	80.46	76.38	-90.51	-2,642.89	175.43	1,679.85	1,527.96	151.88	11.060	
12,100.00	9,484.44	11,755.15	9,499.01	81.89	78.03	-90.50	-2,742.85	176.90	1,679.84	1,524.71	155.13	10.828	
12,200.00	9,482.40	11,855.15	9,496.65	83.36	79.71	-90.49	-2,842.81	178.37	1,679.84	1,521.41	158.43	10.603	
12,300.00	9,480.36	11,955.15	9,494.28	84.86	81.41	-90.47	-2,942.78	179.84	1,679.84	1,518.06	161.78	10.384	
12,400.00	9,478.32	12,055.15	9,491.92	86.40	83.13	-90.46	-3,042.74	181.31	1,679.84	1,514.67	165.17	10.170	
12,500.00	9,476.28	12,155.14	9,489.56	87.96	84.87	-90.45	-3,142.70	182.79	1,679.83	1,511.23	168.60	9.963	
12,600.00	9,474.24	12,255.14	9,487.19	89.55	86.63	-90.44	-3,242.66	184.26	1,679.83	1,507.75	172.08	9.762	
12,700.00	9,472.20	12,355.14	9,484.83	91.17	88.41	-90.43	-3,342.62	185.73	1,679.83	1,504.24	175.59	9.567	
12,800.00	9,470.16	12,455.14	9,482.46	92.82	90.20	-90.42	-3,442.58	187.20	1,679.83	1,500.69	179.14	9.377	
12,900.00	9,468.12	12,555.14	9,480.10	94.48	92.01	-90.41	-3,542.54	188.67	1,679.83	1,497.11	182.72	9.194	
13,000.00	9,466.08	12,655.14	9,477.73	96.17	93.84	-90.40	-3,642.50	190.15	1,679.82	1,493.50	186.33	9.015	
13,100.00	9,464.04	12,755.14	9,475.37	97.88	95.68	-90.39	-3,742.46	191.62	1,679.82	1,489.85	189.97	8.843	
13,200.00	9,461.99	12,855.14	9,473.01	99.61	97.53	-90.38	-3,842.42	193.09	1,679.82	1,486.18	193.64	8.675	
13,300.00	9,459.95	12,955.14	9,470.64	101.36	99.39	-90.36	-3,942.38	194.56	1,679.82	1,482.49	197.33	8.513	
13,400.00	9,457.91	13,055.14	9,468.28	103.12	101.27	-90.35	-4,042.34	196.03	1,679.82	1,478.77	201.05	8.355	
13,500.00	9,455.87	13,155.14	9,465.91	104.90	103.16	-90.34	-4,142.30	197.51	1,679.81	1,475.02	204.79	8.202	
13,600.00	9,453.83	13,255.14	9,463.55	106.70	105.05	-90.33	-4,242.26	198.98	1,679.81	1,471.25	208.56	8.054	
13,700.00	9,451.79	13,355.14	9,461.19	108.50	106.96	-90.32	-4,342.23	200.45	1,679.81	1,467.47	212.35	7.911	
13,800.00	9,449.75	13,455.14	9,458.82	110.33	108.88	-90.31	-4,442.19	201.92	1,679.81	1,463.66	216.15	7.771	
13,900.00	9,447.71	13,555.14	9,456.46	112.16	110.80	-90.30	-4,542.15	203.39	1,679.81	1,459.83	219.98	7.636	
14,000.00	9,445.67	13,655.14	9,454.09	114.01	112.74	-90.29	-4,642.11	204.87	1,679.81	1,455.99	223.82	7.505	
14,100.00	9,443.63	13,755.14	9,451.73	115.87	114.68	-90.28	-4,742.07	206.34	1,679.81	1,452.12	227.68	7.378	
14,200.00	9,441.59	13,855.14	9,449.37	117.74	116.63	-90.27	-4,842.03	207.81	1,679.80	1,448.25	231.56	7.254	
14,300.00	9,439.54	13,955.14	9,447.00	119.62	118.59	-90.25	-4,941.99	209.28	1,679.80	1,444.35	235.45	7.134	
14,400.00	9,437.50	14,055.14	9,444.64	121.51	120.55	-90.24	-5,041.95	210.75	1,679.80	1,440.45	239.36	7.018	
14,500.00	9,435.46	14,155.13	9,442.27	123.41	122.52	-90.23	-5,141.91	212.23	1,679.80	1,436.52	243.28	6.905	
14,600.00	9,433.42	14,255.13	9,439.91	125.32	124.50	-90.22	-5,241.87	213.70	1,679.80	1,432.59	247.21	6.795	
14,700.00	9,431.38	14,355.13	9,437.55	127.24	126.48	-90.21	-5,341.83	215.17	1,679.80	1,428.64	251.16	6.688	
14,800.00	9,429.34	14,455.13	9,435.18	129.16	128.47	-90.20	-5,441.79	216.64	1,679.80	1,424.68	255.12	6.584	
14,836.40	9,428.66	14,491.53	9,434.32	129.86	129.20	-90.19	-5,478.17	217.18	1,679.85	1,423.24	256.61	6.546	
14,900.00	9,427.46	14,558.21	9,432.76	131.09	130.53	-90.18	-5,544.84	218.15	1,679.92	1,420.63	259.29	6.479	
15,000.00	9,426.77	14,674.57	9,431.93	133.03	132.85	-90.18	-5,661.18	218.79	1,680.09	1,416.43	263.65	6.372	
15,100.00	9,426.12	14,774.57	9,431.65	134.98	134.84	-90.19	-5,761.18	219.10	1,680.09	1,412.45	267.64	6.277	
15,200.00	9,425.48	14,874.57	9,431.36	136.93	136.84	-90.20	-5,861.18	219.41	1,680.09	1,408.45	271.63	6.185	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 4H - OH - Plan 1 12-21-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,300.00	9,424.83	14,974.56	9,431.08	138.89	138.85	-90.21	-5,961.18	219.72	1,680.08	1,404.45	275.63	6.095	
15,400.00	9,424.18	15,074.56	9,430.80	140.85	140.86	-90.23	-6,061.17	220.03	1,680.08	1,400.44	279.65	6.008	
15,500.00	9,423.54	15,174.56	9,430.51	142.82	142.88	-90.24	-6,161.17	220.34	1,680.08	1,396.42	283.67	5.923	
15,600.00	9,422.89	15,274.56	9,430.23	144.80	144.90	-90.25	-6,261.17	220.64	1,680.08	1,392.39	287.70	5.840	
15,700.00	9,422.25	15,374.56	9,429.95	146.78	146.92	-90.26	-6,361.17	220.95	1,680.08	1,388.35	291.74	5.759	
15,800.00	9,421.60	15,474.56	9,429.67	148.77	148.95	-90.28	-6,461.17	221.26	1,680.08	1,384.30	295.78	5.680	
15,900.00	9,420.95	15,574.56	9,429.38	150.76	150.98	-90.29	-6,561.17	221.57	1,680.08	1,380.25	299.83	5.603	
15,906.93	9,420.91	15,581.49	9,429.36	150.90	151.12	-90.29	-6,568.10	221.59	1,680.08	1,379.97	300.12	5.598	
16,000.00	9,420.31	15,674.56	9,429.10	152.75	153.01	-90.30	-6,661.16	221.88	1,680.08	1,376.19	303.89	5.529	
16,100.00	9,419.66	15,774.56	9,428.82	154.75	155.05	-90.31	-6,761.16	222.19	1,680.08	1,372.12	307.96	5.455	
16,200.00	9,419.01	15,874.56	9,428.53	156.76	157.09	-90.32	-6,861.16	222.50	1,680.08	1,368.05	312.04	5.384	
16,300.00	9,418.37	15,974.56	9,428.25	158.77	159.13	-90.34	-6,961.16	222.81	1,680.08	1,363.97	316.12	5.315	
16,400.00	9,417.72	16,074.56	9,427.97	160.78	161.18	-90.35	-7,061.16	223.12	1,680.08	1,359.88	320.20	5.247	
16,500.00	9,417.08	16,174.56	9,427.68	162.80	163.23	-90.36	-7,161.16	223.43	1,680.08	1,355.79	324.29	5.181	
16,600.00	9,416.43	16,274.56	9,427.40	164.82	165.28	-90.37	-7,261.16	223.73	1,680.09	1,351.69	328.39	5.116	
16,700.00	9,415.78	16,374.56	9,427.12	166.84	167.34	-90.39	-7,361.15	224.04	1,680.09	1,347.59	332.49	5.053	
16,800.00	9,415.14	16,474.56	9,426.84	168.86	169.39	-90.40	-7,461.15	224.35	1,680.09	1,343.48	336.60	4.991	
16,900.00	9,414.49	16,574.55	9,426.55	170.89	171.45	-90.41	-7,561.15	224.66	1,680.09	1,339.37	340.71	4.931	
17,000.00	9,413.84	16,674.55	9,426.27	172.93	173.51	-90.42	-7,661.15	224.97	1,680.09	1,335.26	344.83	4.872	
17,100.00	9,413.20	16,774.55	9,425.99	174.96	175.58	-90.44	-7,761.15	225.28	1,680.09	1,331.13	348.96	4.815	
17,200.00	9,412.55	16,874.55	9,425.70	177.00	177.64	-90.45	-7,861.15	225.59	1,680.09	1,327.01	353.08	4.758	
17,300.00	9,411.91	16,974.55	9,425.42	179.04	179.71	-90.46	-7,961.15	225.90	1,680.09	1,322.88	357.21	4.703	
17,400.00	9,411.26	17,074.55	9,425.14	181.09	181.78	-90.47	-8,061.14	226.21	1,680.09	1,318.74	361.35	4.649	
17,500.00	9,410.61	17,174.55	9,424.85	183.13	183.86	-90.49	-8,161.14	226.52	1,680.09	1,314.60	365.49	4.597	
17,600.00	9,409.97	17,274.55	9,424.57	185.18	185.93	-90.50	-8,261.14	226.82	1,680.09	1,310.46	369.63	4.545	
17,700.00	9,409.32	17,374.55	9,424.29	187.24	188.01	-90.51	-8,361.14	227.13	1,680.10	1,306.31	373.78	4.495	
17,800.00	9,408.67	17,474.55	9,424.01	189.29	190.08	-90.52	-8,461.14	227.44	1,680.10	1,302.16	377.93	4.445	
17,900.00	9,408.03	17,574.55	9,423.72	191.35	192.16	-90.54	-8,561.14	227.75	1,680.10	1,298.01	382.09	4.397	
18,000.00	9,407.38	17,674.55	9,423.44	193.40	194.24	-90.55	-8,661.13	228.06	1,680.10	1,293.85	386.25	4.350	
18,100.00	9,406.73	17,774.55	9,423.16	195.47	196.33	-90.56	-8,761.13	228.37	1,680.10	1,289.69	390.41	4.303	
18,200.00	9,406.09	17,874.55	9,422.87	197.53	198.41	-90.57	-8,861.13	228.68	1,680.10	1,285.53	394.57	4.258	
18,300.00	9,405.44	17,974.55	9,422.59	199.59	200.50	-90.58	-8,961.13	228.99	1,680.11	1,281.37	398.74	4.214	
18,400.00	9,404.80	18,074.54	9,422.31	201.66	202.59	-90.60	-9,061.13	229.30	1,680.11	1,277.20	402.91	4.170	
18,500.00	9,404.15	18,174.54	9,422.02	203.73	204.67	-90.61	-9,161.13	229.61	1,680.11	1,273.02	407.09	4.127	
18,600.00	9,403.50	18,274.54	9,421.74	205.80	206.76	-90.62	-9,261.13	229.92	1,680.11	1,268.85	411.26	4.085	
18,700.00	9,402.86	18,374.54	9,421.46	207.87	208.86	-90.63	-9,361.12	230.22	1,680.11	1,264.67	415.44	4.044	
18,800.00	9,402.21	18,474.54	9,421.18	209.94	210.95	-90.65	-9,461.12	230.53	1,680.12	1,260.49	419.62	4.004	
18,900.00	9,401.56	18,574.54	9,420.89	212.02	213.04	-90.66	-9,561.12	230.84	1,680.12	1,256.31	423.81	3.964	
19,000.00	9,400.92	18,674.54	9,420.61	214.10	215.14	-90.67	-9,661.12	231.15	1,680.12	1,252.13	428.00	3.926	
19,100.00	9,400.27	18,774.54	9,420.33	216.18	217.24	-90.68	-9,761.12	231.46	1,680.12	1,247.94	432.19	3.888	
19,200.00	9,399.63	18,874.54	9,420.04	218.26	219.33	-90.70	-9,861.12	231.77	1,680.13	1,243.75	436.38	3.850	
19,300.00	9,398.98	18,974.54	9,419.76	220.34	221.43	-90.71	-9,961.11	232.08	1,680.13	1,239.56	440.57	3.814	
19,400.00	9,398.33	19,074.54	9,419.48	222.42	223.53	-90.72	-10,061.11	232.39	1,680.13	1,235.36	444.77	3.778	
19,500.00	9,397.69	19,174.54	9,419.19	224.50	225.63	-90.73	-10,161.11	232.70	1,680.13	1,231.17	448.97	3.742	
19,600.00	9,397.04	19,274.54	9,418.91	226.59	227.73	-90.75	-10,261.11	233.01	1,680.14	1,226.97	453.17	3.708	
19,700.00	9,396.39	19,374.54	9,418.63	228.68	229.84	-90.76	-10,361.11	233.31	1,680.14	1,222.77	457.37	3.673	
19,800.00	9,395.75	19,474.54	9,418.35	230.77	231.94	-90.77	-10,461.11	233.62	1,680.14	1,218.57	461.58	3.640	
19,900.00	9,395.10	19,574.53	9,418.06	232.86	234.05	-90.78	-10,561.11	233.93	1,680.15	1,214.36	465.78	3.607	
19,915.77	9,395.00	19,590.30	9,418.02	233.19	234.38	-90.78	-10,576.87	233.98	1,680.15	1,213.70	466.45	3.602	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Page 18

COMPASS 5000.1 Build 74

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 5H - OH - Plan 1 12-21-17											Offset Site Error: 0.00 usft		
Survey Program: 0-MWD+HDGM											Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	25.00				
100.00	100.00	100.00	100.00	0.19	0.19	0.00	25.00	0.00	25.00	24.61	0.39	64.574	
200.00	200.00	200.00	200.00	0.73	0.73	0.00	25.00	0.00	25.00	23.54	1.46	17.093	
300.00	300.00	300.00	300.00	1.27	1.27	0.00	25.00	0.00	25.00	22.46	2.54	9.850	
400.00	400.00	400.00	400.00	1.81	1.81	0.00	25.00	0.00	25.00	21.39	3.61	6.919	
500.00	500.00	500.00	500.00	2.34	2.34	0.00	25.00	0.00	25.00	20.31	4.69	5.332	
600.00	600.00	600.00	600.00	2.88	2.88	0.00	25.00	0.00	25.00	19.24	5.76	4.337	
700.00	700.00	700.00	700.00	3.42	3.42	0.00	25.00	0.00	25.00	18.16	6.84	3.655	
800.00	800.00	800.00	800.00	3.96	3.96	0.00	25.00	0.00	25.00	17.08	7.92	3.159	
900.00	900.00	900.00	900.00	4.50	4.50	0.00	25.00	0.00	25.00	16.01	8.99	2.781	
1,000.00	1,000.00	1,000.00	1,000.00	5.03	5.03	0.00	25.00	0.00	25.00	14.93	10.07	2.484	
1,100.00	1,100.00	1,100.00	1,100.00	5.57	5.57	0.00	25.00	0.00	25.00	13.86	11.14	2.244	
1,200.00	1,200.00	1,200.00	1,200.00	6.11	6.11	0.00	25.00	0.00	25.00	12.78	12.22	2.046	
1,300.00	1,300.00	1,300.00	1,300.00	6.65	6.65	0.00	25.00	0.00	25.00	11.71	13.29	1.881	
1,400.00	1,400.00	1,400.00	1,400.00	7.18	7.18	0.00	25.00	0.00	25.00	10.63	14.37	1.740	
1,500.00	1,500.00	1,500.00	1,500.00	7.72	7.72	0.00	25.00	0.00	25.00	9.56	15.44	1.619	
1,600.00	1,600.00	1,600.00	1,600.00	8.26	8.26	0.00	25.00	0.00	25.00	8.48	16.52	1.513	
1,700.00	1,700.00	1,700.00	1,700.00	8.80	8.80	0.00	25.00	0.00	25.00	7.41	17.59	1.421 Level 3	
1,800.00	1,800.00	1,800.00	1,800.00	9.33	9.33	0.01	25.00	0.00	25.00	6.33	18.67	1.339 Level 3	
1,900.00	1,899.98	1,900.37	1,900.35	9.86	9.86	101.41	24.25	-1.59	24.59	4.88	19.71	1.247 Level 2	
2,000.00	1,999.84	2,000.73	2,000.57	10.37	10.36	102.39	22.01	-6.36	23.37	2.64	20.73	1.127 Level 2	
2,100.00	2,099.45	2,101.07	2,100.51	10.88	10.87	104.27	18.27	-14.30	21.35	-0.40	21.75	0.981 Level 1	
2,200.00	2,198.70	2,201.37	2,200.06	11.41	11.39	107.58	13.05	-25.40	18.57	-4.21	22.78	0.815 Level 1	
2,300.00	2,297.47	2,301.63	2,299.07	11.94	11.92	113.55	6.35	-39.63	15.13	-8.68	23.81	0.635 Level 1	
2,400.00	2,395.62	2,401.83	2,397.41	12.49	12.47	125.55	-1.82	-56.99	11.30	-13.47	24.77	0.456 Level 1	
2,500.00	2,493.06	2,501.81	2,494.93	13.06	13.03	153.52	-11.23	-76.98	8.53	-16.90	25.42	0.335 Level 1	
2,503.89	2,496.82	2,505.69	2,498.70	13.09	13.06	155.08	-11.60	-77.77	8.52	-16.92	25.44	0.335 Level 1, CC, ES, SF	
2,600.00	2,589.64	2,601.57	2,592.13	13.66	13.61	-171.94	-20.78	-97.27	11.90	-14.25	26.15	0.455 Level 1	
2,700.00	2,685.27	2,701.13	2,689.13	14.29	14.20	-159.76	-30.32	-117.53	20.69	-6.48	27.17	0.762 Level 1	
2,800.00	2,779.82	2,800.35	2,785.82	14.95	14.80	-157.43	-39.82	-137.72	33.03	4.93	28.10	1.175 Level 2	
2,900.00	2,873.17	2,899.13	2,882.06	15.66	15.41	-157.95	-49.28	-157.82	48.58	19.62	28.96	1.677	
3,000.00	2,965.21	2,997.34	2,977.76	16.42	16.02	-159.26	-58.69	-177.80	67.34	37.57	29.77	2.262	
3,100.00	3,055.84	3,094.86	3,072.78	17.24	16.64	-160.70	-68.03	-197.64	89.34	58.81	30.53	2.926	
3,200.00	3,144.94	3,191.58	3,167.02	18.12	17.25	-162.06	-77.29	-217.32	114.60	83.35	31.25	3.667	
3,300.00	3,232.39	3,287.37	3,260.36	19.07	17.87	-163.29	-86.46	-236.81	143.13	111.19	31.94	4.481	
3,400.00	3,318.33	3,382.26	3,352.81	20.09	18.48	-164.42	-95.55	-256.12	174.53	141.70	32.82	5.317	
3,500.00	3,404.05	3,477.01	3,445.14	21.16	19.10	-165.30	-104.62	-275.40	206.37	172.42	33.95	6.079	
3,600.00	3,489.76	3,571.76	3,537.47	22.27	19.73	-165.95	-113.70	-294.68	238.25	203.15	35.10	6.787	
3,700.00	3,575.48	3,666.51	3,629.79	23.40	20.36	-166.44	-122.77	-313.96	270.15	233.88	36.28	7.447	
3,800.00	3,661.19	3,761.27	3,722.12	24.56	20.99	-166.83	-131.85	-333.24	302.07	264.60	37.46	8.063	
3,900.00	3,746.90	3,856.02	3,814.44	25.74	21.62	-167.15	-140.92	-352.52	333.99	295.32	38.67	8.638	
4,000.00	3,832.62	3,950.77	3,906.77	26.94	22.26	-167.41	-149.99	-371.80	365.92	326.04	39.88	9.176	
4,100.00	3,918.33	4,045.53	3,999.10	28.16	22.90	-167.63	-159.07	-391.07	397.86	356.76	41.10	9.680	
4,200.00	4,004.05	4,140.28	4,091.42	29.39	23.54	-167.81	-168.14	-410.35	429.80	387.47	42.33	10.153	
4,300.00	4,089.76	4,235.03	4,183.75	30.64	24.18	-167.97	-177.22	-429.63	461.75	418.17	43.57	10.597	
4,400.00	4,175.48	4,329.78	4,276.07	31.89	24.83	-168.11	-186.29	-448.91	493.69	448.87	44.82	11.015	
4,500.00	4,261.19	4,424.54	4,368.40	33.16	25.48	-168.24	-195.37	-468.19	525.64	479.57	46.08	11.408	
4,600.00	4,346.91	4,519.29	4,460.73	34.43	26.13	-168.34	-204.44	-487.47	557.60	510.26	47.34	11.780	
4,700.00	4,432.62	4,614.04	4,553.05	35.72	26.78	-168.44	-213.51	-506.75	589.55	540.95	48.60	12.130	
4,800.00	4,518.33	4,708.80	4,645.38	37.01	27.43	-168.53	-222.59	-526.03	621.50	571.63	49.87	12.462	
4,900.00	4,604.83	4,804.02	4,738.16	38.28	28.09	-168.70	-231.71	-545.41	652.02	600.40	51.62	12.632	
5,000.00	4,693.02	4,900.23	4,831.91	39.48	28.76	-168.79	-240.92	-564.98	679.27	625.91	53.35	12.731	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 5H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.00	4,782.80	4,997.32	4,926.51	40.62	29.43	-168.82	-250.22	-584.74	703.20	648.16	55.04	12.776	
5,200.00	4,874.07	5,095.15	5,021.84	41.68	30.11	-168.78	-259.59	-604.64	723.80	667.13	56.67	12.771	
5,300.00	4,966.70	5,193.63	5,117.79	42.69	30.80	-168.68	-269.02	-624.68	741.05	682.80	58.25	12.722	
5,400.00	5,060.59	5,281.06	5,203.07	43.62	31.40	-168.56	-277.22	-642.11	755.38	695.70	59.68	12.657	
5,500.00	5,155.63	5,360.93	5,281.41	44.48	31.93	-168.48	-283.84	-656.18	768.63	707.66	60.97	12.606	
5,600.00	5,251.69	5,440.66	5,360.02	45.28	32.44	-168.44	-289.53	-668.25	781.00	718.83	62.17	12.563	
5,700.00	5,348.66	5,520.26	5,438.83	46.02	32.93	-168.42	-294.27	-678.32	792.46	729.20	63.26	12.526	
5,800.00	5,446.43	5,600.00	5,518.06	46.69	33.39	-168.42	-298.08	-686.42	803.02	738.76	64.26	12.497	
5,900.00	5,544.87	5,679.08	5,596.85	47.30	33.82	-168.46	-300.93	-692.47	812.67	747.52	65.14	12.475	
6,000.00	5,643.86	5,758.31	5,675.95	47.85	34.24	-168.51	-302.86	-696.57	821.39	755.47	65.92	12.460	
6,100.00	5,743.29	5,837.43	5,755.03	48.35	34.63	-168.59	-303.85	-698.68	829.19	762.59	66.60	12.450	
6,200.00	5,843.02	5,925.41	5,843.02	48.79	35.04	-168.69	-304.00	-699.00	835.83	768.63	67.21	12.437	
6,300.00	5,942.95	6,025.34	5,942.95	49.19	35.50	-168.75	-304.00	-699.00	839.46	771.68	67.78	12.385	
6,400.00	6,042.94	6,125.34	6,042.94	49.53	35.96	90.14	-304.00	-699.00	840.00	771.37	68.63	12.240	
6,500.00	6,142.94	6,225.34	6,142.94	49.88	36.42	90.14	-304.00	-699.00	840.00	770.44	69.56	12.075	
6,600.00	6,242.94	6,325.34	6,242.94	50.22	36.88	90.14	-304.00	-699.00	840.00	769.50	70.50	11.915	
6,700.00	6,342.94	6,425.34	6,342.94	50.57	37.35	90.14	-304.00	-699.00	840.00	768.56	71.44	11.758	
6,800.00	6,442.94	6,525.34	6,442.94	50.92	37.81	90.14	-304.00	-699.00	840.00	767.61	72.39	11.604	
6,900.00	6,542.94	6,625.34	6,542.94	51.28	38.28	90.14	-304.00	-699.00	840.00	766.67	73.34	11.454	
7,000.00	6,642.94	6,725.34	6,642.94	51.64	38.75	90.14	-304.00	-699.00	840.00	765.71	74.29	11.307	
7,100.00	6,742.94	6,825.34	6,742.94	52.00	39.23	90.14	-304.00	-699.00	840.00	764.76	75.24	11.164	
7,200.00	6,842.94	6,925.34	6,842.94	52.36	39.70	90.14	-304.00	-699.00	840.00	763.80	76.20	11.023	
7,300.00	6,942.94	7,025.34	6,942.94	52.73	40.18	90.14	-304.00	-699.00	840.00	762.84	77.17	10.886	
7,400.00	7,042.94	7,125.34	7,042.94	53.10	40.65	90.14	-304.00	-699.00	840.00	761.87	78.13	10.751	
7,500.00	7,142.94	7,225.34	7,142.94	53.47	41.13	90.14	-304.00	-699.00	840.00	760.90	79.10	10.620	
7,600.00	7,242.94	7,325.34	7,242.94	53.85	41.61	90.14	-304.00	-699.00	840.00	759.93	80.07	10.491	
7,700.00	7,342.94	7,425.34	7,342.94	54.23	42.10	90.14	-304.00	-699.00	840.00	758.96	81.04	10.365	
7,800.00	7,442.94	7,525.34	7,442.94	54.61	42.58	90.14	-304.00	-699.00	840.00	757.99	82.02	10.242	
7,900.00	7,542.94	7,625.34	7,542.94	54.99	43.06	90.14	-304.00	-699.00	840.00	757.01	82.99	10.121	
8,000.00	7,642.94	7,725.34	7,642.94	55.38	43.55	90.14	-304.00	-699.00	840.00	756.03	83.97	10.003	
8,100.00	7,742.94	7,825.34	7,742.94	55.77	44.04	90.14	-304.00	-699.00	840.00	755.05	84.96	9.887	
8,200.00	7,842.94	7,925.34	7,842.94	56.16	44.52	90.14	-304.00	-699.00	840.00	754.06	85.94	9.774	
8,300.00	7,942.94	8,025.34	7,942.94	56.56	45.01	90.14	-304.00	-699.00	840.00	753.07	86.93	9.663	
8,400.00	8,042.94	8,125.34	8,042.94	56.95	45.50	90.14	-304.00	-699.00	840.00	752.09	87.92	9.555	
8,500.00	8,142.94	8,225.34	8,142.94	57.35	45.99	90.14	-304.00	-699.00	840.00	751.09	88.91	9.448	
8,600.00	8,242.94	8,325.34	8,242.94	57.75	46.49	90.14	-304.00	-699.00	840.00	750.10	89.90	9.344	
8,700.00	8,342.94	8,425.34	8,342.94	58.16	46.98	90.14	-304.00	-699.00	840.00	749.11	90.90	9.241	
8,800.00	8,442.94	8,525.34	8,442.94	58.56	47.48	90.14	-304.00	-699.00	840.00	748.11	91.89	9.141	
8,900.00	8,542.94	8,625.34	8,542.94	58.97	47.97	90.14	-304.00	-699.00	840.00	747.11	92.89	9.043	
9,000.00	8,642.94	8,725.34	8,642.94	59.38	48.47	90.14	-304.00	-699.00	840.00	746.11	93.89	8.947	
9,100.00	8,742.94	8,825.34	8,742.94	59.79	48.96	90.14	-304.00	-699.00	840.00	745.11	94.89	8.852	
9,200.00	8,842.94	8,925.34	8,842.94	60.20	49.46	90.14	-304.00	-699.00	840.00	744.11	95.89	8.760	
9,300.00	8,942.94	9,025.34	8,942.94	60.62	49.96	90.14	-304.00	-699.00	840.00	743.10	96.90	8.669	
9,400.00	9,042.54	9,124.43	9,042.01	61.03	50.45	-89.45	-305.23	-698.98	839.92	742.21	97.71	8.596	
9,482.86	9,123.06	9,206.32	9,123.06	61.37	50.86	-90.00	-316.40	-698.82	839.88	741.37	98.50	8.526	
9,500.00	9,139.32	9,223.40	9,139.71	61.44	50.95	-90.11	-320.18	-698.76	839.88	741.20	98.68	8.511	
9,600.00	9,230.35	9,324.07	9,234.96	61.85	51.48	-90.78	-352.39	-698.29	839.96	740.21	99.75	8.421	
9,700.00	9,312.86	9,426.53	9,324.59	62.24	52.01	-91.43	-401.74	-697.56	840.14	739.23	100.91	8.326	
9,800.00	9,384.34	9,530.78	9,405.30	62.61	52.55	-92.04	-467.50	-696.59	840.41	738.25	102.16	8.226	
9,900.00	9,442.63	9,636.76	9,473.76	62.95	53.10	-92.58	-548.19	-695.40	840.74	737.23	103.51	8.123	
10,000.00	9,485.95	9,744.33	9,526.87	63.28	53.69	-93.05	-641.54	-694.03	841.08	736.13	104.95	8.014	
10,100.00	9,512.99	9,853.25	9,561.94	63.61	54.33	-93.43	-744.48	-692.51	841.39	734.91	106.48	7.902	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 5H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
10,200.00	9,522.91	9,963.23	9,576.97	63.96	55.04	-93.68	-853.24	-690.91	841.62	733.54	108.08	7.787	
10,300.00	9,521.18	10,066.81	9,575.66	64.35	55.78	-93.71	-956.79	-689.39	841.65	732.04	109.60	7.679	
10,400.00	9,519.14	10,166.81	9,573.20	64.79	56.56	-93.68	-1,056.75	-687.92	841.62	730.41	111.21	7.568	
10,500.00	9,517.10	10,266.81	9,570.74	65.30	57.42	-93.66	-1,156.70	-686.44	841.59	728.63	112.96	7.450	
10,600.00	9,515.06	10,366.81	9,568.28	65.87	58.34	-93.63	-1,256.66	-684.97	841.57	726.72	114.84	7.328	
10,700.00	9,513.02	10,466.81	9,565.82	66.50	59.34	-93.60	-1,356.62	-683.50	841.54	724.69	116.85	7.202	
10,800.00	9,510.98	10,566.81	9,563.36	67.20	60.39	-93.57	-1,456.58	-682.03	841.52	722.53	118.99	7.072	
10,900.00	9,508.93	10,666.81	9,560.90	67.97	61.50	-93.54	-1,556.54	-680.56	841.49	720.25	121.24	6.941	
11,000.00	9,506.89	10,766.81	9,558.44	68.81	62.67	-93.51	-1,656.49	-679.08	841.46	717.87	123.60	6.808	
11,100.00	9,504.85	10,866.81	9,555.98	69.71	63.89	-93.48	-1,756.45	-677.61	841.44	715.38	126.06	6.675	
11,200.00	9,502.81	10,966.81	9,553.52	70.68	65.16	-93.46	-1,856.41	-676.14	841.41	712.80	128.62	6.542	
11,300.00	9,500.77	11,066.81	9,551.06	71.71	66.48	-93.43	-1,956.37	-674.67	841.39	710.12	131.27	6.410	
11,400.00	9,498.73	11,166.81	9,548.59	72.80	67.84	-93.40	-2,056.33	-673.20	841.36	707.36	134.01	6.279	
11,500.00	9,496.69	11,266.80	9,546.13	73.95	69.24	-93.37	-2,156.28	-671.72	841.34	704.52	136.82	6.149	
11,600.00	9,494.65	11,366.80	9,543.67	75.16	70.68	-93.34	-2,256.24	-670.25	841.32	701.60	139.72	6.022	
11,700.00	9,492.61	11,466.80	9,541.21	76.41	72.16	-93.31	-2,356.20	-668.78	841.29	698.61	142.68	5.896	
11,800.00	9,490.57	11,566.80	9,538.75	77.72	73.67	-93.28	-2,456.16	-667.31	841.27	695.55	145.72	5.773	
11,900.00	9,488.53	11,666.80	9,536.29	79.07	75.21	-93.26	-2,556.12	-665.84	841.24	692.43	148.81	5.653	
12,000.00	9,486.49	11,766.80	9,533.83	80.46	76.78	-93.23	-2,656.07	-664.36	841.22	689.25	151.97	5.536	
12,100.00	9,484.44	11,866.80	9,531.37	81.89	78.38	-93.20	-2,756.03	-662.89	841.20	686.02	155.18	5.421	
12,200.00	9,482.40	11,966.80	9,528.91	83.36	80.00	-93.17	-2,855.99	-661.42	841.17	682.73	158.44	5.309	
12,300.00	9,480.36	12,066.80	9,526.45	84.86	81.66	-93.14	-2,955.95	-659.95	841.15	679.40	161.75	5.200	
12,400.00	9,478.32	12,166.80	9,523.99	86.40	83.33	-93.11	-3,055.91	-658.48	841.13	676.02	165.11	5.094	
12,500.00	9,476.28	12,266.80	9,521.52	87.96	85.02	-93.08	-3,155.86	-657.00	841.11	672.59	168.51	4.991	
12,600.00	9,474.24	12,366.79	9,519.06	89.55	86.74	-93.06	-3,255.82	-655.53	841.08	669.13	171.96	4.891	
12,700.00	9,472.20	12,466.79	9,516.60	91.17	88.48	-93.03	-3,355.78	-654.06	841.06	665.62	175.44	4.794	
12,800.00	9,470.16	12,566.79	9,514.14	92.82	90.23	-93.00	-3,455.74	-652.59	841.04	662.08	178.96	4.700	
12,900.00	9,468.12	12,666.79	9,511.68	94.48	92.00	-92.97	-3,555.70	-651.12	841.02	658.51	182.51	4.608	
13,000.00	9,466.08	12,766.79	9,509.22	96.17	93.79	-92.94	-3,655.65	-649.65	841.00	654.91	186.09	4.519	
13,100.00	9,464.04	12,866.79	9,506.76	97.88	95.59	-92.91	-3,755.61	-648.17	840.98	651.27	189.71	4.433	
13,200.00	9,461.99	12,966.79	9,504.30	99.61	97.41	-92.88	-3,855.57	-646.70	840.95	647.61	193.35	4.349	
13,300.00	9,459.95	13,066.79	9,501.84	101.36	99.24	-92.86	-3,955.53	-645.23	840.93	643.92	197.02	4.268	
13,400.00	9,457.91	13,166.79	9,499.38	103.12	101.09	-92.83	-4,055.49	-643.76	840.91	640.20	200.71	4.190	
13,500.00	9,455.87	13,266.79	9,496.92	104.90	102.94	-92.80	-4,155.44	-642.29	840.89	636.46	204.43	4.113	
13,600.00	9,453.83	13,366.79	9,494.45	106.70	104.81	-92.77	-4,255.40	-640.81	840.87	632.70	208.18	4.039	
13,700.00	9,451.79	13,466.78	9,491.99	108.50	106.69	-92.74	-4,355.36	-639.34	840.85	628.91	211.94	3.967	
13,800.00	9,449.75	13,566.78	9,489.53	110.33	108.58	-92.71	-4,455.32	-637.87	840.83	625.11	215.73	3.898	
13,900.00	9,447.71	13,666.78	9,487.07	112.16	110.48	-92.68	-4,555.28	-636.40	840.81	621.28	219.53	3.830	
14,000.00	9,445.67	13,766.78	9,484.61	114.01	112.39	-92.66	-4,655.23	-634.93	840.79	617.44	223.35	3.764	
14,100.00	9,443.63	13,866.78	9,482.15	115.87	114.31	-92.63	-4,755.19	-633.45	840.78	613.58	227.19	3.701	
14,200.00	9,441.59	13,966.78	9,479.69	117.74	116.23	-92.60	-4,855.15	-631.98	840.76	609.70	231.05	3.639	
14,300.00	9,439.54	14,066.78	9,477.23	119.62	118.17	-92.57	-4,955.11	-630.51	840.74	605.81	234.93	3.579	
14,400.00	9,437.50	14,166.78	9,474.77	121.51	120.11	-92.54	-5,055.07	-629.04	840.72	601.91	238.81	3.520	
14,500.00	9,435.46	14,266.78	9,472.31	123.41	122.06	-92.51	-5,155.02	-627.57	840.70	597.98	242.72	3.464	
14,600.00	9,433.42	14,366.78	9,469.84	125.32	124.02	-92.48	-5,254.98	-626.09	840.68	594.05	246.63	3.409	
14,700.00	9,431.38	14,466.78	9,467.38	127.24	125.98	-92.46	-5,354.94	-624.62	840.67	590.10	250.56	3.355	
14,800.00	9,429.34	14,566.78	9,464.92	129.16	127.95	-92.43	-5,454.90	-623.15	840.65	586.14	254.51	3.303	
14,838.43	9,428.62	14,605.21	9,463.98	129.90	128.71	-92.41	-5,493.31	-622.58	840.70	584.58	256.12	3.282	
14,900.00	9,427.46	14,669.85	9,462.48	131.09	129.98	-92.39	-5,557.93	-621.68	840.72	581.96	258.75	3.249	
15,000.00	9,426.77	14,775.76	9,461.91	133.03	132.08	-92.40	-5,663.84	-621.17	840.85	577.90	262.95	3.198	
15,100.00	9,426.12	14,875.76	9,461.71	134.98	134.06	-92.43	-5,763.84	-620.86	840.86	573.94	266.92	3.150	
15,200.00	9,425.48	14,975.76	9,461.51	136.93	136.04	-92.46	-5,863.83	-620.56	840.88	569.97	270.91	3.104	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 17 20 FED 001 - 5H - OH - Plan 1 12-21-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,300.00	9,424.83	15,075.76	9,461.31	138.89	138.04	-92.49	-5,963.83	-620.25	840.90	566.00	274.90	3.059	
15,400.00	9,424.18	15,175.75	9,461.11	140.85	140.03	-92.52	-6,063.83	-619.94	840.91	562.01	278.90	3.015	
15,500.00	9,423.54	15,275.75	9,460.91	142.82	142.04	-92.55	-6,163.83	-619.83	840.93	558.02	282.91	2.972	
15,600.00	9,422.89	15,375.75	9,460.70	144.80	144.04	-92.58	-6,263.83	-619.32	840.95	554.01	286.93	2.931	
15,700.00	9,422.25	15,475.75	9,460.50	146.78	146.05	-92.61	-6,363.83	-619.01	840.97	550.00	290.96	2.890	
15,800.00	9,421.60	15,575.75	9,460.30	148.77	148.07	-92.64	-6,463.82	-618.71	840.98	545.99	295.00	2.851	
15,900.00	9,420.95	15,675.75	9,460.10	150.76	150.09	-92.67	-6,563.82	-618.40	841.00	541.96	299.04	2.812	
16,000.00	9,420.31	15,775.75	9,459.90	152.75	152.11	-92.70	-6,663.82	-618.09	841.02	537.93	303.09	2.775	
16,100.00	9,419.66	15,875.75	9,459.70	154.75	154.14	-92.73	-6,763.82	-617.78	841.04	533.89	307.15	2.738	
16,200.00	9,419.01	15,975.75	9,459.50	156.76	156.17	-92.76	-6,863.82	-617.47	841.06	529.84	311.21	2.703	
16,300.00	9,418.37	16,075.75	9,459.29	158.77	158.20	-92.79	-6,963.82	-617.16	841.08	525.79	315.28	2.668	
16,400.00	9,417.72	16,175.75	9,459.09	160.78	160.23	-92.82	-7,063.81	-616.85	841.10	521.74	319.36	2.634	
16,500.00	9,417.08	16,275.74	9,458.89	162.80	162.27	-92.85	-7,163.81	-616.55	841.12	517.67	323.44	2.601	
16,600.00	9,416.43	16,375.74	9,458.69	164.82	164.32	-92.88	-7,263.81	-616.24	841.14	513.61	327.53	2.568	
16,700.00	9,415.78	16,475.74	9,458.49	166.84	166.36	-92.91	-7,363.81	-615.93	841.16	509.53	331.62	2.536	
16,800.00	9,415.14	16,575.74	9,458.29	168.86	168.41	-92.94	-7,463.81	-615.62	841.18	505.45	335.72	2.506	
16,900.00	9,414.49	16,675.74	9,458.08	170.89	170.46	-92.97	-7,563.81	-615.31	841.20	501.37	339.82	2.475	
17,000.00	9,413.84	16,775.74	9,457.88	172.93	172.51	-93.00	-7,663.80	-615.00	841.22	497.28	343.93	2.446	
17,100.00	9,413.20	16,875.74	9,457.68	174.96	174.57	-93.03	-7,763.80	-614.70	841.24	493.19	348.05	2.417	
17,200.00	9,412.55	16,975.74	9,457.48	177.00	176.63	-93.06	-7,863.80	-614.39	841.26	489.10	352.16	2.389	
17,300.00	9,411.91	17,075.74	9,457.28	179.04	178.69	-93.09	-7,963.80	-614.08	841.28	485.00	356.28	2.361	
17,400.00	9,411.26	17,175.74	9,457.08	181.09	180.75	-93.12	-8,063.80	-613.77	841.30	480.89	360.41	2.334	
17,500.00	9,410.61	17,275.73	9,456.88	183.13	182.81	-93.15	-8,163.80	-613.46	841.32	476.79	364.54	2.308	
17,600.00	9,409.97	17,375.73	9,456.67	185.18	184.88	-93.18	-8,263.79	-613.15	841.35	472.67	368.67	2.282	
17,700.00	9,409.32	17,475.73	9,456.47	187.24	186.95	-93.21	-8,363.79	-612.84	841.37	468.56	372.81	2.257	
17,800.00	9,408.67	17,575.73	9,456.27	189.29	189.02	-93.24	-8,463.79	-612.54	841.39	464.44	376.95	2.232	
17,900.00	9,408.03	17,675.73	9,456.07	191.35	191.09	-93.27	-8,563.79	-612.23	841.41	460.32	381.09	2.208	
18,000.00	9,407.38	17,775.73	9,455.87	193.40	193.17	-93.30	-8,663.79	-611.92	841.44	456.20	385.24	2.184	
18,100.00	9,406.73	17,875.73	9,455.67	195.47	195.24	-93.33	-8,763.79	-611.61	841.46	452.07	389.39	2.161	
18,200.00	9,406.09	17,975.73	9,455.46	197.53	197.32	-93.36	-8,863.78	-611.30	841.48	447.94	393.54	2.138	
18,300.00	9,405.44	18,075.73	9,455.26	199.59	199.40	-93.39	-8,963.78	-610.99	841.51	443.81	397.70	2.116	
18,400.00	9,404.80	18,175.73	9,455.06	201.66	201.48	-93.42	-9,063.78	-610.69	841.53	439.67	401.86	2.094	
18,500.00	9,404.15	18,275.72	9,454.86	203.73	203.56	-93.45	-9,163.78	-610.38	841.56	435.53	406.02	2.073	
18,600.00	9,403.50	18,375.72	9,454.66	205.80	205.65	-93.48	-9,263.78	-610.07	841.58	431.39	410.19	2.052	
18,700.00	9,402.86	18,475.72	9,454.46	207.87	207.73	-93.52	-9,363.78	-609.76	841.61	427.25	414.35	2.031	
18,800.00	9,402.21	18,575.72	9,454.26	209.94	209.82	-93.55	-9,463.77	-609.45	841.63	423.11	418.52	2.011	
18,900.00	9,401.56	18,675.72	9,454.05	212.02	211.91	-93.58	-9,563.77	-609.14	841.66	418.96	422.70	1.991	
19,000.00	9,400.92	18,775.72	9,453.85	214.10	214.00	-93.61	-9,663.77	-608.84	841.68	414.81	426.87	1.972	
19,100.00	9,400.27	18,875.72	9,453.65	216.18	216.09	-93.64	-9,763.77	-608.53	841.71	410.66	431.05	1.953	
19,200.00	9,399.63	18,975.72	9,453.45	218.26	218.18	-93.67	-9,863.77	-608.22	841.73	406.51	435.23	1.934	
19,300.00	9,398.98	19,075.72	9,453.25	220.34	220.28	-93.70	-9,963.77	-607.91	841.76	402.35	439.41	1.916	
19,400.00	9,398.33	19,175.72	9,453.05	222.42	222.37	-93.73	-10,063.76	-607.60	841.79	398.19	443.59	1.898	
19,500.00	9,397.69	19,275.71	9,452.85	224.50	224.47	-93.76	-10,163.76	-607.29	841.81	394.04	447.78	1.880	
19,600.00	9,397.04	19,375.71	9,452.64	226.59	226.56	-93.79	-10,263.76	-606.98	841.84	389.88	451.96	1.863	
19,700.00	9,396.39	19,475.71	9,452.44	228.68	228.66	-93.82	-10,363.76	-606.68	841.87	385.71	456.15	1.846	
19,800.00	9,395.75	19,575.71	9,452.24	230.77	230.76	-93.85	-10,463.76	-606.37	841.89	381.55	460.34	1.829	
19,900.00	9,395.10	19,675.71	9,452.04	232.86	232.86	-93.88	-10,563.76	-606.06	841.92	377.39	464.53	1.812	
19,915.77	9,395.00	19,691.48	9,452.01	233.19	233.19	-93.88	-10,579.52	-606.01	841.93	376.73	465.19	1.810	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 13HD - OH / Job #61220 - Surveys (Patterson 815)												Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 497-MWD+HDGM												Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.00	0.00	0.00	0.00	0.00	0.00	-119.31	-508.01	-905.00	1,037.90			
100.00	100.00	93.70	93.70	0.19	0.13	-119.31	-507.93	-904.75	1,037.59	1,037.26	0.33	3,177.760
200.00	200.00	199.16	199.16	0.73	0.33	-119.32	-507.66	-903.88	1,036.74	1,035.68	1.06	977.573
300.00	300.00	303.35	303.34	1.27	0.67	-119.33	-507.16	-902.70	1,035.52	1,033.58	1.94	533.486
400.00	400.00	412.25	412.21	1.81	1.02	-119.38	-506.99	-900.38	1,033.59	1,030.77	2.83	365.796
500.00	500.00	503.13	503.07	2.34	1.20	-119.44	-507.08	-898.40	1,031.74	1,028.19	3.54	291.086
600.00	600.00	610.42	610.33	2.88	1.45	-119.53	-507.54	-895.89	1,029.91	1,025.58	4.34	237.554
700.00	700.00	711.29	711.13	3.42	1.83	-119.69	-508.78	-892.43	1,027.53	1,022.28	5.25	195.721
800.00	800.00	797.19	796.98	3.96	2.21	-119.84	-510.48	-889.78	1,025.85	1,019.69	6.16	166.514
837.70	837.70	825.93	825.70	4.16	2.34	-119.90	-511.22	-889.21	1,025.69	1,019.19	6.50	157.918
900.00	900.00	871.00	870.74	4.50	2.55	-119.97	-512.61	-888.76	1,026.14	1,019.10	7.04	145.835
1,000.00	1,000.00	957.79	957.48	5.03	2.96	-120.11	-515.63	-889.19	1,028.33	1,020.35	7.98	128.827
1,100.00	1,100.00	1,034.81	1,034.43	5.57	3.33	-120.14	-517.65	-891.61	1,032.37	1,023.49	8.88	116.204
1,200.00	1,200.00	1,134.50	1,133.90	6.11	3.80	-119.95	-517.56	-898.10	1,037.97	1,028.06	9.90	104.827
1,300.00	1,300.00	1,234.53	1,233.66	6.65	4.29	-119.67	-515.60	-905.09	1,043.07	1,032.13	10.93	95.413
1,400.00	1,400.00	1,311.80	1,310.68	7.18	4.68	-119.45	-514.38	-911.19	1,049.21	1,037.34	11.86	88.454
1,500.00	1,500.00	1,388.54	1,387.01	7.72	5.08	-119.20	-513.65	-919.12	1,057.74	1,044.94	12.80	82.652
1,600.00	1,600.00	1,472.06	1,469.86	8.26	5.52	-118.88	-512.74	-929.58	1,068.17	1,054.39	13.78	77.518
1,700.00	1,700.00	1,562.78	1,559.72	8.80	6.02	-118.50	-511.56	-942.05	1,079.63	1,064.82	14.81	72.887
1,800.00	1,800.00	1,648.89	1,644.87	9.33	6.50	-118.13	-510.33	-954.75	1,092.00	1,076.17	15.83	68.981
1,900.00	1,899.98	1,724.00	1,718.92	9.86	6.93	-16.62	-509.38	-967.28	1,104.55	1,087.86	16.69	66.164
2,000.00	1,999.84	1,787.90	1,781.61	10.37	7.32	-16.28	-508.97	-979.63	1,116.47	1,098.93	17.54	63.656
2,100.00	2,099.45	1,858.86	1,850.79	10.88	7.76	-15.94	-509.09	-995.43	1,128.08	1,109.67	18.41	61.263
2,200.00	2,198.70	1,948.23	1,937.50	11.41	8.33	-15.55	-509.31	-1,017.10	1,138.27	1,118.89	19.38	58.729
2,300.00	2,297.47	2,059.18	2,045.28	11.94	9.06	-15.16	-509.48	-1,043.39	1,144.62	1,124.16	20.46	55.943
2,400.00	2,395.62	2,160.18	2,143.57	12.49	9.74	-14.90	-509.90	-1,066.61	1,147.11	1,125.64	21.47	53.428
2,500.00	2,493.06	2,258.18	2,238.91	13.06	10.40	-14.70	-510.22	-1,089.32	1,146.37	1,123.92	22.45	51.064
2,600.00	2,589.64	2,356.59	2,334.57	13.66	11.07	-14.54	-510.20	-1,112.43	1,142.42	1,119.00	23.42	48.787
2,700.00	2,685.27	2,447.01	2,422.36	14.29	11.70	-14.44	-510.13	-1,134.03	1,135.46	1,111.14	24.32	46.687
2,800.00	2,779.82	2,534.96	2,507.56	14.95	12.33	-14.39	-510.46	-1,155.86	1,126.18	1,100.99	25.19	44.701
2,900.00	2,873.17	2,629.81	2,599.29	15.66	13.01	-14.40	-511.41	-1,179.97	1,114.36	1,088.27	26.09	42.710
3,000.00	2,965.21	2,729.62	2,695.83	16.42	13.74	-14.48	-512.56	-1,205.28	1,099.21	1,072.21	27.00	40.710
3,100.00	3,055.84	2,823.45	2,786.58	17.24	14.42	-14.62	-513.74	-1,229.11	1,080.80	1,052.94	27.86	38.794
3,200.00	3,144.94	2,921.07	2,880.89	18.12	15.14	-14.83	-515.06	-1,254.31	1,059.51	1,030.78	28.73	36.881
3,300.00	3,232.39	3,018.96	2,975.52	19.07	15.87	-15.13	-516.48	-1,279.28	1,034.70	1,005.12	29.59	34.973
3,400.00	3,318.33	3,111.24	3,064.71	20.09	16.55	-15.42	-517.89	-1,302.92	1,007.20	976.60	30.59	32.921
3,500.00	3,404.05	3,202.43	3,152.71	21.16	17.24	-15.63	-519.21	-1,326.80	979.77	947.96	31.81	30.805
3,600.00	3,489.76	3,294.00	3,240.92	22.27	17.94	-15.83	-520.35	-1,351.34	952.81	919.78	33.04	28.840
3,700.00	3,575.48	3,400.90	3,343.86	23.40	18.76	-16.04	-521.33	-1,380.14	925.90	891.52	34.38	26.931
3,800.00	3,661.19	3,540.97	3,479.97	24.56	19.77	-16.47	-522.04	-1,413.15	895.80	859.86	35.94	24.926
3,900.00	3,746.90	3,648.06	3,584.92	25.74	20.50	-16.96	-522.80	-1,434.43	862.59	825.29	37.30	23.124
4,000.00	3,832.62	3,748.74	3,683.87	26.94	21.17	-17.55	-523.97	-1,452.95	828.38	789.73	38.65	21.434
4,100.00	3,918.33	3,842.63	3,776.26	28.16	21.78	-18.17	-525.12	-1,469.64	793.74	753.77	39.97	19.856
4,200.00	4,004.05	3,946.86	3,878.82	29.39	22.45	-18.93	-526.44	-1,488.15	759.27	717.88	41.39	18.344
4,300.00	4,089.76	4,081.26	4,012.04	30.64	23.26	-20.31	-528.37	-1,505.70	721.10	678.03	43.07	16.744
4,400.00	4,175.48	4,198.75	4,129.20	31.89	23.87	-22.03	-529.76	-1,514.11	678.27	633.56	44.70	15.173
4,500.00	4,261.19	4,286.10	4,216.42	33.16	24.31	-23.61	-531.09	-1,518.55	634.45	588.25	46.20	13.733
4,600.00	4,346.91	4,376.97	4,307.16	34.43	24.77	-25.46	-532.19	-1,523.22	591.00	543.18	47.82	12.359
4,700.00	4,432.62	4,476.93	4,407.03	35.72	25.26	-27.75	-531.93	-1,527.64	546.84	497.21	49.64	11.017
4,800.00	4,518.33	4,563.23	4,493.26	37.01	25.69	-30.05	-531.09	-1,531.02	502.62	451.15	51.47	9.766
4,900.00	4,604.83	4,654.72	4,584.70	38.28	26.13	-32.45	-530.65	-1,533.93	460.21	406.50	53.71	8.569
5,000.00	4,693.02	4,743.21	4,673.17	39.48	26.55	-35.10	-530.87	-1,535.86	421.31	365.32	55.99	7.525

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Phoenix Technology Services LP

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Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	4,782.80	4,833.20	4,763.13	40.62	26.98	-38.11	-531.49	-1,537.70	386.53	328.20	58.33	6.627	
5,200.00	4,874.07	4,930.59	4,860.51	41.68	27.44	-41.67	-531.76	-1,539.35	355.33	294.52	60.81	5.843	
5,300.00	4,966.70	5,029.36	4,959.27	42.69	27.89	-45.59	-530.77	-1,539.86	326.61	263.28	63.33	5.157	
5,400.00	5,060.59	5,123.79	5,053.69	43.62	28.31	-49.60	-529.11	-1,539.61	301.00	235.24	65.76	4.577	
5,500.00	5,155.63	5,218.55	5,148.43	44.48	28.73	-53.83	-527.43	-1,539.30	279.39	211.25	68.14	4.100	
5,600.00	5,251.69	5,314.40	5,244.27	45.28	29.17	-58.15	-525.66	-1,539.20	261.66	191.24	70.42	3.716	
5,700.00	5,348.66	5,410.45	5,340.31	46.02	29.61	-62.36	-523.94	-1,539.39	247.62	175.09	72.53	3.414	
5,800.00	5,446.43	5,508.33	5,438.16	46.69	30.06	-66.38	-522.30	-1,539.82	236.83	162.38	74.45	3.181	
5,900.00	5,544.87	5,605.63	5,535.45	47.30	30.52	-69.97	-520.86	-1,540.26	228.83	152.68	76.14	3.005	
6,000.00	5,643.86	5,704.01	5,633.83	47.85	30.99	-73.08	-519.81	-1,540.66	223.29	145.67	77.63	2.877	
6,100.00	5,743.29	5,802.79	5,732.60	48.35	31.46	-75.51	-519.04	-1,541.10	219.65	140.74	78.91	2.784	
6,200.00	5,843.02	5,902.11	5,831.92	48.79	31.93	-77.21	-518.52	-1,541.35	217.44	137.43	80.01	2.718	
6,300.00	5,942.95	6,001.80	5,931.61	49.19	32.41	-78.07	-518.18	-1,541.62	216.31	135.34	80.97	2.671	
6,400.00	6,042.94	6,101.91	6,031.72	49.53	32.90	-78.97	-517.82	-1,542.08	215.84	134.13	81.72	2.641	
6,500.00	6,142.94	6,201.41	6,131.22	49.88	33.39	-78.97	-517.52	-1,542.87	215.56	133.03	82.53	2.612	
6,522.99	6,165.93	6,224.13	6,153.93	49.96	33.50	-178.91	-517.50	-1,543.10	215.54	132.83	82.71	2.606	
6,600.00	6,242.94	6,299.79	6,229.59	50.22	33.87	-178.68	-517.68	-1,543.97	215.74	132.41	83.33	2.589	
6,700.00	6,342.94	6,397.83	6,327.62	50.57	34.35	-178.41	-518.80	-1,545.03	216.91	132.78	84.13	2.578	
6,800.00	6,442.94	6,496.83	6,426.60	50.92	34.82	-178.23	-520.50	-1,545.75	218.65	133.71	84.94	2.574	
6,900.00	6,542.94	6,595.46	6,525.20	51.28	35.29	-178.08	-522.72	-1,546.40	220.92	135.18	85.75	2.576	
7,000.00	6,642.94	6,694.74	6,624.44	51.64	35.76	-177.99	-525.55	-1,546.86	223.79	137.22	86.57	2.585	
7,100.00	6,742.94	6,795.22	6,724.88	52.00	36.23	-178.01	-528.38	-1,546.86	226.60	139.19	87.41	2.592	
7,200.00	6,842.94	6,895.15	6,824.78	52.36	36.70	-178.12	-531.01	-1,546.53	229.21	140.96	88.26	2.597	
7,300.00	6,942.94	6,995.67	6,925.26	52.73	37.17	-178.26	-533.70	-1,546.05	231.88	142.76	89.11	2.602	
7,400.00	7,042.94	7,096.23	7,025.79	53.10	37.63	-178.47	-536.02	-1,545.25	234.16	144.18	89.98	2.602	
7,500.00	7,142.94	7,194.97	7,124.50	53.47	38.09	-178.76	-538.40	-1,544.12	236.54	145.70	90.85	2.604	
7,600.00	7,242.94	7,294.89	7,224.36	53.85	38.55	-179.12	-541.24	-1,542.66	239.36	147.63	91.73	2.609	
7,700.00	7,342.94	7,395.25	7,324.67	54.23	39.02	-179.62	-543.94	-1,540.59	242.03	149.41	92.62	2.613	
7,800.00	7,442.94	7,497.16	7,426.51	54.61	39.48	-179.78	-546.23	-1,538.06	244.27	150.73	93.54	2.612	
7,900.00	7,542.94	7,598.04	7,527.35	54.99	39.95	-179.21	-547.84	-1,535.62	245.89	151.46	94.44	2.604	
8,000.00	7,642.94	7,697.97	7,627.25	55.38	40.41	-178.67	-549.30	-1,533.24	247.39	152.05	95.34	2.595	
8,100.00	7,742.94	7,799.45	7,728.70	55.77	40.88	-178.18	-550.43	-1,531.12	248.57	152.33	96.24	2.583	
8,200.00	7,842.94	7,899.95	7,829.18	56.16	41.35	-177.86	-551.19	-1,529.67	249.37	152.24	97.13	2.567	
8,300.00	7,942.94	8,000.92	7,930.15	56.56	41.83	-177.60	-551.76	-1,528.54	249.98	151.95	98.03	2.550	
8,400.00	8,042.94	8,103.23	8,032.45	56.95	42.32	-177.42	-551.48	-1,527.76	249.74	150.81	98.93	2.524	
8,500.00	8,142.94	8,203.92	8,133.14	57.35	42.80	-177.24	-550.70	-1,527.02	249.00	149.17	99.83	2.494	
8,600.00	8,242.94	8,304.34	8,233.55	57.75	43.29	-177.13	-549.67	-1,526.59	248.00	147.27	100.73	2.462	
8,700.00	8,342.94	8,404.33	8,333.53	58.16	43.79	-177.08	-548.61	-1,526.42	246.95	145.32	101.63	2.430	
8,800.00	8,442.94	8,504.51	8,433.70	58.56	44.28	-177.08	-547.55	-1,526.47	245.88	143.35	102.54	2.398	
8,900.00	8,542.94	8,604.59	8,533.78	58.97	44.79	-177.14	-546.40	-1,526.80	244.72	141.28	103.44	2.366	
9,000.00	8,642.94	8,704.50	8,633.68	59.38	45.29	-177.25	-545.28	-1,527.32	243.58	139.23	104.35	2.334	
9,100.00	8,742.94	8,804.46	8,733.64	59.79	45.80	-177.40	-544.20	-1,528.01	242.47	137.20	105.26	2.303	
9,200.00	8,842.94	8,903.91	8,833.07	60.20	46.30	-177.61	-543.24	-1,528.91	241.46	135.29	106.17	2.274	
9,300.00	8,942.94	9,003.98	8,933.14	60.62	46.82	-177.85	-542.39	-1,529.99	240.56	133.48	107.09	2.246	
9,400.00	9,042.54	9,103.12	9,032.26	61.03	47.33	-1.06	-541.60	-1,531.24	232.21	125.29	106.92	2.172	
9,500.00	9,139.32	9,208.21	9,137.30	61.44	47.87	-1.00	-538.73	-1,532.19	204.90	101.04	103.86	1.973	
9,600.00	9,230.35	9,296.75	9,225.74	61.85	48.31	-1.21	-534.54	-1,532.72	159.53	61.58	97.95	1.629	
9,700.00	9,312.86	9,382.93	9,311.63	62.24	48.75	-1.66	-527.82	-1,533.71	96.95	7.40	89.55	1.083 Level 2	
9,800.00	9,384.34	9,447.60	9,375.59	62.61	49.07	-9.14	-518.35	-1,534.42	17.46	-61.31	78.78	0.222 Level 1	
9,819.83	9,397.02	9,457.21	9,385.02	62.67	49.11	-90.07	-516.50	-1,534.46	1.38	-97.46	98.84	0.014 Level 1, CC, ES, SF	
9,900.00	9,442.63	9,487.00	9,414.10	62.95	49.26	-176.40	-510.06	-1,534.51	74.17	5.94	68.23	1.087 Level 2	
10,000.00	9,485.95	9,504.14	9,430.73	63.28	49.34	-175.33	-505.89	-1,534.49	171.97	114.73	57.24	3.004	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 13HD - OH / Job #61220 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 497-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)					
10,100.00	9,512.99	9,505.72	9,432.26	63.61	49.35	-4.62	-505.49	-1,534.49	271.82	227.49	44.34	6.131	
10,200.00	9,522.91	9,487.00	9,414.10	63.96	49.26	-0.88	-510.06	-1,534.51	370.67	330.23	40.44	9.167	
10,300.00	9,521.18	9,487.00	9,414.10	64.35	49.26	-0.78	-510.06	-1,534.51	467.56	426.59	40.97	11.413	
10,400.00	9,519.14	9,463.35	9,391.03	64.79	49.14	-0.62	-515.26	-1,534.48	564.63	522.94	41.69	13.545	
10,500.00	9,517.10	9,451.03	9,378.95	65.30	49.08	-0.57	-517.70	-1,534.43	662.22	619.80	42.42	15.611	
10,600.00	9,515.06	9,440.26	9,368.37	65.87	49.03	-0.54	-519.68	-1,534.37	760.12	716.94	43.18	17.603	
10,700.00	9,513.02	9,430.76	9,359.01	66.50	48.98	-0.53	-521.31	-1,534.30	858.28	814.31	43.97	19.520	
10,800.00	9,510.98	9,422.33	9,350.69	67.20	48.94	-0.52	-522.66	-1,534.22	956.64	911.86	44.78	21.362	
10,900.00	9,508.93	9,393.00	9,321.64	67.97	48.80	-0.53	-526.67	-1,533.86	1,055.70	1,010.16	45.54	23.184	
11,000.00	9,506.89	9,393.00	9,321.64	68.81	48.80	-0.53	-526.67	-1,533.86	1,154.10	1,107.68	46.42	24.861	
11,100.00	9,504.85	9,393.00	9,321.64	69.71	48.80	-0.53	-526.67	-1,533.86	1,252.76	1,205.43	47.33	26.470	
11,200.00	9,502.81	9,393.00	9,321.64	70.68	48.80	-0.53	-526.67	-1,533.86	1,351.61	1,303.36	48.25	28.012	
11,300.00	9,500.77	9,393.00	9,321.64	71.71	48.80	-0.53	-526.67	-1,533.86	1,450.62	1,401.43	49.19	29.489	
11,400.00	9,498.73	9,393.00	9,321.64	72.80	48.80	-0.53	-526.67	-1,533.86	1,549.76	1,499.61	50.15	30.904	
11,500.00	9,496.69	9,393.00	9,321.64	73.95	48.80	-0.53	-526.67	-1,533.86	1,649.00	1,597.88	51.12	32.259	
11,600.00	9,494.65	9,393.00	9,321.64	75.16	48.80	-0.53	-526.67	-1,533.86	1,748.33	1,696.23	52.10	33.557	
11,700.00	9,492.61	9,393.00	9,321.64	76.41	48.80	-0.53	-526.67	-1,533.86	1,847.73	1,794.63	53.09	34.801	
11,800.00	9,490.57	9,363.15	9,291.96	77.72	48.65	-0.56	-529.86	-1,533.44	1,946.62	1,892.64	53.98	36.062	
11,900.00	9,488.53	9,358.62	9,287.45	79.07	48.63	-0.56	-530.29	-1,533.39	2,045.96	1,990.99	54.98	37.215	
12,000.00	9,486.49	9,354.35	9,283.20	80.46	48.60	-0.56	-530.67	-1,533.33	2,145.34	2,089.36	55.98	38.320	
12,100.00	9,484.44	9,350.32	9,279.19	81.89	48.58	-0.56	-531.03	-1,533.28	2,244.76	2,187.76	57.00	39.380	
12,200.00	9,482.40	9,346.51	9,275.39	83.36	48.56	-0.56	-531.35	-1,533.24	2,344.21	2,286.18	58.03	40.398	
12,300.00	9,480.36	9,342.90	9,271.79	84.86	48.55	-0.56	-531.64	-1,533.19	2,443.68	2,384.62	59.06	41.375	
12,400.00	9,478.32	9,339.48	9,268.38	86.40	48.53	-0.56	-531.91	-1,533.15	2,543.19	2,483.08	60.10	42.313	
12,500.00	9,476.28	9,336.23	9,265.14	87.96	48.51	-0.57	-532.16	-1,533.12	2,642.72	2,581.56	61.15	43.215	
12,600.00	9,474.24	9,333.14	9,262.06	89.55	48.50	-0.57	-532.39	-1,533.08	2,742.27	2,680.06	62.21	44.083	
12,700.00	9,472.20	9,298.00	9,226.99	91.17	48.32	-0.56	-534.48	-1,532.73	2,842.42	2,779.27	63.15	45.008	
12,800.00	9,470.16	9,298.00	9,226.99	92.82	48.32	-0.56	-534.48	-1,532.73	2,941.91	2,877.68	64.23	45.802	
12,900.00	9,468.12	9,298.00	9,226.99	94.48	48.32	-0.56	-534.48	-1,532.73	3,041.44	2,976.13	65.31	46.568	
13,000.00	9,466.08	9,298.00	9,226.99	96.17	48.32	-0.56	-534.48	-1,532.73	3,141.00	3,074.60	66.40	47.306	
13,100.00	9,464.04	9,298.00	9,226.99	97.88	48.32	-0.56	-534.48	-1,532.73	3,240.58	3,173.09	67.49	48.018	
13,200.00	9,461.99	9,298.00	9,226.99	99.61	48.32	-0.56	-534.48	-1,532.73	3,340.19	3,271.61	68.58	48.704	
13,300.00	9,459.95	9,298.00	9,226.99	101.36	48.32	-0.56	-534.48	-1,532.73	3,439.82	3,370.14	69.68	49.367	
13,400.00	9,457.91	9,298.00	9,226.99	103.12	48.32	-0.56	-534.48	-1,532.73	3,539.47	3,468.69	70.78	50.008	
13,500.00	9,455.87	9,298.00	9,226.99	104.90	48.32	-0.56	-534.48	-1,532.73	3,639.14	3,567.26	71.88	50.626	
13,600.00	9,453.83	9,298.00	9,226.99	106.70	48.32	-0.56	-534.48	-1,532.73	3,738.83	3,665.84	72.99	51.225	
13,700.00	9,451.79	9,298.00	9,226.99	108.50	48.32	-0.56	-534.48	-1,532.73	3,838.53	3,764.44	74.10	51.803	
13,800.00	9,449.75	9,298.00	9,226.99	110.33	48.32	-0.56	-534.48	-1,532.73	3,938.25	3,863.04	75.21	52.363	
13,900.00	9,447.71	9,298.00	9,226.99	112.16	48.32	-0.56	-534.48	-1,532.73	4,037.99	3,961.66	76.33	52.905	
14,000.00	9,445.67	9,298.00	9,226.99	114.01	48.32	-0.56	-534.48	-1,532.73	4,137.73	4,060.29	77.44	53.430	
14,100.00	9,443.63	9,298.00	9,226.99	115.87	48.32	-0.56	-534.48	-1,532.73	4,237.49	4,158.93	78.56	53.939	
14,200.00	9,441.59	9,298.00	9,226.99	117.74	48.32	-0.56	-534.48	-1,532.73	4,337.26	4,257.58	79.68	54.432	
14,300.00	9,439.54	9,293.00	9,222.00	119.62	48.29	-0.56	-534.71	-1,532.68	4,437.04	4,356.25	80.79	54.921	
14,400.00	9,437.50	9,285.37	9,214.37	121.51	48.26	-0.56	-535.06	-1,532.62	4,536.81	4,454.93	81.89	55.403	
14,500.00	9,435.46	9,277.68	9,206.69	123.41	48.22	-0.55	-535.42	-1,532.56	4,636.59	4,553.60	82.99	55.870	
14,600.00	9,433.42	9,269.94	9,198.96	125.32	48.18	-0.55	-535.78	-1,532.50	4,736.36	4,652.27	84.09	56.323	
14,700.00	9,431.38	9,262.16	9,191.19	127.24	48.14	-0.54	-536.15	-1,532.45	4,836.14	4,750.94	85.20	56.764	
14,800.00	9,429.34	9,254.32	9,183.36	129.16	48.10	-0.54	-536.52	-1,532.40	4,935.91	4,849.60	86.30	57.193	
14,900.00	9,427.46	9,246.62	9,175.67	131.09	48.06	6.80	-536.89	-1,532.35	5,035.69	4,942.82	87.40	57.622	
15,000.00	9,426.77	9,240.27	9,169.32	133.03	48.03	11.19	-537.19	-1,532.32	5,135.53	5,036.67	88.50	58.051	
15,100.00	9,426.12	9,233.92	9,162.98	134.98	48.00	10.94	-537.49	-1,532.29	5,235.38	5,135.67	89.60	58.480	
15,200.00	9,425.48	9,227.53	9,156.59	136.93	47.96	10.70	-537.80	-1,532.26	5,335.22	5,234.66	90.70	58.909	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 13HD - OH / Job #61220 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 497-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,300.00	9,424.83	9,221.09	9,150.17	138.89	47.93	10.47	-538.11	-1,532.23	5,435.07	5,333.64	101.43	53.584	
15,400.00	9,424.18	9,214.61	9,143.70	140.85	47.90	10.25	-538.42	-1,532.21	5,534.91	5,432.60	102.31	54.099	
15,500.00	9,423.54	9,208.09	9,137.18	142.82	47.87	10.03	-538.74	-1,532.19	5,634.76	5,531.55	103.20	54.600	
15,600.00	9,422.89	9,204.00	9,133.10	144.80	47.85	9.90	-538.94	-1,532.18	5,734.60	5,630.40	104.20	55.033	
15,700.00	9,422.25	9,204.00	9,133.10	146.78	47.85	9.90	-538.94	-1,532.18	5,834.45	5,729.07	105.37	55.369	
15,800.00	9,421.60	9,204.00	9,133.10	148.77	47.85	9.90	-538.94	-1,532.18	5,934.30	5,827.75	106.55	55.697	
15,900.00	9,420.95	9,204.00	9,133.10	150.76	47.85	9.90	-538.94	-1,532.18	6,034.16	5,926.43	107.72	56.016	
16,000.00	9,420.31	9,204.00	9,133.10	152.75	47.85	9.90	-538.94	-1,532.18	6,134.02	6,025.12	108.90	56.329	
16,100.00	9,419.66	9,204.00	9,133.10	154.75	47.85	9.90	-538.94	-1,532.18	6,233.88	6,123.81	110.07	56.634	
16,200.00	9,419.01	9,204.00	9,133.10	156.76	47.85	9.90	-538.94	-1,532.18	6,333.76	6,222.50	111.25	56.932	
16,300.00	9,418.37	9,204.00	9,133.10	158.77	47.85	9.90	-538.94	-1,532.18	6,433.63	6,321.20	112.43	57.224	
16,400.00	9,417.72	9,204.00	9,133.10	160.78	47.85	9.90	-538.94	-1,532.18	6,533.51	6,419.90	113.61	57.509	
16,500.00	9,417.08	9,204.00	9,133.10	162.80	47.85	9.90	-538.94	-1,532.18	6,633.39	6,518.60	114.79	57.788	
16,600.00	9,416.43	9,204.00	9,133.10	164.82	47.85	9.90	-538.94	-1,532.18	6,733.28	6,617.31	115.97	58.060	
16,700.00	9,415.78	9,204.00	9,133.10	166.84	47.85	9.90	-538.94	-1,532.18	6,833.16	6,716.01	117.15	58.327	
16,800.00	9,415.14	9,204.00	9,133.10	168.86	47.85	9.90	-538.94	-1,532.18	6,933.06	6,814.72	118.34	58.588	
16,900.00	9,414.49	9,204.00	9,133.10	170.89	47.85	9.90	-538.94	-1,532.18	7,032.95	6,913.43	119.52	58.844	
17,000.00	9,413.84	9,204.00	9,133.10	172.93	47.85	9.90	-538.94	-1,532.18	7,132.85	7,012.15	120.70	59.094	
17,100.00	9,413.20	9,204.00	9,133.10	174.96	47.85	9.90	-538.94	-1,532.18	7,232.75	7,110.86	121.89	59.339	
17,200.00	9,412.55	9,204.00	9,133.10	177.00	47.85	9.90	-538.94	-1,532.18	7,332.65	7,209.58	123.08	59.579	
17,300.00	9,411.91	9,204.00	9,133.10	179.04	47.85	9.90	-538.94	-1,532.18	7,432.56	7,308.30	124.26	59.814	
17,400.00	9,411.26	9,204.00	9,133.10	181.09	47.85	9.90	-538.94	-1,532.18	7,532.47	7,407.02	125.45	60.044	
17,500.00	9,410.61	9,204.00	9,133.10	183.13	47.85	9.90	-538.94	-1,532.18	7,632.38	7,505.74	126.64	60.269	
17,600.00	9,409.97	9,204.00	9,133.10	185.18	47.85	9.90	-538.94	-1,532.18	7,732.29	7,604.47	127.83	60.490	
17,700.00	9,409.32	9,204.00	9,133.10	187.24	47.85	9.90	-538.94	-1,532.18	7,832.21	7,703.19	129.02	60.707	
17,800.00	9,408.67	9,204.00	9,133.10	189.29	47.85	9.90	-538.94	-1,532.18	7,932.13	7,801.92	130.21	60.920	
17,900.00	9,408.03	9,204.00	9,133.10	191.35	47.85	9.90	-538.94	-1,532.18	8,032.05	7,900.65	131.40	61.128	
18,000.00	9,407.38	9,204.00	9,133.10	193.40	47.85	9.90	-538.94	-1,532.18	8,131.97	7,999.38	132.59	61.333	
18,100.00	9,406.73	9,204.00	9,133.10	195.47	47.85	9.90	-538.94	-1,532.18	8,231.89	8,098.11	133.78	61.533	
18,200.00	9,406.09	9,204.00	9,133.10	197.53	47.85	9.90	-538.94	-1,532.18	8,331.82	8,196.85	134.97	61.730	
18,300.00	9,405.44	9,204.00	9,133.10	199.59	47.85	9.90	-538.94	-1,532.18	8,431.75	8,295.58	136.16	61.923	
18,400.00	9,404.80	9,204.00	9,133.10	201.66	47.85	9.90	-538.94	-1,532.18	8,531.68	8,394.32	137.36	62.113	
18,500.00	9,404.15	9,204.00	9,133.10	203.73	47.85	9.90	-538.94	-1,532.18	8,631.61	8,493.05	138.55	62.299	
18,600.00	9,403.50	9,204.00	9,133.10	205.80	47.85	9.90	-538.94	-1,532.18	8,731.54	8,591.79	139.75	62.481	
18,700.00	9,402.86	9,204.00	9,133.10	207.87	47.85	9.90	-538.94	-1,532.18	8,831.47	8,690.53	140.94	62.661	
18,800.00	9,402.21	9,204.00	9,133.10	209.94	47.85	9.90	-538.94	-1,532.18	8,931.41	8,789.27	142.14	62.837	
18,900.00	9,401.56	9,204.00	9,133.10	212.02	47.85	9.90	-538.94	-1,532.18	9,031.34	8,888.01	143.33	63.010	
19,000.00	9,400.92	9,204.00	9,133.10	214.10	47.85	9.90	-538.94	-1,532.18	9,131.28	8,986.75	144.53	63.180	
19,100.00	9,400.27	9,165.77	9,094.90	216.18	47.65	8.82	-540.48	-1,531.98	9,230.82	9,086.74	144.08	64.068	
19,200.00	9,399.63	9,165.03	9,094.16	218.26	47.65	8.80	-540.50	-1,531.97	9,330.74	9,185.50	145.24	64.244	
19,300.00	9,398.98	9,164.30	9,093.43	220.34	47.64	8.78	-540.52	-1,531.97	9,430.67	9,284.27	146.40	64.417	
19,400.00	9,398.33	9,163.58	9,092.71	222.42	47.64	8.76	-540.54	-1,531.96	9,530.60	9,383.04	147.56	64.587	
19,500.00	9,397.69	9,162.88	9,092.01	224.50	47.64	8.74	-540.57	-1,531.95	9,630.53	9,481.80	148.73	64.754	
19,600.00	9,397.04	9,162.19	9,091.32	226.59	47.63	8.73	-540.59	-1,531.95	9,730.46	9,580.57	149.89	64.918	
19,700.00	9,396.39	9,161.51	9,090.64	228.68	47.63	8.71	-540.61	-1,531.94	9,830.39	9,679.34	151.05	65.079	
19,800.00	9,395.75	9,160.84	9,089.97	230.77	47.63	8.69	-540.63	-1,531.94	9,930.32	9,778.10	152.22	65.237	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 170-MWD, 497-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-120.50	-533.01	-905.00	1,050.35				
100.00	100.00	91.95	91.95	0.19	0.13	-120.50	-532.93	-904.90	1,050.17	1,049.85	0.32	3,249.230	
200.00	200.00	198.77	198.77	0.73	0.34	-120.49	-532.63	-904.47	1,049.69	1,048.63	1.07	983.731	
300.00	300.00	307.86	307.84	1.27	0.70	-120.51	-532.05	-902.81	1,048.09	1,046.12	1.97	533.103	
400.00	400.00	410.01	409.96	1.81	0.97	-120.61	-532.68	-900.32	1,046.31	1,043.54	2.77	377.466	
500.00	500.00	516.78	516.68	2.34	1.21	-120.73	-533.24	-897.07	1,043.95	1,040.40	3.55	293.758	
600.00	600.00	620.76	620.58	2.88	1.55	-120.88	-534.05	-893.14	1,041.11	1,036.68	4.43	234.754	
700.00	700.00	725.75	725.45	3.42	1.95	-121.09	-535.54	-888.28	1,037.87	1,032.50	5.37	193.252	
800.00	800.00	826.12	825.61	3.96	2.43	-121.38	-538.12	-882.41	1,034.19	1,027.81	6.38	162.041	
900.00	900.00	917.46	916.70	4.50	2.89	-121.71	-541.76	-876.76	1,031.01	1,023.64	7.37	139.819	
1,000.00	1,000.00	1,005.77	1,004.78	5.03	3.35	-122.05	-546.00	-871.93	1,028.89	1,020.53	8.36	123.094	
1,092.30	1,092.30	1,082.45	1,081.30	5.53	3.75	-122.33	-549.79	-868.69	1,028.05	1,018.81	9.24	111.225	
1,100.00	1,100.00	1,088.08	1,086.91	5.57	3.78	-122.35	-550.06	-868.52	1,028.06	1,018.75	9.31	110.395	
1,200.00	1,200.00	1,156.00	1,154.76	6.11	4.13	-122.52	-553.12	-867.72	1,029.59	1,019.40	10.19	101.041	
1,300.00	1,300.00	1,231.68	1,230.36	6.65	4.50	-122.59	-555.88	-869.69	1,033.83	1,022.74	11.09	93.201	
1,400.00	1,400.00	1,299.91	1,298.41	7.18	4.83	-122.56	-558.15	-874.03	1,040.99	1,029.04	11.96	87.046	
1,500.00	1,500.00	1,381.69	1,379.77	7.72	5.23	-122.54	-562.31	-881.19	1,051.01	1,038.11	12.90	81.490	
1,600.00	1,600.00	1,476.54	1,474.12	8.26	5.70	-122.56	-567.82	-889.12	1,061.21	1,047.29	13.92	76.259	
1,700.00	1,700.00	1,561.71	1,558.65	8.80	6.14	-122.70	-575.42	-896.25	1,073.02	1,058.12	14.90	72.014	
1,800.00	1,800.00	1,742.57	1,738.07	9.33	7.14	-123.47	-596.66	-902.51	1,083.11	1,066.70	16.41	66.006	
1,900.00	1,899.98	1,908.45	1,903.44	9.86	8.04	-23.06	-607.85	-897.55	1,082.50	1,064.64	17.86	60.602	
2,000.00	1,999.84	2,081.78	2,076.58	10.37	8.91	-23.35	-604.02	-891.35	1,073.90	1,054.66	19.23	55.834	
2,100.00	2,099.45	2,238.80	2,232.50	10.88	9.69	-23.92	-595.41	-875.15	1,053.97	1,033.46	20.50	51.406	
2,200.00	2,198.70	2,341.64	2,334.31	11.41	10.21	-24.55	-589.03	-862.13	1,029.08	1,007.60	21.48	47.918	
2,300.00	2,297.47	2,441.40	2,432.98	11.94	10.72	-25.32	-582.56	-849.00	1,000.63	978.22	22.41	44.647	
2,400.00	2,395.62	2,537.82	2,528.30	12.49	11.23	-26.30	-576.75	-835.68	969.02	945.70	23.32	41.561	
2,500.00	2,493.06	2,631.87	2,621.23	13.06	11.75	-27.51	-571.68	-822.03	934.43	910.23	24.20	38.618	
2,600.00	2,589.64	2,717.82	2,706.11	13.66	12.23	-28.92	-567.82	-809.11	897.30	872.26	25.04	35.841	
2,700.00	2,685.27	2,797.32	2,784.74	14.29	12.68	-30.47	-564.64	-797.84	858.61	832.76	25.84	33.222	
2,800.00	2,779.82	2,875.77	2,862.49	14.95	13.12	-32.24	-561.92	-787.79	818.83	792.17	26.66	30.709	
2,900.00	2,873.17	2,958.66	2,944.75	15.66	13.59	-34.38	-559.29	-777.94	777.76	750.22	27.55	28.234	
3,000.00	2,965.21	3,040.65	3,026.20	16.42	14.05	-36.85	-556.83	-768.80	735.41	706.93	28.48	25.821	
3,100.00	3,055.84	3,124.64	3,109.68	17.24	14.52	-39.81	-554.40	-759.87	691.92	662.39	29.53	23.435	
3,200.00	3,144.94	3,207.37	3,191.92	18.12	14.98	-43.29	-552.03	-751.24	647.46	616.76	30.70	21.090	
3,300.00	3,232.39	3,290.46	3,274.52	19.07	15.45	-47.45	-549.63	-742.60	602.56	570.48	32.07	18.786	
3,400.00	3,318.33	3,372.37	3,355.90	20.09	15.92	-51.96	-547.20	-733.66	557.95	524.22	33.73	16.543	
3,500.00	3,404.05	3,452.95	3,435.92	21.16	16.37	-56.62	-544.73	-724.49	516.11	480.53	35.58	14.505	
3,600.00	3,489.76	3,531.91	3,514.31	22.27	16.82	-61.77	-542.26	-715.29	478.35	440.80	37.54	12.741	
3,700.00	3,575.48	3,607.21	3,589.15	23.40	17.25	-67.14	-540.05	-707.22	446.24	406.70	39.54	11.286	
3,800.00	3,661.19	3,685.08	3,666.70	24.56	17.68	-72.99	-537.90	-700.65	420.95	379.38	41.57	10.125	
3,900.00	3,746.90	3,767.65	3,749.12	25.74	18.13	-79.32	-535.49	-696.45	402.72	359.14	43.58	9.240	
4,000.00	3,832.62	3,854.40	3,835.81	26.94	18.58	-85.96	-532.53	-695.02	391.10	345.62	45.47	8.601	
4,100.00	3,918.33	3,940.10	3,921.44	28.16	19.01	-92.55	-529.22	-695.07	385.91	338.76	47.15	8.185	
4,120.87	3,936.22	3,957.32	3,938.65	28.42	19.10	-93.88	-528.60	-695.11	385.74	338.27	47.47	8.126 CC, ES	
4,200.00	4,004.05	4,021.99	4,003.29	29.39	19.43	-98.86	-526.51	-695.17	388.15	339.57	48.58	7.990 SF	
4,300.00	4,089.76	4,103.27	4,084.55	30.64	19.84	-104.98	-524.71	-695.02	398.20	348.42	49.78	8.000	
4,400.00	4,175.48	4,190.36	4,171.62	31.89	20.29	-111.21	-522.98	-694.86	414.76	364.03	50.74	8.175	
4,500.00	4,261.19	4,276.90	4,258.14	33.16	20.73	-116.96	-521.09	-694.93	436.65	385.15	51.50	8.479	
4,600.00	4,346.91	4,360.76	4,341.99	34.43	21.16	-122.07	-519.30	-695.00	463.35	411.22	52.13	8.888	
4,700.00	4,432.62	4,447.93	4,429.13	35.72	21.60	-126.88	-517.55	-695.04	494.15	441.49	52.67	9.383	
4,800.00	4,518.33	4,534.62	4,515.81	37.01	22.05	-131.15	-515.69	-695.41	527.91	474.75	53.16	9.930	
4,900.00	4,604.83	4,620.06	4,601.22	38.28	22.48	-135.33	-513.82	-695.77	563.34	509.56	53.79	10.474	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 170-MWD, 497-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	4,693.02	4,708.12	4,689.26	39.48	22.93	-138.96	-512.07	-696.00	598.65	544.15	54.50	10.984	
5,100.00	4,782.80	4,799.56	4,780.68	40.62	23.40	-142.11	-510.07	-696.37	632.79	577.49	55.30	11.443	
5,200.00	4,874.07	4,892.03	4,873.13	41.68	23.88	-144.78	-507.86	-696.91	665.20	609.03	56.17	11.842	
5,300.00	4,966.70	4,987.49	4,968.56	42.69	24.37	-147.05	-505.84	-697.76	695.56	638.45	57.11	12.179	
5,400.00	5,060.59	5,086.23	5,067.27	43.62	24.87	-148.94	-504.27	-699.50	723.09	664.99	58.11	12.445	
5,500.00	5,155.63	5,183.10	5,164.10	44.48	25.36	-150.50	-502.51	-701.55	747.77	688.66	59.11	12.650	
5,600.00	5,251.69	5,280.15	5,261.12	45.28	25.85	-151.78	-501.05	-703.76	769.75	709.62	60.13	12.801	
5,700.00	5,348.66	5,380.66	5,361.58	46.02	26.35	-152.84	-499.92	-706.35	788.75	727.60	61.15	12.899	
5,800.00	5,446.43	5,480.47	5,461.35	46.69	26.86	-153.69	-498.91	-709.38	804.42	742.28	62.14	12.945	
5,900.00	5,544.87	5,580.08	5,560.90	47.30	27.36	-154.36	-497.85	-712.45	817.05	753.95	63.10	12.949	
6,000.00	5,643.86	5,676.41	5,657.19	47.85	27.84	-154.85	-497.16	-715.45	826.65	762.64	64.01	12.915	
6,100.00	5,743.29	5,779.05	5,759.78	48.35	28.36	-155.20	-496.75	-718.52	833.33	768.44	64.90	12.841	
6,200.00	5,843.02	5,884.77	5,865.43	48.79	28.90	-155.41	-496.31	-722.38	836.22	770.47	65.75	12.718	
6,300.00	5,942.95	5,989.06	5,969.62	49.19	29.43	-155.48	-495.78	-726.83	835.32	768.77	66.55	12.551	
6,400.00	6,042.94	6,086.32	6,066.78	49.53	29.92	-154.46	-495.30	-731.06	831.48	763.92	67.56	12.308	
6,500.00	6,142.94	6,177.00	6,157.39	49.88	30.38	-153.49	-494.97	-734.86	827.36	758.91	68.45	12.087	
6,600.00	6,242.94	6,256.54	6,236.89	50.22	30.79	-152.56	-495.51	-736.93	825.10	755.80	69.30	11.907	
6,627.61	6,270.56	6,278.43	6,258.78	50.32	30.90	-152.60	-495.95	-737.07	825.05	755.52	69.53	11.866	
6,700.00	6,342.94	6,350.48	6,330.81	50.57	31.26	-151.72	-497.67	-737.40	825.13	754.90	70.24	11.748	
6,800.00	6,442.94	6,451.55	6,431.84	50.92	31.78	-150.90	-500.29	-737.95	825.23	754.00	71.23	11.586	
6,900.00	6,542.94	6,549.59	6,529.85	51.28	32.28	-149.06	-502.51	-738.39	825.34	753.14	72.20	11.432	
7,000.00	6,642.94	6,646.04	6,626.28	51.64	32.77	-147.21	-504.66	-738.47	825.80	752.64	73.16	11.288	
7,100.00	6,742.94	6,742.74	6,722.95	52.00	33.26	-145.36	-507.03	-738.19	826.69	752.56	74.13	11.152	
7,200.00	6,842.94	6,840.00	6,820.17	52.36	33.76	-143.52	-509.60	-737.48	828.05	752.94	75.10	11.025	
7,300.00	6,942.94	6,935.88	6,916.01	52.73	34.26	-141.68	-512.29	-736.42	829.83	753.75	76.08	10.908	
7,400.00	7,042.94	7,039.71	7,019.79	53.10	34.79	-139.85	-515.11	-735.35	831.52	754.42	77.09	10.786	
7,500.00	7,142.94	7,142.77	7,122.82	53.47	35.33	-137.00	-517.59	-734.69	832.76	754.65	78.11	10.662	
7,600.00	7,242.94	7,241.49	7,221.51	53.85	35.84	-135.15	-519.99	-734.17	833.90	754.80	79.10	10.543	
7,700.00	7,342.94	7,338.63	7,318.62	54.23	36.34	-133.31	-522.51	-733.39	835.36	755.27	80.08	10.431	
7,800.00	7,442.94	7,437.48	7,417.44	54.61	36.85	-131.44	-524.81	-732.35	836.98	755.91	81.08	10.324	
7,900.00	7,542.94	7,533.81	7,513.72	54.99	37.35	-129.57	-527.12	-731.05	838.92	756.87	82.06	10.224	
8,000.00	7,642.94	7,629.68	7,609.54	55.38	37.85	-127.72	-529.85	-729.39	841.35	758.31	83.04	10.132	
8,100.00	7,742.94	7,727.71	7,707.51	55.77	38.37	-125.89	-533.06	-727.42	844.19	760.14	84.04	10.045	
8,200.00	7,842.94	7,829.32	7,809.02	56.16	38.90	-124.06	-536.83	-725.51	847.02	761.94	85.08	9.956	
8,300.00	7,942.94	7,931.84	7,911.46	56.56	39.43	-122.22	-540.64	-723.90	849.56	763.45	86.11	9.866	
8,400.00	8,042.94	8,034.64	8,014.19	56.95	39.97	-120.37	-544.32	-722.55	851.83	764.68	87.15	9.774	
8,500.00	8,142.94	8,138.15	8,117.64	57.35	40.51	-118.53	-547.69	-721.53	853.71	765.51	88.20	9.680	
8,600.00	8,242.94	8,239.69	8,219.13	57.75	41.04	-116.68	-550.67	-720.79	855.26	766.04	89.23	9.585	
8,700.00	8,342.94	8,340.93	8,320.32	58.16	41.57	-114.84	-553.53	-720.14	856.70	766.44	90.26	9.492	
8,800.00	8,442.94	8,441.37	8,420.72	58.56	42.09	-112.99	-556.68	-719.73	858.02	766.74	91.28	9.399	
8,900.00	8,542.94	8,540.71	8,519.99	58.97	42.61	-111.15	-560.32	-719.47	859.36	767.05	92.32	9.309	
9,000.00	8,642.94	8,641.45	8,620.65	59.38	43.14	-109.30	-564.29	-719.29	860.72	767.36	93.36	9.219	
9,100.00	8,742.94	8,740.44	8,719.56	59.79	43.65	-107.46	-568.35	-719.17	862.10	767.70	94.40	9.132	
9,200.00	8,842.94	8,841.67	8,820.69	60.20	44.18	-105.62	-572.77	-719.16	863.47	768.01	95.46	9.046	
9,300.00	8,942.94	8,941.83	8,920.74	60.62	44.70	-103.78	-577.50	-719.41	864.72	768.21	96.51	8.960	
9,400.00	9,042.54	9,042.05	9,020.83	61.03	45.23	-101.94	-582.66	-719.65	863.64	766.84	96.80	8.922	
9,500.00	9,139.32	9,152.31	9,130.98	61.44	45.80	-99.97	-587.30	-720.56	856.24	759.44	96.80	8.846	
9,600.00	9,230.35	9,260.67	9,239.32	61.85	46.36	-97.07	-588.29	-722.28	843.24	746.39	96.85	8.707	
9,700.00	9,312.86	9,336.37	9,314.98	62.24	46.75	-95.12	-586.61	-723.88	827.97	730.66	97.31	8.509	
9,800.00	9,384.34	9,393.00	9,371.60	62.61	47.04	-93.17	-585.61	-723.97	816.47	718.32	98.14	8.319	
9,900.00	9,442.63	9,449.13	9,427.73	62.95	47.34	-91.22	-584.92	-723.58	811.31	712.08	99.23	8.176	
9,914.34	9,449.80	9,456.62	9,435.21	62.99	47.38	-89.71	-584.84	-723.54	811.21	711.83	99.39	8.162	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Surveys (Patterson 815)												Offset Site Error: 0.00 usft
Survey Program: 170-MWD, 497-MWD+HDGM												Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor	
10,000.00	9,485.95	9,494.20	9,472.79	63.28	47.57	-91.75	-584.48	-723.44	814.87	714.62	100.24	8.129
10,100.00	9,512.99	9,521.63	9,500.22	63.61	47.71	-92.14	-584.28	-723.40	829.44	728.35	101.09	8.205
10,200.00	9,522.91	9,531.46	9,510.05	63.96	47.76	-90.10	-584.22	-723.39	855.65	754.05	101.60	8.422
10,300.00	9,521.18	9,529.04	9,507.63	64.35	47.75	-89.28	-584.24	-723.40	892.44	790.30	102.14	8.737
10,400.00	9,519.14	9,526.25	9,504.84	64.79	47.74	-89.09	-584.25	-723.40	938.49	835.63	102.86	9.124
10,500.00	9,517.10	9,523.41	9,502.00	65.30	47.72	-88.89	-584.27	-723.40	992.49	888.85	103.64	9.576
10,600.00	9,515.06	9,520.52	9,499.11	65.87	47.71	-88.68	-584.29	-723.40	1,053.24	948.74	104.50	10.079
10,700.00	9,513.02	9,517.57	9,496.16	66.50	47.69	-88.47	-584.31	-723.40	1,119.63	1,014.22	105.41	10.622
10,800.00	9,510.98	9,514.57	9,493.16	67.20	47.68	-88.26	-584.33	-723.41	1,190.72	1,084.33	106.39	11.192
10,900.00	9,508.93	9,511.51	9,490.10	67.97	47.66	-88.05	-584.35	-723.41	1,265.71	1,158.30	107.42	11.783
11,000.00	9,506.89	9,508.39	9,486.98	68.81	47.64	-87.83	-584.37	-723.41	1,343.96	1,235.46	108.50	12.387
11,100.00	9,504.85	9,505.21	9,483.80	69.71	47.63	-87.60	-584.39	-723.42	1,424.93	1,315.30	109.63	12.997
11,200.00	9,502.81	9,501.97	9,480.57	70.68	47.61	-87.38	-584.42	-723.42	1,508.18	1,397.36	110.82	13.610
11,300.00	9,500.77	9,498.67	9,477.26	71.71	47.59	-87.14	-584.44	-723.43	1,593.35	1,481.31	112.04	14.221
11,400.00	9,498.73	9,495.30	9,473.89	72.80	47.58	-86.91	-584.47	-723.43	1,680.14	1,566.84	113.31	14.828
11,500.00	9,496.69	9,491.87	9,470.46	73.95	47.56	-86.66	-584.50	-723.44	1,768.33	1,653.72	114.61	15.429
11,600.00	9,494.65	9,488.36	9,466.95	75.16	47.54	-86.42	-584.53	-723.45	1,857.71	1,741.76	115.95	16.022
11,700.00	9,492.61	9,484.92	9,463.51	76.41	47.52	-86.18	-584.56	-723.45	1,948.12	1,830.79	117.33	16.604
11,800.00	9,490.57	9,481.46	9,460.05	77.72	47.50	-85.93	-584.60	-723.46	2,039.42	1,920.68	118.73	17.176
11,900.00	9,488.53	9,477.96	9,456.55	79.07	47.49	-85.69	-584.63	-723.47	2,131.49	2,011.32	120.17	17.737
12,000.00	9,486.49	9,474.42	9,453.01	80.46	47.47	-85.44	-584.66	-723.48	2,224.24	2,102.61	121.64	18.286
12,100.00	9,484.44	9,470.84	9,449.43	81.89	47.45	-85.19	-584.70	-723.49	2,317.60	2,194.47	123.13	18.823
12,200.00	9,482.40	9,467.23	9,445.82	83.36	47.43	-84.93	-584.73	-723.50	2,411.48	2,286.84	124.64	19.348
12,300.00	9,480.36	9,463.57	9,442.16	84.86	47.41	-84.68	-584.77	-723.52	2,505.83	2,379.65	126.17	19.860
12,400.00	9,478.32	9,459.87	9,438.46	86.40	47.39	-84.42	-584.81	-723.53	2,600.59	2,472.86	127.73	20.360
12,500.00	9,476.28	9,456.13	9,434.73	87.96	47.37	-84.16	-584.85	-723.55	2,695.74	2,566.43	129.30	20.848
12,600.00	9,474.24	9,452.35	9,430.95	89.55	47.35	-83.89	-584.89	-723.56	2,791.21	2,660.32	130.90	21.324
12,700.00	9,472.20	9,448.53	9,427.12	91.17	47.33	-83.63	-584.93	-723.58	2,886.99	2,754.49	132.50	21.788
12,800.00	9,470.16	9,444.66	9,423.26	92.82	47.31	-83.36	-584.97	-723.60	2,983.04	2,848.92	134.12	22.241
12,900.00	9,468.12	9,440.75	9,419.35	94.48	47.29	-83.08	-585.02	-723.62	3,079.34	2,943.59	135.76	22.683
13,000.00	9,466.08	9,436.80	9,415.39	96.17	47.27	-82.81	-585.06	-723.64	3,175.87	3,038.47	137.40	23.114
13,100.00	9,464.04	9,432.80	9,411.39	97.88	47.25	-82.53	-585.11	-723.67	3,272.60	3,133.54	139.06	23.534
13,200.00	9,461.99	9,428.75	9,407.34	99.61	47.23	-82.25	-585.15	-723.69	3,369.51	3,228.79	140.72	23.944
13,300.00	9,459.95	9,424.65	9,403.25	101.36	47.21	-81.97	-585.20	-723.72	3,466.60	3,324.20	142.40	24.345
13,400.00	9,457.91	9,420.51	9,399.11	103.12	47.19	-81.68	-585.25	-723.75	3,563.85	3,419.77	144.08	24.735
13,500.00	9,455.87	9,416.32	9,394.92	104.90	47.17	-81.39	-585.30	-723.78	3,661.24	3,515.47	145.77	25.117
13,600.00	9,453.83	9,412.08	9,390.67	106.70	47.14	-81.10	-585.36	-723.81	3,758.76	3,611.30	147.46	25.490
13,700.00	9,451.79	9,407.79	9,386.38	108.50	47.12	-80.80	-585.41	-723.84	3,856.41	3,707.25	149.16	25.854
13,800.00	9,449.75	9,403.44	9,382.04	110.33	47.10	-80.50	-585.47	-723.88	3,954.17	3,803.31	150.86	26.211
13,900.00	9,447.71	9,399.04	9,377.64	112.16	47.08	-80.20	-585.53	-723.91	4,052.03	3,899.47	152.57	26.559
14,000.00	9,445.67	9,394.59	9,373.19	114.01	47.05	-79.89	-585.59	-723.95	4,150.00	3,995.72	154.27	26.900
14,100.00	9,443.63	9,389.68	9,368.27	115.87	47.03	-79.56	-585.65	-724.00	4,248.05	4,092.09	155.97	27.237
14,200.00	9,441.59	9,384.31	9,362.91	117.74	47.00	-79.19	-585.73	-724.03	4,346.19	4,188.55	157.64	27.571
14,300.00	9,439.54	9,378.68	9,357.29	119.62	46.97	-78.81	-585.82	-724.06	4,444.41	4,285.11	159.30	27.899
14,400.00	9,437.50	9,372.77	9,351.37	121.51	46.94	-78.41	-585.91	-724.07	4,542.70	4,381.75	160.95	28.224
14,500.00	9,435.46	9,366.55	9,345.15	123.41	46.91	-77.98	-586.02	-724.08	4,641.06	4,478.48	162.59	28.545
14,600.00	9,433.42	9,360.00	9,338.60	125.32	46.87	-77.54	-586.13	-724.06	4,739.49	4,575.28	164.20	28.864
14,700.00	9,431.38	9,353.08	9,331.69	127.24	46.84	-77.08	-586.26	-724.03	4,837.97	4,672.17	165.80	29.180
14,800.00	9,429.34	9,345.78	9,324.39	129.16	46.80	-76.59	-586.41	-723.98	4,936.51	4,769.14	167.37	29.495
14,900.00	9,427.46	9,338.36	9,316.96	131.09	46.76	-76.05	-586.57	-723.91	5,035.12	4,864.27	170.86	29.470
15,000.00	9,426.77	9,332.83	9,311.44	133.03	46.73	-75.68	-586.69	-723.84	5,133.98	4,960.46	173.52	29.588
15,100.00	9,426.12	9,327.05	9,305.66	134.98	46.70	-75.26	-586.82	-723.76	5,232.88	5,057.68	175.20	29.868

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Surveys (Patterson 815)													Offset Site Error:	0.00 usft
Survey Program: 170-MWD, 497-MWD+HDM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
15,200.00	9,425.48	9,320.92	9,299.53	136.93	46.67	-78.81	-586.97	-723.66	5,331.82	5,154.96	176.86	30.147		
15,300.00	9,424.83	9,314.40	9,293.02	138.89	46.64	-78.34	-587.13	-723.53	5,430.79	5,252.29	178.50	30.425		
15,400.00	9,424.18	9,307.45	9,286.07	140.85	46.60	-77.83	-587.31	-723.38	5,529.80	5,349.69	180.11	30.703		
15,500.00	9,423.54	9,300.03	9,278.66	142.82	46.56	-77.30	-587.51	-723.21	5,628.84	5,447.16	181.68	30.982		
15,600.00	9,422.89	9,299.00	9,277.63	144.80	46.56	-77.22	-587.53	-723.18	5,727.91	5,544.31	183.60	31.197		
15,700.00	9,422.25	9,299.00	9,277.63	146.78	46.56	-77.22	-587.53	-723.18	5,827.01	5,641.42	185.59	31.398		
15,800.00	9,421.60	9,299.00	9,277.63	148.77	46.56	-77.22	-587.53	-723.18	5,926.14	5,738.57	187.57	31.594		
15,900.00	9,420.95	9,299.00	9,277.63	150.76	46.56	-77.22	-587.53	-723.18	6,025.30	5,835.74	189.56	31.785		
16,000.00	9,420.31	9,299.00	9,277.63	152.75	46.56	-77.22	-587.53	-723.18	6,124.49	5,932.93	191.56	31.972		
16,100.00	9,419.66	9,299.00	9,277.63	154.75	46.56	-77.22	-587.53	-723.18	6,223.70	6,030.14	193.56	32.155		
16,200.00	9,419.01	9,299.00	9,277.63	156.76	46.56	-77.22	-587.53	-723.18	6,322.94	6,127.38	195.56	32.333		
16,300.00	9,418.37	9,299.00	9,277.63	158.77	46.56	-77.22	-587.53	-723.18	6,422.20	6,224.64	197.56	32.507		
16,400.00	9,417.72	9,299.00	9,277.63	160.78	46.56	-77.22	-587.53	-723.18	6,521.48	6,321.91	199.57	32.678		
16,500.00	9,417.08	9,299.00	9,277.63	162.80	46.56	-77.22	-587.53	-723.18	6,620.79	6,419.21	201.58	32.845		
16,600.00	9,416.43	9,299.00	9,277.63	164.82	46.56	-77.22	-587.53	-723.18	6,720.12	6,516.52	203.59	33.008		
16,700.00	9,415.78	9,299.00	9,277.63	166.84	46.56	-77.22	-587.53	-723.18	6,819.46	6,613.85	205.61	33.167		
16,800.00	9,415.14	9,299.00	9,277.63	168.86	46.56	-77.22	-587.53	-723.18	6,918.83	6,711.20	207.63	33.323		
16,900.00	9,414.49	9,299.00	9,277.63	170.89	46.56	-77.22	-587.53	-723.18	7,018.21	6,808.56	209.65	33.476		
17,000.00	9,413.84	9,299.00	9,277.63	172.93	46.56	-77.22	-587.53	-723.18	7,117.61	6,905.94	211.67	33.626		
17,100.00	9,413.20	9,299.00	9,277.63	174.96	46.56	-77.22	-587.53	-723.18	7,217.03	7,003.33	213.70	33.772		
17,200.00	9,412.55	9,299.00	9,277.63	177.00	46.56	-77.22	-587.53	-723.18	7,316.46	7,100.73	215.73	33.915		
17,300.00	9,411.91	9,299.00	9,277.63	179.04	46.56	-77.22	-587.53	-723.18	7,415.91	7,198.15	217.76	34.056		
17,400.00	9,411.26	9,299.00	9,277.63	181.09	46.56	-77.22	-587.53	-723.18	7,515.37	7,295.58	219.79	34.193		
17,500.00	9,410.61	9,299.00	9,277.63	183.13	46.56	-77.22	-587.53	-723.18	7,614.84	7,393.02	221.82	34.328		
17,600.00	9,409.97	9,299.00	9,277.63	185.18	46.56	-77.22	-587.53	-723.18	7,714.33	7,490.47	223.86	34.460		
17,700.00	9,409.32	9,299.00	9,277.63	187.24	46.56	-77.22	-587.53	-723.18	7,813.84	7,587.94	225.90	34.590		
17,800.00	9,408.67	9,299.00	9,277.63	189.29	46.56	-77.22	-587.53	-723.18	7,913.35	7,685.41	227.94	34.717		
17,900.00	9,408.03	9,299.00	9,277.63	191.35	46.56	-77.22	-587.53	-723.18	8,012.88	7,782.90	229.98	34.841		
18,000.00	9,407.38	9,299.00	9,277.63	193.40	46.56	-77.22	-587.53	-723.18	8,112.42	7,880.40	232.03	34.964		
18,100.00	9,406.73	9,299.00	9,277.63	195.47	46.56	-77.22	-587.53	-723.18	8,211.97	7,977.90	234.07	35.083		
18,200.00	9,406.09	9,299.00	9,277.63	197.53	46.56	-77.22	-587.53	-723.18	8,311.53	8,075.41	236.12	35.201		
18,300.00	9,405.44	9,299.00	9,277.63	199.59	46.56	-77.22	-587.53	-723.18	8,411.10	8,172.94	238.17	35.316		
18,400.00	9,404.80	9,299.00	9,277.63	201.66	46.56	-77.22	-587.53	-723.18	8,510.69	8,270.47	240.22	35.429		
18,500.00	9,404.15	9,299.00	9,277.63	203.73	46.56	-77.22	-587.53	-723.18	8,610.28	8,368.01	242.27	35.540		
18,600.00	9,403.50	9,299.00	9,277.63	205.80	46.56	-77.22	-587.53	-723.18	8,709.88	8,465.56	244.32	35.649		
18,700.00	9,402.86	9,299.00	9,277.63	207.87	46.56	-77.22	-587.53	-723.18	8,809.49	8,563.11	246.38	35.756		
18,800.00	9,402.21	9,299.00	9,277.63	209.94	46.56	-77.22	-587.53	-723.18	8,909.11	8,660.68	248.43	35.862		
18,900.00	9,401.56	9,299.00	9,277.63	212.02	46.56	-77.22	-587.53	-723.18	9,008.73	8,758.25	250.49	35.965		
19,000.00	9,400.92	9,299.00	9,277.63	214.10	46.56	-77.22	-587.53	-723.18	9,108.37	8,855.82	252.55	36.066		
19,100.00	9,400.27	9,299.00	9,277.63	216.18	46.56	-77.22	-587.53	-723.18	9,208.01	8,953.41	254.61	36.166		
19,200.00	9,399.63	9,299.00	9,277.63	218.26	46.56	-77.22	-587.53	-723.18	9,307.66	9,051.00	256.67	36.264		
19,300.00	9,398.98	9,299.00	9,277.63	220.34	46.56	-77.22	-587.53	-723.18	9,407.32	9,148.59	258.73	36.360		
19,400.00	9,398.33	9,299.00	9,277.63	222.42	46.56	-77.22	-587.53	-723.18	9,506.99	9,246.20	260.79	36.455		
19,500.00	9,397.69	9,299.00	9,277.63	224.50	46.56	-77.22	-587.53	-723.18	9,606.66	9,343.80	262.85	36.548		
19,600.00	9,397.04	9,299.00	9,277.63	226.59	46.56	-77.22	-587.53	-723.18	9,706.34	9,441.42	264.92	36.639		
19,700.00	9,396.39	9,299.00	9,277.63	228.68	46.56	-77.22	-587.53	-723.18	9,806.02	9,539.04	266.98	36.729		
19,800.00	9,395.75	9,299.00	9,277.63	230.77	46.56	-77.22	-587.53	-723.18	9,905.72	9,636.66	269.05	36.817		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Page 30

COMPASS 5000.1 Build 74

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - ST01 / Job #61221 - Surveys (Patterson 815)												Offset Site Error:	0.00 usft
Survey Program: 170-MWD, 497-MWD+HDGM, 9131-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	-120.50	-533.01	-905.00	1,050.35				
100.00	100.00	91.95	91.95	0.19	0.13	-120.50	-532.93	-904.90	1,050.17	1,049.85	0.32	3,249.230	
200.00	200.00	198.77	198.77	0.73	0.34	-120.49	-532.63	-904.47	1,049.69	1,048.63	1.07	983.731	
300.00	300.00	307.86	307.84	1.27	0.70	-120.51	-532.05	-902.81	1,048.09	1,046.12	1.97	533.103	
400.00	400.00	410.01	409.96	1.81	0.97	-120.61	-532.68	-900.32	1,046.31	1,043.54	2.77	377.466	
500.00	500.00	516.78	516.68	2.34	1.21	-120.73	-533.24	-897.07	1,043.95	1,040.40	3.55	293.758	
600.00	600.00	620.76	620.58	2.88	1.55	-120.88	-534.05	-893.14	1,041.11	1,036.68	4.43	234.754	
700.00	700.00	725.75	725.45	3.42	1.95	-121.09	-535.54	-888.28	1,037.87	1,032.50	5.37	193.252	
800.00	800.00	826.12	825.61	3.96	2.43	-121.38	-538.12	-882.41	1,034.19	1,027.81	6.38	162.041	
900.00	900.00	917.46	916.70	4.50	2.89	-121.71	-541.76	-876.76	1,031.01	1,023.64	7.37	139.819	
1,000.00	1,000.00	1,005.77	1,004.78	5.03	3.35	-122.05	-546.00	-871.93	1,028.89	1,020.53	8.36	123.094	
1,092.30	1,092.30	1,082.45	1,081.30	5.53	3.75	-122.33	-549.79	-868.69	1,028.05	1,018.81	9.24	111.225	
1,100.00	1,100.00	1,088.08	1,086.91	5.57	3.78	-122.35	-550.06	-868.52	1,028.06	1,018.75	9.31	110.395	
1,200.00	1,200.00	1,156.00	1,154.76	6.11	4.13	-122.52	-553.12	-867.72	1,029.59	1,019.40	10.19	101.041	
1,300.00	1,300.00	1,231.68	1,230.36	6.65	4.50	-122.59	-555.88	-869.69	1,033.83	1,022.74	11.09	93.201	
1,400.00	1,400.00	1,299.91	1,298.41	7.18	4.83	-122.56	-558.15	-874.03	1,040.99	1,029.04	11.96	87.046	
1,500.00	1,500.00	1,381.69	1,379.77	7.72	5.23	-122.54	-562.31	-881.19	1,051.01	1,038.11	12.90	81.490	
1,600.00	1,600.00	1,476.54	1,474.12	8.26	5.70	-122.56	-567.82	-889.12	1,061.21	1,047.29	13.92	76.259	
1,700.00	1,700.00	1,561.71	1,558.65	8.80	6.14	-122.70	-575.42	-896.25	1,073.02	1,058.12	14.90	72.014	
1,800.00	1,800.00	1,742.57	1,738.07	9.33	7.14	-123.47	-596.66	-902.51	1,083.11	1,066.70	16.41	66.006	
1,900.00	1,899.98	1,908.45	1,903.44	9.86	8.04	-23.06	-607.85	-897.55	1,082.50	1,064.64	17.86	60.602	
2,000.00	1,999.84	2,081.78	2,076.58	10.37	8.91	-23.35	-604.02	-891.35	1,073.90	1,054.66	19.23	55.834	
2,100.00	2,099.45	2,238.80	2,232.50	10.88	9.69	-23.92	-595.41	-875.15	1,053.97	1,033.46	20.50	51.406	
2,200.00	2,198.70	2,341.64	2,334.31	11.41	10.21	-24.55	-589.03	-862.13	1,029.08	1,007.60	21.48	47.918	
2,300.00	2,297.47	2,441.40	2,432.98	11.94	10.72	-25.32	-582.56	-849.00	1,000.63	978.22	22.41	44.647	
2,400.00	2,395.62	2,537.82	2,528.30	12.49	11.23	-26.30	-576.75	-835.68	969.02	945.70	23.32	41.561	
2,500.00	2,493.06	2,631.87	2,621.23	13.06	11.75	-27.51	-571.68	-822.03	934.43	910.23	24.20	38.618	
2,600.00	2,589.64	2,717.82	2,706.11	13.66	12.23	-28.92	-567.82	-809.11	897.30	872.26	25.04	35.841	
2,700.00	2,685.27	2,797.32	2,784.74	14.29	12.68	-30.47	-564.64	-797.84	858.61	832.76	25.84	33.222	
2,800.00	2,779.82	2,875.77	2,862.49	14.95	13.12	-32.24	-561.92	-787.79	818.83	792.17	26.66	30.709	
2,900.00	2,873.17	2,958.66	2,944.75	15.66	13.59	-34.38	-559.29	-777.94	777.76	750.22	27.55	28.234	
3,000.00	2,965.21	3,040.65	3,026.20	16.42	14.05	-36.85	-556.83	-768.80	735.41	706.93	28.48	25.821	
3,100.00	3,055.84	3,124.64	3,109.68	17.24	14.52	-39.81	-554.40	-759.87	691.92	662.39	29.53	23.435	
3,200.00	3,144.94	3,207.37	3,191.92	18.12	14.98	-43.29	-552.03	-751.24	647.46	616.76	30.70	21.090	
3,300.00	3,232.39	3,290.46	3,274.52	19.07	15.45	-47.45	-549.63	-742.60	602.56	570.48	32.07	18.786	
3,400.00	3,318.33	3,372.37	3,355.90	20.09	15.92	-51.96	-547.20	-733.66	557.95	524.22	33.73	16.543	
3,500.00	3,404.05	3,452.95	3,435.92	21.16	16.37	-56.62	-544.73	-724.49	516.11	480.53	35.58	14.505	
3,600.00	3,489.76	3,531.91	3,514.31	22.27	16.82	-61.77	-542.26	-715.29	478.35	440.80	37.54	12.741	
3,700.00	3,575.48	3,607.21	3,589.15	23.40	17.25	-67.14	-540.05	-707.22	446.24	406.70	39.54	11.286	
3,800.00	3,661.19	3,685.08	3,666.70	24.56	17.68	-72.99	-537.90	-700.65	420.95	379.38	41.57	10.125	
3,900.00	3,746.90	3,767.65	3,749.12	25.74	18.13	-79.32	-535.49	-696.45	402.72	359.14	43.58	9.240	
4,000.00	3,832.62	3,854.40	3,835.81	26.94	18.58	-85.96	-532.53	-695.02	391.10	345.62	45.47	8.601	
4,100.00	3,918.33	3,940.10	3,921.44	28.16	19.01	-92.55	-529.22	-695.07	385.91	338.76	47.15	8.185	
4,120.87	3,936.22	3,957.32	3,938.65	28.42	19.10	-93.88	-528.60	-695.11	385.74	338.27	47.47	8.126 CC, ES	
4,200.00	4,004.05	4,021.99	4,003.29	29.39	19.43	-98.86	-526.51	-695.17	388.15	339.57	48.58	7.990 SF	
4,300.00	4,089.76	4,103.27	4,084.55	30.64	19.84	-104.98	-524.71	-695.02	398.20	348.42	49.78	8.000	
4,400.00	4,175.48	4,190.36	4,171.62	31.89	20.29	-111.21	-522.98	-694.86	414.76	364.03	50.74	8.175	
4,500.00	4,261.19	4,276.90	4,258.14	33.16	20.73	-116.96	-521.09	-694.93	436.65	385.15	51.50	8.479	
4,600.00	4,346.91	4,360.76	4,341.99	34.43	21.16	-122.07	-519.30	-695.00	463.35	411.22	52.13	8.888	
4,700.00	4,432.62	4,447.93	4,429.13	35.72	21.60	-126.88	-517.55	-695.04	494.15	441.49	52.67	9.383	
4,800.00	4,518.33	4,534.62	4,515.81	37.01	22.05	-131.15	-515.69	-695.41	527.91	474.75	53.16	9.930	
4,900.00	4,604.83	4,620.06	4,601.22	38.28	22.48	-135.33	-513.82	-695.77	563.34	509.56	53.79	10.474	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - ST01 / Job #61221 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 170-MWD, 497-MWD+HDGM, 9131-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
5,000.00	4,693.02	4,708.12	4,689.26	39.48	22.93	-138.96	-512.07	-696.00	598.65	544.15	54.50	10.984	
5,100.00	4,782.80	4,799.56	4,780.68	40.62	23.40	-142.11	-510.07	-696.37	632.79	577.49	55.30	11.443	
5,200.00	4,874.07	4,892.03	4,873.13	41.68	23.88	-144.78	-507.86	-696.91	665.20	609.03	56.17	11.842	
5,300.00	4,966.70	4,987.49	4,968.56	42.69	24.37	-147.05	-505.84	-697.76	695.56	638.45	57.11	12.179	
5,400.00	5,060.59	5,086.23	5,067.27	43.62	24.87	-148.94	-504.27	-699.50	723.09	664.99	58.11	12.445	
5,500.00	5,155.63	5,183.10	5,164.10	44.48	25.36	-150.50	-502.51	-701.55	747.77	688.66	59.11	12.650	
5,600.00	5,251.69	5,280.15	5,261.12	45.28	25.85	-151.78	-501.05	-703.76	769.75	709.62	60.13	12.801	
5,700.00	5,348.66	5,380.66	5,361.58	46.02	26.35	-152.84	-499.92	-706.35	788.75	727.60	61.15	12.899	
5,800.00	5,446.43	5,480.47	5,461.35	46.69	26.86	-153.69	-498.91	-709.38	804.42	742.28	62.14	12.945	
5,900.00	5,544.87	5,580.08	5,560.90	47.30	27.36	-154.36	-497.85	-712.45	817.05	753.95	63.10	12.949	
6,000.00	5,643.86	5,676.41	5,657.19	47.85	27.84	-154.85	-497.16	-715.45	826.65	762.64	64.01	12.915	
6,100.00	5,743.29	5,779.05	5,759.78	48.35	28.36	-155.20	-496.75	-718.52	833.33	768.44	64.90	12.841	
6,200.00	5,843.02	5,884.77	5,865.43	48.79	28.90	-155.41	-496.31	-722.38	836.22	770.47	65.75	12.718	
6,300.00	5,942.95	5,989.06	5,969.62	49.19	29.43	-155.48	-495.78	-726.83	835.32	768.77	66.55	12.551	
6,400.00	6,042.94	6,086.32	6,066.78	49.53	29.92	103.46	-495.30	-731.06	831.48	763.92	67.56	12.308	
6,500.00	6,142.94	6,177.00	6,157.39	49.88	30.38	103.49	-494.97	-734.86	827.36	758.91	68.45	12.087	
6,600.00	6,242.94	6,256.54	6,236.89	50.22	30.79	103.56	-495.51	-736.93	825.10	755.80	69.30	11.907	
6,627.61	6,270.56	6,278.43	6,258.78	50.32	30.90	103.60	-495.95	-737.07	825.05	755.52	69.53	11.866	
6,700.00	6,342.94	6,350.48	6,330.81	50.57	31.26	103.72	-497.67	-737.40	825.13	754.90	70.24	11.748	
6,800.00	6,442.94	6,451.55	6,431.84	50.92	31.78	103.90	-500.29	-737.95	825.23	754.00	71.23	11.586	
6,900.00	6,542.94	6,549.59	6,529.85	51.28	32.28	104.06	-502.51	-738.39	825.34	753.14	72.20	11.432	
7,000.00	6,642.94	6,646.04	6,626.28	51.64	32.77	104.21	-504.66	-738.47	825.80	752.64	73.16	11.288	
7,100.00	6,742.94	6,742.74	6,722.95	52.00	33.26	104.36	-507.03	-738.19	826.69	752.56	74.13	11.152	
7,200.00	6,842.94	6,840.00	6,820.17	52.36	33.76	104.52	-509.60	-737.48	828.05	752.94	75.10	11.025	
7,300.00	6,942.94	6,935.88	6,916.01	52.73	34.26	104.68	-512.29	-736.42	829.83	753.75	76.08	10.908	
7,400.00	7,042.94	7,039.71	7,019.79	53.10	34.79	104.85	-515.11	-735.35	831.52	754.42	77.09	10.786	
7,500.00	7,142.94	7,142.77	7,122.82	53.47	35.33	105.00	-517.59	-734.69	832.76	754.65	78.11	10.662	
7,600.00	7,242.94	7,241.49	7,221.51	53.85	35.84	105.15	-519.99	-734.17	833.90	754.80	79.10	10.543	
7,700.00	7,342.94	7,338.63	7,318.62	54.23	36.34	105.31	-522.51	-733.39	835.36	755.27	80.08	10.431	
7,800.00	7,442.94	7,437.48	7,417.44	54.61	36.85	105.44	-524.81	-732.35	836.98	755.91	81.08	10.324	
7,900.00	7,542.94	7,533.81	7,513.72	54.99	37.35	105.57	-527.12	-731.05	838.92	756.87	82.06	10.224	
8,000.00	7,642.94	7,629.68	7,609.54	55.38	37.85	105.72	-529.85	-729.39	841.35	758.31	83.04	10.132	
8,100.00	7,742.94	7,727.71	7,707.51	55.77	38.37	105.89	-533.06	-727.42	844.19	760.14	84.04	10.045	
8,200.00	7,842.94	7,829.32	7,809.02	56.16	38.90	106.10	-536.83	-725.51	847.02	761.94	85.08	9.956	
8,300.00	7,942.94	7,931.84	7,911.46	56.56	39.43	106.32	-540.64	-723.90	849.56	763.45	86.11	9.866	
8,400.00	8,042.94	8,034.64	8,014.19	56.95	39.97	106.53	-544.32	-722.55	851.83	764.68	87.15	9.774	
8,500.00	8,142.94	8,138.15	8,117.64	57.35	40.51	106.73	-547.69	-721.53	853.71	765.51	88.20	9.680	
8,600.00	8,242.94	8,239.69	8,219.13	57.75	41.04	106.90	-550.67	-720.79	855.26	766.04	89.23	9.585	
8,700.00	8,342.94	8,340.93	8,320.32	58.16	41.57	107.08	-553.53	-720.14	856.70	766.44	90.26	9.492	
8,800.00	8,442.94	8,441.37	8,420.72	58.56	42.09	107.27	-556.68	-719.73	858.02	766.74	91.28	9.399	
8,900.00	8,542.94	8,540.71	8,519.99	58.97	42.61	107.50	-560.32	-719.47	859.36	767.05	92.32	9.309	
9,000.00	8,642.94	8,641.45	8,620.65	59.38	43.14	107.74	-564.29	-719.29	860.72	767.36	93.36	9.219	
9,100.00	8,742.94	8,740.44	8,719.56	59.79	43.65	108.00	-568.35	-719.17	862.10	767.70	94.40	9.132	
9,200.00	8,842.94	8,841.67	8,820.69	60.20	44.18	108.28	-572.77	-719.16	863.47	768.01	95.46	9.046	
9,300.00	8,942.94	8,941.83	8,920.74	60.62	44.70	108.58	-577.50	-719.41	864.72	768.21	96.51	8.960	
9,400.00	9,042.54	9,040.66	9,019.45	61.03	45.16	-70.86	-582.26	-719.51	863.66	766.94	96.73	8.929	
9,500.00	9,139.32	9,144.30	9,122.91	61.44	45.40	-73.42	-578.23	-717.02	857.00	760.66	96.34	8.895	
9,600.00	9,230.35	9,254.26	9,231.74	61.85	45.42	-78.42	-562.96	-714.02	845.10	749.24	95.86	8.816	
9,700.00	9,312.86	9,328.23	9,304.75	62.24	45.43	-83.06	-551.21	-712.48	833.26	737.22	96.03	8.677	
9,800.00	9,384.34	9,393.64	9,369.42	62.61	45.45	-87.42	-541.45	-711.48	825.58	728.93	96.65	8.542	
9,853.84	9,417.49	9,422.80	9,398.29	62.79	45.46	-89.30	-537.35	-711.18	824.33	727.27	97.06	8.493	
9,900.00	9,442.63	9,443.57	9,418.86	62.95	45.46	-90.51	-534.49	-711.01	825.35	727.96	97.39	8.474	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SQ 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - ST01 / Job #61221 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 170-MWD, 497-MWD+HDGM, 9131-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
10,000.00	9,485.95	9,476.41	9,451.40	63.28	45.47	-91.67	-530.04	-710.81	835.29	737.19	98.10	8.515	
10,100.00	9,512.99	9,491.48	9,466.34	63.61	45.48	-90.51	-528.03	-710.74	856.61	757.94	98.67	8.682	
10,200.00	9,522.91	9,487.84	9,462.73	63.96	45.48	-86.87	-528.52	-710.75	888.72	790.07	98.65	9.009	
10,300.00	9,521.18	9,471.29	9,446.32	64.35	45.47	-84.97	-530.73	-710.83	929.97	831.16	98.81	9.412	
10,400.00	9,519.14	9,454.08	9,429.27	64.79	45.47	-83.80	-533.05	-710.94	979.44	880.25	99.19	9.874	
10,500.00	9,517.10	9,436.54	9,411.90	65.30	45.46	-82.62	-535.45	-711.07	1,035.96	936.36	99.59	10.402	
10,600.00	9,515.06	9,418.66	9,394.19	65.87	45.46	-81.41	-537.92	-711.22	1,098.43	998.42	100.02	10.982	
10,700.00	9,513.02	9,398.22	9,373.96	66.50	45.45	-80.04	-540.79	-711.42	1,165.90	1,065.50	100.40	11.613	
10,800.00	9,510.98	9,376.05	9,352.02	67.20	45.44	-78.57	-543.99	-711.70	1,237.48	1,136.75	100.73	12.285	
10,900.00	9,508.93	9,352.73	9,328.96	67.97	45.44	-77.04	-547.46	-712.05	1,312.50	1,211.47	101.03	12.991	
11,000.00	9,506.89	9,328.17	9,304.70	68.81	45.43	-75.44	-551.22	-712.48	1,390.38	1,289.10	101.28	13.728	
11,100.00	9,504.85	9,306.53	9,283.32	69.71	45.43	-74.05	-554.61	-712.91	1,470.64	1,369.01	101.64	14.470	
11,200.00	9,502.81	9,286.41	9,263.47	70.68	45.42	-72.78	-557.80	-713.33	1,552.97	1,450.91	102.06	15.217	
11,300.00	9,500.77	9,265.99	9,243.31	71.71	45.42	-71.50	-561.07	-713.77	1,637.05	1,534.57	102.48	15.975	
11,400.00	9,498.73	9,245.24	9,222.83	72.80	45.41	-70.21	-564.42	-714.22	1,722.61	1,619.72	102.89	16.743	
11,500.00	9,496.69	9,225.00	9,202.87	73.95	45.41	-68.98	-567.71	-714.68	1,809.44	1,706.12	103.33	17.512	
11,600.00	9,494.65	9,225.00	9,202.87	75.16	45.41	-68.98	-567.71	-714.68	1,897.48	1,792.79	104.69	18.124	
11,700.00	9,492.61	9,225.00	9,202.87	76.41	45.41	-68.98	-567.71	-714.68	1,986.65	1,880.55	106.10	18.725	
11,800.00	9,490.57	9,225.00	9,202.87	77.72	45.41	-68.98	-567.71	-714.68	2,076.80	1,969.27	107.54	19.313	
11,900.00	9,488.53	9,196.00	9,174.22	79.07	45.41	-67.25	-572.11	-715.40	2,167.33	2,059.67	107.65	20.133	
12,000.00	9,486.49	9,189.95	9,168.23	80.46	45.41	-66.89	-572.94	-715.57	2,258.88	2,150.03	108.85	20.751	
12,100.00	9,484.44	9,184.27	9,162.60	81.89	45.40	-66.55	-573.69	-715.73	2,351.09	2,240.99	110.10	21.355	
12,200.00	9,482.40	9,178.92	9,157.30	83.36	45.40	-66.24	-574.37	-715.89	2,443.88	2,332.50	111.38	21.942	
12,300.00	9,480.36	9,173.88	9,152.30	84.86	45.40	-65.94	-574.99	-716.05	2,537.18	2,424.49	112.69	22.514	
12,400.00	9,478.32	9,169.12	9,147.57	86.40	45.40	-65.66	-575.56	-716.19	2,630.95	2,516.91	114.04	23.070	
12,500.00	9,476.28	9,164.61	9,143.10	87.96	45.40	-65.40	-576.08	-716.34	2,725.14	2,609.72	115.42	23.611	
12,600.00	9,474.24	9,131.00	9,109.68	89.55	45.40	-63.47	-579.44	-717.51	2,820.19	2,704.91	115.28	24.464	
12,700.00	9,472.20	9,131.00	9,109.68	91.17	45.40	-63.47	-579.44	-717.51	2,914.98	2,798.06	116.91	24.933	
12,800.00	9,470.16	9,131.00	9,109.68	92.82	45.40	-63.47	-579.44	-717.51	3,010.10	2,891.54	118.56	25.389	
12,900.00	9,468.12	9,131.00	9,109.68	94.48	45.40	-63.47	-579.44	-717.51	3,105.53	2,985.31	120.23	25.831	
13,000.00	9,466.08	9,131.00	9,109.68	96.17	45.40	-63.47	-579.44	-717.51	3,201.24	3,079.34	121.91	26.260	
13,100.00	9,464.04	9,131.00	9,109.68	97.88	45.40	-63.47	-579.44	-717.51	3,297.21	3,173.61	123.60	26.676	
13,200.00	9,461.99	9,131.00	9,109.68	99.61	45.40	-63.47	-579.44	-717.51	3,393.41	3,268.10	125.31	27.080	
13,300.00	9,459.95	9,131.00	9,109.68	101.36	45.40	-63.47	-579.44	-717.51	3,489.82	3,362.79	127.03	27.472	
13,400.00	9,457.91	9,131.00	9,109.68	103.12	45.40	-63.47	-579.44	-717.51	3,586.43	3,457.66	128.77	27.852	
13,500.00	9,455.87	9,131.00	9,109.68	104.90	45.40	-63.47	-579.44	-717.51	3,683.22	3,552.71	130.51	28.221	
13,600.00	9,453.83	9,131.00	9,109.68	106.70	45.40	-63.47	-579.44	-717.51	3,780.17	3,647.91	132.27	28.580	
13,700.00	9,451.79	9,131.00	9,109.68	108.50	45.40	-63.47	-579.44	-717.51	3,877.29	3,743.25	134.03	28.928	
13,800.00	9,449.75	9,131.00	9,109.68	110.33	45.40	-63.47	-579.44	-717.51	3,974.54	3,838.73	135.81	29.266	
13,900.00	9,447.71	9,131.00	9,109.68	112.16	45.40	-63.47	-579.44	-717.51	4,071.93	3,934.33	137.59	29.594	
14,000.00	9,445.67	9,131.00	9,109.68	114.01	45.40	-63.47	-579.44	-717.51	4,169.44	4,030.05	139.39	29.913	
14,100.00	9,443.63	9,131.00	9,109.68	115.87	45.40	-63.47	-579.44	-717.51	4,267.07	4,125.88	141.19	30.223	
14,200.00	9,441.59	9,131.00	9,109.68	117.74	45.40	-63.47	-579.44	-717.51	4,364.80	4,221.80	143.00	30.524	
14,300.00	9,439.54	9,131.00	9,109.68	119.62	45.40	-63.47	-579.44	-717.51	4,462.63	4,317.82	144.81	30.817	
14,400.00	9,437.50	9,131.00	9,109.68	121.51	45.40	-63.47	-579.44	-717.51	4,560.56	4,413.93	146.63	31.102	
14,500.00	9,435.46	9,131.00	9,109.68	123.41	45.40	-63.47	-579.44	-717.51	4,658.58	4,510.11	148.46	31.379	
14,600.00	9,433.42	9,131.00	9,109.68	125.32	45.40	-63.47	-579.44	-717.51	4,756.68	4,606.38	150.30	31.648	
14,700.00	9,431.38	9,131.00	9,109.68	127.24	45.40	-63.47	-579.44	-717.51	4,854.85	4,702.71	152.14	31.911	
14,800.00	9,429.34	9,131.00	9,109.68	129.16	45.40	-63.47	-579.44	-717.51	4,953.10	4,799.12	153.99	32.166	
14,900.00	9,427.46	9,131.00	9,109.68	131.09	45.40	-65.05	-579.44	-717.51	5,051.45	4,893.61	157.84	32.003	
15,000.00	9,426.77	9,131.00	9,109.68	133.03	45.40	-65.95	-579.44	-717.51	5,150.11	4,989.30	160.81	32.027	
15,100.00	9,426.12	9,131.00	9,109.68	134.98	45.40	-65.95	-579.44	-717.51	5,248.82	5,086.13	162.69	32.263	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 14HD - ST01 / Job #61221 - Surveys (Patterson 815)												Offset Site Error:	0.00 usft
Survey Program: 170-MWD, 497-MWD+HDGM, 9131-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
15,200.00	9,425.48	9,131.00	9,109.68	136.93	45.40	-65.95	-579.44	-717.51	5,347.58	5,183.01	164.57	32.494	
15,300.00	9,424.83	9,131.00	9,109.68	138.89	45.40	-65.95	-579.44	-717.51	5,446.38	5,279.92	166.46	32.719	
15,400.00	9,424.18	9,131.00	9,109.68	140.85	45.40	-65.95	-579.44	-717.51	5,545.23	5,376.88	168.35	32.938	
15,500.00	9,423.54	9,131.00	9,109.68	142.82	45.40	-65.95	-579.44	-717.51	5,644.12	5,473.87	170.25	33.152	
15,600.00	9,422.89	9,131.00	9,109.68	144.80	45.40	-65.95	-579.44	-717.51	5,743.05	5,570.90	172.15	33.360	
15,700.00	9,422.25	9,131.00	9,109.68	146.78	45.40	-65.95	-579.44	-717.51	5,842.01	5,667.95	174.06	33.564	
15,800.00	9,421.60	9,131.00	9,109.68	148.77	45.40	-65.95	-579.44	-717.51	5,941.01	5,765.04	175.97	33.762	
15,900.00	9,420.95	9,131.00	9,109.68	150.76	45.40	-65.95	-579.44	-717.51	6,040.04	5,862.16	177.88	33.956	
16,000.00	9,420.31	9,131.00	9,109.68	152.75	45.40	-65.95	-579.44	-717.51	6,139.10	5,959.31	179.79	34.145	
16,100.00	9,419.66	9,131.00	9,109.68	154.75	45.40	-65.95	-579.44	-717.51	6,238.20	6,056.48	181.71	34.330	
16,200.00	9,419.01	9,131.00	9,109.68	156.76	45.40	-65.95	-579.44	-717.51	6,337.32	6,153.68	183.63	34.511	
16,300.00	9,418.37	9,131.00	9,109.68	158.77	45.40	-65.95	-579.44	-717.51	6,436.47	6,250.91	185.56	34.687	
16,400.00	9,417.72	9,131.00	9,109.68	160.78	45.40	-65.95	-579.44	-717.51	6,535.64	6,348.15	187.49	34.859	
16,500.00	9,417.08	9,131.00	9,109.68	162.80	45.40	-65.95	-579.44	-717.51	6,634.84	6,445.42	189.42	35.028	
16,600.00	9,416.43	9,131.00	9,109.68	164.82	45.40	-65.95	-579.44	-717.51	6,734.06	6,542.71	191.35	35.193	
16,700.00	9,415.78	9,131.00	9,109.68	166.84	45.40	-65.95	-579.44	-717.51	6,833.31	6,640.02	193.28	35.354	
16,800.00	9,415.14	9,131.00	9,109.68	168.86	45.40	-65.95	-579.44	-717.51	6,932.57	6,737.35	195.22	35.512	
16,900.00	9,414.49	9,131.00	9,109.68	170.89	45.40	-65.95	-579.44	-717.51	7,031.86	6,834.70	197.16	35.666	
17,000.00	9,413.84	9,131.00	9,109.68	172.93	45.40	-65.95	-579.44	-717.51	7,131.17	6,932.07	199.10	35.817	
17,100.00	9,413.20	9,131.00	9,109.68	174.96	45.40	-65.95	-579.44	-717.51	7,230.50	7,029.45	201.05	35.965	
17,200.00	9,412.55	9,131.00	9,109.68	177.00	45.40	-65.95	-579.44	-717.51	7,329.84	7,126.85	202.99	36.109	
17,300.00	9,411.91	9,131.00	9,109.68	179.04	45.40	-65.95	-579.44	-717.51	7,429.20	7,224.27	204.94	36.251	
17,400.00	9,411.26	9,131.00	9,109.68	181.09	45.40	-65.95	-579.44	-717.51	7,528.58	7,321.70	206.89	36.389	
17,500.00	9,410.61	9,131.00	9,109.68	183.13	45.40	-65.95	-579.44	-717.51	7,627.98	7,419.14	208.84	36.525	
17,600.00	9,409.97	9,131.00	9,109.68	185.18	45.40	-65.95	-579.44	-717.51	7,727.39	7,516.60	210.79	36.658	
17,700.00	9,409.32	9,131.00	9,109.68	187.24	45.40	-65.95	-579.44	-717.51	7,826.82	7,614.07	212.75	36.789	
17,800.00	9,408.67	9,131.00	9,109.68	189.29	45.40	-65.95	-579.44	-717.51	7,926.26	7,711.55	214.71	36.917	
17,900.00	9,408.03	9,131.00	9,109.68	191.35	45.40	-65.95	-579.44	-717.51	8,025.71	7,809.05	216.66	37.042	
18,000.00	9,407.38	9,131.00	9,109.68	193.40	45.40	-65.95	-579.44	-717.51	8,125.18	7,906.56	218.62	37.165	
18,100.00	9,406.73	9,131.00	9,109.68	195.47	45.40	-65.95	-579.44	-717.51	8,224.66	8,004.08	220.59	37.285	
18,200.00	9,406.09	9,131.00	9,109.68	197.53	45.40	-65.95	-579.44	-717.51	8,324.16	8,101.61	222.55	37.404	
18,300.00	9,405.44	9,131.00	9,109.68	199.59	45.40	-65.95	-579.44	-717.51	8,423.66	8,199.15	224.51	37.520	
18,400.00	9,404.80	9,131.00	9,109.68	201.66	45.40	-65.95	-579.44	-717.51	8,523.18	8,296.70	226.48	37.633	
18,500.00	9,404.15	9,131.00	9,109.68	203.73	45.40	-65.95	-579.44	-717.51	8,622.71	8,394.26	228.45	37.745	
18,600.00	9,403.50	9,131.00	9,109.68	205.80	45.40	-65.95	-579.44	-717.51	8,722.25	8,491.83	230.41	37.855	
18,700.00	9,402.86	9,131.00	9,109.68	207.87	45.40	-65.95	-579.44	-717.51	8,821.80	8,589.41	232.38	37.962	
18,800.00	9,402.21	9,131.00	9,109.68	209.94	45.40	-65.95	-579.44	-717.51	8,921.35	8,687.00	234.35	38.068	
18,900.00	9,401.56	9,131.00	9,109.68	212.02	45.40	-65.95	-579.44	-717.51	9,020.92	8,784.60	236.33	38.171	
19,000.00	9,400.92	9,131.00	9,109.68	214.10	45.40	-65.95	-579.44	-717.51	9,120.50	8,882.20	238.30	38.273	
19,100.00	9,400.27	9,131.00	9,109.68	216.18	45.40	-65.95	-579.44	-717.51	9,220.09	8,979.82	240.27	38.373	
19,200.00	9,399.63	9,131.00	9,109.68	218.26	45.40	-65.95	-579.44	-717.51	9,319.69	9,077.44	242.25	38.472	
19,300.00	9,398.98	9,131.00	9,109.68	220.34	45.40	-65.95	-579.44	-717.51	9,419.29	9,175.07	244.22	38.568	
19,400.00	9,398.33	9,131.00	9,109.68	222.42	45.40	-65.95	-579.44	-717.51	9,518.91	9,272.70	246.20	38.663	
19,500.00	9,397.69	9,131.00	9,109.68	224.50	45.40	-65.95	-579.44	-717.51	9,618.53	9,370.35	248.18	38.756	
19,600.00	9,397.04	9,131.00	9,109.68	226.59	45.40	-65.95	-579.44	-717.51	9,718.16	9,468.00	250.16	38.848	
19,700.00	9,396.39	9,131.00	9,109.68	228.68	45.40	-65.95	-579.44	-717.51	9,817.79	9,565.65	252.14	38.938	
19,800.00	9,395.75	9,131.00	9,109.68	230.77	45.40	-65.95	-579.44	-717.51	9,917.44	9,663.32	254.12	39.027	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 21HA - OH / Job #61216 - Surveys (Patterson 815)												Offset Site Error:	0.00 usft
Survey Program: 164-MWD, 432-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-114.22	-408.01	-907.00	994.63				
100.00	100.00	89.57	89.57	0.19	0.13	-114.24	-408.25	-906.76	994.43	994.11	0.32	3,090.205	
200.00	200.00	191.65	191.65	0.73	0.32	-114.30	-409.09	-905.94	994.04	992.99	1.05	946.512	
300.00	300.00	299.67	299.66	1.27	0.65	-114.36	-409.80	-904.93	993.48	991.56	1.92	517.347	
400.00	400.00	409.13	409.06	1.81	1.01	-114.51	-411.07	-901.69	991.21	988.40	2.81	352.721	
500.00	500.00	512.65	512.52	2.34	1.24	-114.66	-412.55	-898.43	988.95	985.37	3.58	275.996	
600.00	600.00	618.57	618.35	2.88	1.52	-114.83	-413.88	-894.46	986.07	981.67	4.40	224.318	
700.00	700.00	721.36	721.02	3.42	1.85	-115.05	-415.75	-889.72	982.65	977.38	5.27	186.635	
800.00	800.00	818.81	818.34	3.96	2.29	-115.27	-417.91	-885.12	979.32	973.08	6.23	157.077	
900.00	900.00	910.94	910.34	4.50	2.72	-115.50	-420.20	-881.02	976.37	969.18	7.20	135.647	
1,000.00	1,000.00	996.76	996.11	5.03	3.14	-115.66	-422.03	-878.56	974.71	966.56	8.15	119.534	
1,100.00	1,100.00	1,088.71	1,088.03	5.57	3.60	-115.76	-423.50	-877.58	974.42	965.28	9.14	106.555	
1,200.00	1,200.00	1,198.60	1,197.92	6.11	4.15	-115.83	-424.21	-876.49	973.81	963.58	10.24	95.143	
1,300.00	1,300.00	1,303.64	1,302.95	6.65	4.68	-115.84	-423.73	-874.98	972.31	961.01	11.30	86.017	
1,400.00	1,400.00	1,404.26	1,403.55	7.18	5.19	-115.80	-422.44	-873.73	970.64	958.29	12.35	78.582	
1,500.00	1,500.00	1,500.62	1,499.89	7.72	5.67	-115.73	-420.72	-872.85	969.04	955.66	13.38	72.432	
1,600.00	1,600.00	1,594.66	1,593.92	8.26	6.15	-115.68	-419.51	-872.37	968.02	953.63	14.39	67.253	
1,649.20	1,649.20	1,629.00	1,628.26	8.52	6.32	-115.67	-419.21	-872.28	967.82	952.99	14.83	65.251	
1,700.00	1,700.00	1,675.45	1,674.71	8.80	6.55	-115.65	-418.99	-872.59	968.05	952.71	15.34	63.118	
1,800.00	1,800.00	1,748.56	1,747.79	9.33	6.92	-115.61	-419.26	-874.61	970.70	954.46	16.24	59.775	
1,900.00	1,899.98	1,822.68	1,821.79	9.86	7.29	-14.46	-420.29	-878.59	974.43	957.31	17.13	56.899	
2,000.00	1,999.84	1,918.12	1,916.99	10.37	7.76	-14.46	-422.07	-885.06	976.29	958.21	18.08	53.996	
2,100.00	2,099.45	2,013.63	2,012.24	10.88	8.24	-14.51	-423.92	-892.00	975.23	956.21	19.02	51.275	
2,200.00	2,198.70	2,110.02	2,108.31	11.41	8.73	-14.60	-425.62	-899.51	971.21	951.25	19.95	48.674	
2,300.00	2,297.47	2,205.40	2,203.35	11.94	9.21	-14.73	-426.97	-907.48	964.18	943.31	20.86	46.218	
2,400.00	2,395.62	2,291.00	2,288.52	12.49	9.66	-14.80	-426.99	-916.06	954.69	932.98	21.70	43.988	
2,500.00	2,493.06	2,379.37	2,376.16	13.06	10.12	-14.77	-424.97	-927.17	943.13	920.60	22.54	41.844	
2,600.00	2,589.64	2,475.80	2,471.54	13.66	10.64	-14.66	-421.31	-940.87	929.08	905.68	23.40	39.705	
2,700.00	2,685.27	2,571.02	2,565.68	14.29	11.16	-14.61	-417.69	-954.69	911.95	887.72	24.24	37.629	
2,800.00	2,779.82	2,649.99	2,643.67	14.95	11.60	-14.65	-415.29	-966.90	892.69	867.72	24.97	35.752	
2,900.00	2,873.17	2,738.55	2,730.94	15.66	12.10	-14.77	-413.64	-981.85	871.86	846.13	25.73	33.879	
3,000.00	2,965.21	2,830.88	2,821.84	16.42	12.63	-14.97	-412.20	-997.96	848.39	821.89	26.51	32.007	
3,100.00	3,055.84	2,925.38	2,914.83	17.24	13.18	-15.27	-411.00	-1,014.78	822.08	794.81	27.28	30.138	
3,200.00	3,144.94	3,017.85	3,005.79	18.12	13.72	-15.67	-410.01	-1,031.35	792.76	764.73	28.03	28.284	
3,300.00	3,232.39	3,108.57	3,094.96	19.07	14.26	-16.17	-409.20	-1,048.02	760.71	731.95	28.77	26.446	
3,400.00	3,318.33	3,197.62	3,182.40	20.09	14.80	-16.68	-408.54	-1,064.85	726.44	696.74	29.70	24.462	
3,500.00	3,404.05	3,286.45	3,269.50	21.16	15.34	-17.12	-408.00	-1,082.28	692.47	661.62	30.85	22.444	
3,600.00	3,489.76	3,378.12	3,359.30	22.27	15.91	-17.62	-407.72	-1,100.74	659.14	627.08	32.05	20.564	
3,700.00	3,575.48	3,476.62	3,455.83	23.40	16.52	-18.24	-407.73	-1,120.33	625.78	592.45	33.32	18.779	
3,800.00	3,661.19	3,573.56	3,551.06	24.56	17.13	-19.01	-407.94	-1,138.45	591.56	556.94	34.62	17.087	
3,900.00	3,746.90	3,668.28	3,644.14	25.74	17.71	-19.87	-408.24	-1,156.02	557.38	521.44	35.94	15.509	
4,000.00	3,832.62	3,766.58	3,740.86	26.94	18.32	-20.95	-408.75	-1,173.50	522.81	485.48	37.33	14.006	
4,100.00	3,918.33	3,860.53	3,833.51	28.16	18.90	-22.26	-409.72	-1,189.06	487.65	448.90	38.75	12.584	
4,200.00	4,004.05	3,952.88	3,924.54	29.39	19.47	-23.73	-410.72	-1,204.61	453.00	412.78	40.23	11.261	
4,300.00	4,089.76	4,048.27	4,018.56	30.64	20.06	-25.44	-411.39	-1,220.70	418.50	376.69	41.80	10.011	
4,400.00	4,175.48	4,142.64	4,111.63	31.89	20.64	-27.40	-411.45	-1,236.30	383.74	340.27	43.48	8.827	
4,500.00	4,261.19	4,235.18	4,202.91	33.16	21.22	-29.70	-411.54	-1,251.54	349.44	304.17	45.27	7.720	
4,600.00	4,346.91	4,328.13	4,294.61	34.43	21.79	-32.56	-411.94	-1,266.69	315.84	268.59	47.25	6.684	
4,700.00	4,432.62	4,421.69	4,386.92	35.72	22.37	-36.07	-412.14	-1,281.92	282.97	233.49	49.49	5.718	
4,800.00	4,518.33	4,516.00	4,479.95	37.01	22.96	-40.36	-411.69	-1,297.45	250.95	198.92	52.03	4.823	
4,900.00	4,604.83	4,609.82	4,572.42	38.28	23.54	-44.84	-410.18	-1,313.24	220.95	166.01	54.95	4.021	
5,000.00	4,693.02	4,703.30	4,664.52	39.48	24.13	-49.86	-408.92	-1,329.22	195.41	137.47	57.95	3.372	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 21HA - OH / Job #61216 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft	
Survey Program: 164-MWD, 432-MWD+HDM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	4,782.80	4,798.28	4,758.02	40.62	24.73	-55.45	-407.99	-1,345.87	174.50	113.53	60.98	2.862		
5,200.00	4,874.07	4,894.57	4,852.79	41.68	25.34	-61.49	-407.43	-1,362.89	157.98	94.04	63.94	2.471		
5,300.00	4,966.70	4,991.89	4,948.52	42.69	25.97	-67.60	-407.05	-1,380.38	145.39	78.70	66.68	2.180		
5,400.00	5,060.59	5,089.92	5,044.88	43.62	26.60	-73.33	-406.90	-1,398.38	136.13	67.04	69.09	1.970		
5,500.00	5,155.63	5,188.61	5,141.82	44.48	27.23	-78.22	-407.02	-1,416.92	129.49	58.36	71.13	1.820		
5,600.00	5,251.69	5,288.35	5,239.75	45.28	27.88	-82.01	-407.25	-1,435.80	124.49	51.62	72.87	1.708		
5,700.00	5,348.66	5,388.32	5,338.06	46.02	28.53	-84.86	-407.11	-1,453.96	120.10	45.71	74.39	1.614		
5,800.00	5,446.43	5,488.15	5,436.33	46.69	29.16	-86.49	-406.85	-1,471.56	116.17	40.42	75.75	1.534		
5,900.00	5,544.87	5,587.17	5,533.90	47.30	29.79	-86.74	-406.85	-1,488.46	112.84	35.85	77.00	1.466 Level 3		
6,000.00	5,643.86	5,686.44	5,632.01	47.85	30.41	-86.14	-407.46	-1,503.58	110.57	32.42	78.15	1.415 Level 3		
6,100.00	5,743.29	5,785.64	5,730.32	48.35	31.00	-84.72	-408.41	-1,516.74	109.17	29.97	79.20	1.378 Level 3		
6,180.29	5,823.35	5,865.42	5,809.50	48.71	31.47	-82.68	-409.54	-1,526.50	108.82	28.89	79.93	1.361 Level 3		
6,200.00	5,843.02	5,885.00	5,828.94	48.79	31.59	-82.05	-409.85	-1,528.80	108.84	28.75	80.09	1.359 Level 3		
6,300.00	5,942.95	5,984.99	5,928.36	49.19	32.17	-78.43	-411.37	-1,539.33	109.50	28.73	80.77	1.356 Level 3		
6,400.00	6,042.94	6,085.98	6,029.04	49.53	32.72	-175.84	-412.24	-1,547.01	110.54	29.40	81.14	1.362 Level 3		
6,500.00	6,142.94	6,186.25	6,129.20	49.88	33.24	-173.50	-412.57	-1,551.60	111.29	29.61	81.67	1.363 Level 3		
6,600.00	6,242.94	6,286.26	6,229.17	50.22	33.75	-172.20	-412.94	-1,554.19	111.98	29.65	82.33	1.360 Level 3		
6,700.00	6,342.94	6,386.30	6,329.21	50.57	34.24	-171.58	-413.41	-1,555.50	112.63	29.56	83.07	1.356 Level 3		
6,800.00	6,442.94	6,486.26	6,429.16	50.92	34.73	-171.38	-414.07	-1,555.99	113.35	29.47	83.88	1.351 Level 3		
6,900.00	6,542.94	6,586.27	6,529.18	51.28	35.20	-171.30	-414.62	-1,556.23	113.94	29.22	84.71	1.345 Level 3		
7,000.00	6,642.94	6,685.98	6,628.88	51.64	35.67	-171.31	-415.52	-1,556.34	114.84	29.29	85.56	1.342 Level 3		
7,100.00	6,742.94	6,786.28	6,729.17	52.00	36.15	-171.34	-416.31	-1,556.41	115.63	29.22	86.41	1.338 Level 3		
7,200.00	6,842.94	6,886.52	6,829.41	52.36	36.62	-171.40	-416.89	-1,556.38	116.20	28.93	87.27	1.332 Level 3		
7,300.00	6,942.94	6,987.01	6,929.90	52.73	37.09	-171.65	-417.25	-1,555.92	116.48	28.33	88.15	1.321 Level 3		
7,400.00	7,042.94	7,087.45	7,030.34	53.10	37.55	-172.11	-417.20	-1,554.96	116.30	27.23	89.07	1.306 Level 3		
7,500.00	7,142.94	7,187.26	7,130.13	53.47	38.00	-172.96	-417.10	-1,553.22	115.97	25.93	90.04	1.288 Level 3		
7,551.13	7,194.07	7,238.22	7,181.07	53.67	38.23	-173.60	-417.22	-1,551.93	115.94	25.38	90.56	1.280 Level 3		
7,600.00	7,242.94	7,287.02	7,229.85	53.85	38.46	-174.27	-417.38	-1,550.57	115.96	24.89	91.07	1.273 Level 3		
7,700.00	7,342.94	7,387.42	7,330.21	54.23	38.91	-175.74	-417.62	-1,547.62	115.94	23.84	92.11	1.259 Level 3		
7,785.01	7,427.96	7,472.21	7,414.96	54.55	39.30	-177.00	-417.62	-1,545.07	115.78	22.81	92.98	1.245 Level 2		
7,800.00	7,442.94	7,487.11	7,429.86	54.61	39.37	-177.22	-417.65	-1,544.61	115.79	22.66	93.13	1.243 Level 2		
7,900.00	7,542.94	7,586.90	7,529.60	54.99	39.83	-178.75	-417.97	-1,541.54	116.00	21.85	94.14	1.232 Level 2		
8,000.00	7,642.94	7,686.77	7,629.42	55.38	40.29	-179.67	-418.37	-1,538.33	116.37	21.23	95.14	1.223 Level 2		
8,100.00	7,742.94	7,786.72	7,729.31	55.77	40.75	-178.00	-418.80	-1,534.93	116.87	20.74	96.13	1.216 Level 2		
8,200.00	7,842.94	7,886.59	7,829.12	56.16	41.21	-176.42	-419.27	-1,531.67	117.50	20.40	97.10	1.210 Level 2		
8,300.00	7,942.94	7,986.65	7,929.14	56.56	41.68	-175.06	-419.75	-1,528.81	118.19	20.16	98.04	1.206 Level 2		
8,400.00	8,042.94	8,086.52	8,028.98	56.95	42.15	-173.82	-420.19	-1,526.21	118.88	19.92	98.96	1.201 Level 2		
8,500.00	8,142.94	8,185.57	8,127.98	57.35	42.62	-172.66	-421.14	-1,523.66	120.14	20.27	99.87	1.203 Level 2		
8,600.00	8,242.94	8,285.05	8,227.43	57.75	43.09	-171.68	-422.68	-1,521.35	121.99	21.23	100.77	1.211 Level 2		
8,700.00	8,342.94	8,385.49	8,327.84	58.16	43.57	-171.00	-424.46	-1,519.61	124.01	22.34	101.67	1.220 Level 2		
8,800.00	8,442.94	8,489.60	8,431.94	58.56	44.08	-170.89	-425.30	-1,519.22	124.89	22.30	102.58	1.217 Level 2		
8,900.00	8,542.94	8,606.20	8,548.07	58.97	44.68	-171.46	-416.47	-1,521.82	117.16	13.59	103.57	1.131 Level 2		
9,000.00	8,642.94	8,726.46	8,663.96	59.38	45.26	-170.23	-385.48	-1,524.63	91.29	-13.29	104.57	0.873 Level 1		
9,100.00	8,742.94	8,831.05	8,754.51	59.79	45.72	-163.14	-333.99	-1,529.30	41.48	-63.77	105.25	0.394 Level 1		
9,163.62	8,806.57	8,882.00	8,793.57	60.05	45.91	85.24	-301.42	-1,532.04	6.99	-85.19	92.18	0.076 Level 1, CC, ES, SF		
9,200.00	8,842.94	8,907.01	8,811.33	60.20	46.00	17.07	-283.88	-1,533.43	26.57	-76.85	103.42	0.257 Level 1		
9,300.00	8,942.94	8,965.17	8,848.74	60.62	46.20	2.27	-239.48	-1,536.52	102.51	-3.58	106.09	0.966 Level 1		
9,400.00	9,042.54	9,009.74	8,874.86	61.03	46.34	-178.62	-203.43	-1,538.53	187.57	81.92	105.65	1.775		
9,500.00	9,139.32	9,036.35	8,889.58	61.44	46.42	-178.84	-181.28	-1,539.44	281.82	179.72	102.10	2.760		
9,600.00	9,230.35	9,047.34	8,895.49	61.85	46.46	-176.70	-172.03	-1,539.77	380.66	284.73	95.93	3.968		
9,700.00	9,312.86	9,044.89	8,894.18	62.24	46.45	-1.18	-174.09	-1,539.70	480.47	393.44	87.03	5.521		
9,800.00	9,384.34	9,031.49	8,886.93	62.61	46.41	-0.51	-185.36	-1,539.28	578.33	501.85	76.48	7.562		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 21HA - OH / Job #61216 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 164-MWD, 432-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,900.00	9,442.63	9,010.37	8,875.21	62.95	46.34	-0.39	-202.91	-1,538.56	671.84	607.13	64.71	10.382	
10,000.00	9,485.95	8,975.00	8,854.66	63.28	46.23	-0.41	-231.66	-1,537.01	759.27	706.38	52.89	14.355	
10,100.00	9,512.99	8,954.61	8,842.25	63.61	46.16	-0.40	-247.80	-1,535.98	838.88	795.81	43.08	19.474	
10,200.00	9,522.91	8,928.00	8,825.37	63.96	46.08	-0.42	-268.32	-1,534.58	909.97	871.55	38.42	23.683	
10,300.00	9,521.18	8,902.47	8,808.18	64.35	45.99	-0.48	-287.15	-1,533.18	976.38	937.53	38.85	25.131	
10,400.00	9,519.14	8,880.00	8,792.10	64.79	45.91	-0.55	-302.78	-1,531.92	1,046.47	1,007.00	39.48	26.509	
10,500.00	9,517.10	8,861.45	8,778.22	65.30	45.84	-0.61	-315.04	-1,530.89	1,119.83	1,079.68	40.15	27.890	
10,600.00	9,515.06	8,833.00	8,756.06	65.87	45.73	-0.68	-332.82	-1,529.40	1,196.06	1,155.24	40.82	29.298	
10,700.00	9,513.02	8,833.00	8,756.06	66.50	45.73	-0.68	-332.82	-1,529.40	1,274.54	1,232.90	41.64	30.610	
10,800.00	9,510.98	8,809.64	8,737.10	67.20	45.63	-0.74	-346.40	-1,528.24	1,355.06	1,312.67	42.39	31.966	
10,900.00	9,508.93	8,785.00	8,716.37	67.97	45.53	-0.79	-359.66	-1,527.03	1,437.69	1,394.52	43.17	33.306	
11,000.00	9,506.89	8,785.00	8,716.37	68.81	45.53	-0.79	-359.66	-1,527.03	1,521.61	1,477.56	44.05	34.541	
11,100.00	9,504.85	8,785.00	8,716.37	69.71	45.53	-0.79	-359.66	-1,527.03	1,607.37	1,562.42	44.96	35.752	
11,200.00	9,502.81	8,785.00	8,716.37	70.68	45.53	-0.79	-359.66	-1,527.03	1,694.70	1,648.82	45.88	36.935	
11,300.00	9,500.77	8,738.00	8,674.61	71.71	45.32	-0.87	-381.06	-1,525.04	1,782.73	1,736.06	46.66	38.204	
11,400.00	9,498.73	8,738.00	8,674.61	72.80	45.32	-0.87	-381.06	-1,525.04	1,871.37	1,823.75	47.62	39.298	
11,500.00	9,496.69	8,738.00	8,674.61	73.95	45.32	-0.87	-381.06	-1,525.04	1,961.10	1,912.51	48.59	40.360	
11,600.00	9,494.65	8,738.00	8,674.61	75.16	45.32	-0.87	-381.06	-1,525.04	2,051.78	2,002.21	49.57	41.389	
11,700.00	9,492.61	8,738.00	8,674.61	76.41	45.32	-0.87	-381.06	-1,525.04	2,143.29	2,092.72	50.57	42.384	
11,800.00	9,490.57	8,738.00	8,674.61	77.72	45.32	-0.87	-381.06	-1,525.04	2,235.53	2,183.96	51.57	43.347	
11,900.00	9,488.53	8,716.12	8,654.33	79.07	45.21	-0.89	-389.23	-1,524.30	2,327.82	2,275.30	52.51	44.327	
12,000.00	9,486.49	8,690.00	8,629.66	80.46	45.09	-0.90	-397.77	-1,523.58	2,421.37	2,367.91	53.46	45.295	
12,100.00	9,484.44	8,690.00	8,629.66	81.89	45.09	-0.90	-397.77	-1,523.58	2,514.64	2,460.15	54.49	46.148	
12,200.00	9,482.40	8,690.00	8,629.66	83.36	45.09	-0.90	-397.77	-1,523.58	2,608.41	2,552.87	55.53	46.971	
12,300.00	9,480.36	8,690.00	8,629.66	84.86	45.09	-0.90	-397.77	-1,523.58	2,702.62	2,646.04	56.58	47.766	
12,400.00	9,478.32	8,690.00	8,629.66	86.40	45.09	-0.90	-397.77	-1,523.58	2,797.24	2,739.60	57.64	48.533	
12,500.00	9,476.28	8,690.00	8,629.66	87.96	45.09	-0.90	-397.77	-1,523.58	2,892.21	2,833.52	58.70	49.274	
12,600.00	9,474.24	8,690.00	8,629.66	89.55	45.09	-0.90	-397.77	-1,523.58	2,987.52	2,927.75	59.76	49.989	
12,700.00	9,472.20	8,690.00	8,629.66	91.17	45.09	-0.90	-397.77	-1,523.58	3,083.12	3,022.28	60.84	50.680	
12,800.00	9,470.16	8,690.00	8,629.66	92.82	45.09	-0.90	-397.77	-1,523.58	3,178.99	3,117.08	61.91	51.346	
12,900.00	9,468.12	8,667.74	8,608.30	94.48	44.98	-0.91	-404.01	-1,523.08	3,274.53	3,211.61	62.93	52.038	
13,000.00	9,466.08	8,664.19	8,604.87	96.17	44.96	-0.91	-404.91	-1,523.01	3,370.68	3,306.68	64.00	52.666	
13,100.00	9,464.04	8,643.00	8,584.25	97.88	44.86	-0.91	-409.80	-1,522.60	3,467.39	3,402.37	65.03	53.323	
13,200.00	9,461.99	8,643.00	8,584.25	99.61	44.86	-0.91	-409.80	-1,522.60	3,563.79	3,497.67	66.12	53.898	
13,300.00	9,459.95	8,643.00	8,584.25	101.36	44.86	-0.91	-409.80	-1,522.60	3,660.38	3,593.16	67.22	54.455	
13,400.00	9,457.91	8,643.00	8,584.25	103.12	44.86	-0.91	-409.80	-1,522.60	3,757.15	3,688.83	68.32	54.994	
13,500.00	9,455.87	8,643.00	8,584.25	104.90	44.86	-0.91	-409.80	-1,522.60	3,854.08	3,784.65	69.42	55.515	
13,600.00	9,453.83	8,643.00	8,584.25	106.70	44.86	-0.91	-409.80	-1,522.60	3,951.16	3,880.63	70.53	56.020	
13,700.00	9,451.79	8,643.00	8,584.25	108.50	44.86	-0.91	-409.80	-1,522.60	4,048.39	3,976.75	71.64	56.509	
13,800.00	9,449.75	8,643.00	8,584.25	110.33	44.86	-0.91	-409.80	-1,522.60	4,145.75	4,073.00	72.75	56.983	
13,900.00	9,447.71	8,643.00	8,584.25	112.16	44.86	-0.91	-409.80	-1,522.60	4,243.23	4,169.36	73.87	57.443	
14,000.00	9,445.67	8,643.00	8,584.25	114.01	44.86	-0.91	-409.80	-1,522.60	4,340.83	4,265.84	74.99	57.888	
14,100.00	9,443.63	8,643.00	8,584.25	115.87	44.86	-0.91	-409.80	-1,522.60	4,438.53	4,362.43	76.11	58.320	
14,200.00	9,441.59	8,643.00	8,584.25	117.74	44.86	-0.91	-409.80	-1,522.60	4,536.34	4,459.11	77.23	58.739	
14,300.00	9,439.54	8,643.00	8,584.25	119.62	44.86	-0.91	-409.80	-1,522.60	4,634.23	4,555.88	78.35	59.146	
14,400.00	9,437.50	8,643.00	8,584.25	121.51	44.86	-0.91	-409.80	-1,522.60	4,732.22	4,652.74	79.48	59.541	
14,500.00	9,435.46	8,643.00	8,584.25	123.41	44.86	-0.91	-409.80	-1,522.60	4,830.29	4,749.68	80.61	59.925	
14,600.00	9,433.42	8,619.90	8,561.59	125.32	44.74	-0.91	-414.23	-1,522.14	4,927.96	4,846.30	81.66	60.347	
14,700.00	9,431.38	8,617.71	8,559.43	127.24	44.73	-0.91	-414.61	-1,522.09	5,026.09	4,943.30	82.78	60.713	
14,800.00	9,429.34	8,595.00	8,537.00	129.16	44.62	-0.92	-418.08	-1,521.53	5,124.65	5,040.81	83.84	61.123	
14,900.00	9,427.46	8,595.00	8,537.00	131.09	44.62	1.45	-418.08	-1,521.53	5,222.86	5,136.61	86.25	60.551	
15,000.00	9,426.77	8,595.00	8,537.00	133.03	44.62	2.76	-418.08	-1,521.53	5,321.35	5,233.07	88.28	60.279	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 21HA - OH / Job #61216 - Surveys (Patterson 815)												Offset Site Error:	0.00 usft
Survey Program: 164-MWD, 432-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,100.00	9,426.12	8,595.00	8,537.00	134.98	44.62	2.76	-418.08	-1,521.53	5,419.90	5,330.48	89.42	60.615	
15,200.00	9,425.48	8,595.00	8,537.00	136.93	44.62	2.76	-418.08	-1,521.53	5,518.50	5,427.94	90.55	60.942	
15,300.00	9,424.83	8,595.00	8,537.00	138.89	44.62	2.76	-418.08	-1,521.53	5,617.15	5,525.46	91.69	61.261	
15,400.00	9,424.18	8,595.00	8,537.00	140.85	44.62	2.76	-418.08	-1,521.53	5,715.85	5,623.01	92.83	61.571	
15,500.00	9,423.54	8,595.00	8,537.00	142.82	44.62	2.76	-418.08	-1,521.53	5,814.59	5,720.61	93.97	61.874	
15,600.00	9,422.89	8,595.00	8,537.00	144.80	44.62	2.76	-418.08	-1,521.53	5,913.37	5,818.25	95.12	62.169	
15,700.00	9,422.25	8,595.00	8,537.00	146.78	44.62	2.76	-418.08	-1,521.53	6,012.19	5,915.93	96.26	62.457	
15,800.00	9,421.60	8,595.00	8,537.00	148.77	44.62	2.76	-418.08	-1,521.53	6,111.06	6,013.65	97.41	62.738	
15,900.00	9,420.95	8,595.00	8,537.00	150.76	44.62	2.76	-418.08	-1,521.53	6,209.96	6,111.40	98.55	63.012	
16,000.00	9,420.31	8,595.00	8,537.00	152.75	44.62	2.76	-418.08	-1,521.53	6,308.89	6,209.19	99.70	63.280	
16,100.00	9,419.66	8,595.00	8,537.00	154.75	44.62	2.76	-418.08	-1,521.53	6,407.86	6,307.01	100.85	63.541	
16,200.00	9,419.01	8,595.00	8,537.00	156.76	44.62	2.76	-418.08	-1,521.53	6,506.85	6,404.86	101.99	63.796	
16,300.00	9,418.37	8,595.00	8,537.00	158.77	44.62	2.76	-418.08	-1,521.53	6,605.88	6,502.74	103.14	64.045	
16,400.00	9,417.72	8,595.00	8,537.00	160.78	44.62	2.76	-418.08	-1,521.53	6,704.94	6,600.64	104.29	64.289	
16,500.00	9,417.08	8,595.00	8,537.00	162.80	44.62	2.76	-418.08	-1,521.53	6,804.02	6,698.58	105.45	64.526	
16,600.00	9,416.43	8,595.00	8,537.00	164.82	44.62	2.76	-418.08	-1,521.53	6,903.14	6,796.54	106.60	64.759	
16,700.00	9,415.78	8,595.00	8,537.00	166.84	44.62	2.76	-418.08	-1,521.53	7,002.27	6,894.52	107.75	64.987	
16,800.00	9,415.14	8,595.00	8,537.00	168.86	44.62	2.76	-418.08	-1,521.53	7,101.43	6,992.53	108.90	65.209	
16,900.00	9,414.49	8,595.00	8,537.00	170.89	44.62	2.76	-418.08	-1,521.53	7,200.62	7,090.56	110.06	65.427	
17,000.00	9,413.84	8,595.00	8,537.00	172.93	44.62	2.76	-418.08	-1,521.53	7,299.82	7,188.61	111.21	65.639	
17,100.00	9,413.20	8,595.00	8,537.00	174.96	44.62	2.76	-418.08	-1,521.53	7,399.05	7,286.68	112.37	65.848	
17,200.00	9,412.55	8,595.00	8,537.00	177.00	44.62	2.76	-418.08	-1,521.53	7,498.30	7,384.78	113.52	66.052	
17,300.00	9,411.91	8,595.00	8,537.00	179.04	44.62	2.76	-418.08	-1,521.53	7,597.57	7,482.89	114.68	66.251	
17,400.00	9,411.26	8,595.00	8,537.00	181.09	44.62	2.76	-418.08	-1,521.53	7,696.85	7,581.02	115.83	66.447	
17,500.00	9,410.61	8,595.00	8,537.00	183.13	44.62	2.76	-418.08	-1,521.53	7,796.16	7,679.17	116.99	66.638	
17,600.00	9,409.97	8,595.00	8,537.00	185.18	44.62	2.76	-418.08	-1,521.53	7,895.48	7,777.33	118.15	66.826	
17,700.00	9,409.32	8,595.00	8,537.00	187.24	44.62	2.76	-418.08	-1,521.53	7,994.82	7,875.51	119.31	67.010	
17,800.00	9,408.67	8,595.00	8,537.00	189.29	44.62	2.76	-418.08	-1,521.53	8,094.17	7,973.71	120.47	67.190	
17,900.00	9,408.03	8,595.00	8,537.00	191.35	44.62	2.76	-418.08	-1,521.53	8,193.55	8,071.92	121.63	67.367	
18,000.00	9,407.38	8,595.00	8,537.00	193.40	44.62	2.76	-418.08	-1,521.53	8,292.93	8,170.15	122.79	67.540	
18,100.00	9,406.73	8,572.78	8,514.95	195.47	44.51	2.66	-420.75	-1,520.95	8,391.96	8,268.16	123.80	67.787	
18,200.00	9,406.09	8,571.92	8,514.10	197.53	44.50	2.66	-420.84	-1,520.93	8,491.34	8,366.39	124.95	67.956	
18,300.00	9,405.44	8,571.08	8,513.26	199.59	44.50	2.65	-420.92	-1,520.91	8,590.74	8,464.63	126.11	68.121	
18,400.00	9,404.80	8,570.26	8,512.44	201.66	44.49	2.65	-421.01	-1,520.89	8,690.15	8,562.89	127.27	68.284	
18,500.00	9,404.15	8,548.00	8,490.27	203.73	44.38	2.56	-422.91	-1,520.31	8,789.93	8,661.64	128.28	68.520	
18,600.00	9,403.50	8,548.00	8,490.27	205.80	44.38	2.56	-422.91	-1,520.31	8,889.34	8,759.89	129.45	68.673	
18,700.00	9,402.86	8,548.00	8,490.27	207.87	44.38	2.56	-422.91	-1,520.31	8,988.76	8,858.15	130.61	68.823	
18,800.00	9,402.21	8,548.00	8,490.27	209.94	44.38	2.56	-422.91	-1,520.31	9,088.20	8,956.43	131.77	68.970	
18,900.00	9,401.56	8,548.00	8,490.27	212.02	44.38	2.56	-422.91	-1,520.31	9,187.65	9,054.71	132.93	69.115	
19,000.00	9,400.92	8,548.00	8,490.27	214.10	44.38	2.56	-422.91	-1,520.31	9,287.11	9,153.01	134.10	69.257	
19,100.00	9,400.27	8,548.00	8,490.27	216.18	44.38	2.56	-422.91	-1,520.31	9,386.58	9,251.32	135.26	69.397	
19,200.00	9,399.63	8,548.00	8,490.27	218.26	44.38	2.56	-422.91	-1,520.31	9,486.06	9,349.64	136.42	69.534	
19,300.00	9,398.98	8,548.00	8,490.27	220.34	44.38	2.56	-422.91	-1,520.31	9,585.56	9,447.97	137.59	69.669	
19,400.00	9,398.33	8,548.00	8,490.27	222.42	44.38	2.56	-422.91	-1,520.31	9,685.06	9,546.31	138.75	69.801	
19,500.00	9,397.69	8,548.00	8,490.27	224.50	44.38	2.56	-422.91	-1,520.31	9,784.57	9,644.66	139.92	69.931	
19,600.00	9,397.04	8,548.00	8,490.27	226.59	44.38	2.56	-422.91	-1,520.31	9,884.10	9,743.02	141.08	70.059	
19,700.00	9,396.39	8,548.00	8,490.27	228.68	44.38	2.56	-422.91	-1,520.31	9,983.63	9,841.38	142.25	70.185	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 22HA - OH / Job #61217 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 434-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-115.54	-433.01	-906.00	1,004.24				
100.00	100.00	90.63	90.63	0.19	0.13	-115.54	-432.83	-905.86	1,004.00	1,003.68	0.32	3,117.842	
200.00	200.00	198.04	198.03	0.73	0.33	-115.54	-432.63	-905.27	1,003.40	1,002.34	1.06	948.455	
300.00	300.00	306.01	305.99	1.27	0.68	-115.58	-432.35	-903.24	1,001.57	999.62	1.95	513.205	
400.00	400.00	399.86	399.81	1.81	0.98	-115.67	-433.11	-901.23	999.98	997.19	2.79	358.572	
500.00	500.00	507.67	507.58	2.34	1.23	-115.82	-434.84	-898.67	998.56	994.98	3.58	279.315	
600.00	600.00	629.63	629.44	2.88	1.50	-116.03	-436.59	-894.03	995.84	991.46	4.38	227.358	
700.00	700.00	792.55	791.41	3.42	2.14	-116.71	-441.81	-877.75	988.11	982.55	5.55	177.914	
800.00	800.00	888.39	886.27	3.96	2.63	-117.25	-445.33	-864.59	977.59	971.03	6.56	148.918	
900.00	900.00	969.94	967.13	4.50	3.07	-117.69	-448.53	-854.52	968.41	960.88	7.52	128.755	
1,000.00	1,000.00	1,070.86	1,067.39	5.03	3.62	-118.17	-451.70	-843.40	960.11	951.53	8.59	111.792	
1,100.00	1,100.00	1,179.17	1,175.08	5.57	4.21	-118.57	-452.94	-831.93	951.32	941.61	9.71	97.997	
1,200.00	1,200.00	1,283.94	1,279.18	6.11	4.79	-118.93	-453.34	-820.14	941.62	930.80	10.82	87.021	
1,300.00	1,300.00	1,383.40	1,378.07	6.65	5.35	-119.23	-452.89	-809.44	931.99	920.08	11.91	78.255	
1,400.00	1,400.00	1,484.15	1,478.23	7.18	5.91	-119.47	-451.35	-798.74	921.97	908.96	13.01	70.876	
1,500.00	1,500.00	1,574.36	1,567.96	7.72	6.42	-119.69	-450.20	-789.56	912.49	898.44	14.05	64.954	
1,600.00	1,600.00	1,671.02	1,664.21	8.26	6.96	-119.93	-449.45	-780.71	904.14	889.02	15.12	59.787	
1,700.00	1,700.00	1,787.51	1,780.07	8.80	7.61	-120.26	-448.38	-768.64	894.72	878.40	16.32	54.837	
1,800.00	1,800.00	1,878.75	1,870.71	9.33	8.14	-120.55	-447.45	-758.23	884.38	867.01	17.37	50.911	
1,900.00	1,899.98	1,960.14	1,951.73	9.86	8.59	-19.78	-447.05	-750.49	874.31	856.14	18.17	48.122	
2,000.00	1,999.84	2,047.33	2,038.67	10.37	9.08	-20.17	-446.79	-744.06	862.90	843.80	19.10	45.177	
2,100.00	2,099.45	2,144.77	2,135.90	10.88	9.61	-20.68	-446.56	-737.53	848.91	828.84	20.07	42.301	
2,200.00	2,198.70	2,245.02	2,235.93	11.41	10.16	-21.34	-446.19	-730.79	831.67	810.63	21.03	39.537	
2,300.00	2,297.47	2,345.23	2,335.89	11.94	10.71	-22.14	-445.60	-723.83	811.01	789.02	21.98	36.892	
2,400.00	2,395.62	2,444.43	2,434.82	12.49	11.25	-23.10	-444.77	-716.69	786.98	764.07	22.91	34.353	
2,500.00	2,493.06	2,541.92	2,532.04	13.06	11.79	-24.25	-443.73	-709.47	759.71	735.90	23.81	31.903	
2,600.00	2,589.64	2,642.71	2,632.52	13.66	12.35	-25.70	-442.49	-701.56	729.19	704.45	24.73	29.484	
2,700.00	2,685.27	2,743.37	2,732.73	14.29	12.92	-27.55	-441.36	-692.19	694.93	669.27	25.66	27.079	
2,800.00	2,779.82	2,835.41	2,824.26	14.95	13.45	-29.72	-440.58	-682.56	657.57	631.00	26.57	24.744	
2,900.00	2,873.17	2,924.16	2,912.52	15.66	13.96	-32.28	-439.90	-673.25	618.12	590.60	27.51	22.466	
3,000.00	2,965.21	3,011.43	2,999.33	16.42	14.46	-35.33	-439.06	-664.30	576.93	548.41	28.52	20.226	
3,100.00	3,055.84	3,098.04	3,085.49	17.24	14.95	-39.02	-438.07	-655.55	534.42	504.76	29.66	18.019	
3,200.00	3,144.94	3,183.32	3,170.31	18.12	15.44	-43.50	-436.96	-646.78	491.01	460.04	30.97	15.852	
3,300.00	3,232.39	3,266.48	3,252.99	19.07	15.92	-48.91	-435.74	-638.05	447.66	415.12	32.53	13.759	
3,400.00	3,318.33	3,347.04	3,333.08	20.09	16.38	-54.96	-434.43	-629.37	405.93	371.52	34.41	11.796	
3,500.00	3,404.05	3,424.22	3,409.82	21.16	16.83	-61.30	-433.39	-621.17	369.39	332.92	36.46	10.130	
3,600.00	3,489.76	3,497.97	3,483.22	22.27	17.25	-68.06	-433.09	-614.09	340.65	302.11	38.54	8.839	
3,700.00	3,575.48	3,574.75	3,559.78	23.40	17.67	-75.56	-433.80	-608.38	321.70	281.09	40.61	7.922	
3,800.00	3,661.19	3,656.89	3,641.83	24.56	18.11	-83.69	-435.23	-604.71	312.81	270.26	42.55	7.352	
3,848.69	3,702.93	3,698.87	3,683.78	25.13	18.33	-87.81	-435.96	-603.63	311.79	268.39	43.40	7.184 CC, ES	
3,900.00	3,746.90	3,743.24	3,728.15	25.74	18.55	-92.09	-436.67	-602.92	312.90	268.70	44.20	7.079	
4,000.00	3,832.62	3,830.41	3,815.30	26.94	18.99	-100.28	-437.89	-601.95	321.30	275.80	45.50	7.062 SF	
4,100.00	3,918.33	3,919.17	3,904.06	28.16	19.42	-108.07	-438.58	-601.79	336.80	290.35	46.44	7.252	
4,200.00	4,004.05	4,004.58	3,989.46	29.39	19.83	-114.93	-439.10	-601.91	358.79	311.66	47.14	7.612	
4,300.00	4,089.76	4,089.94	4,074.82	30.64	20.23	-121.08	-439.72	-601.98	386.49	338.82	47.67	8.108	
4,400.00	4,175.48	4,176.15	4,161.03	31.89	20.65	-126.56	-440.38	-602.06	418.69	370.57	48.12	8.701	
4,500.00	4,261.19	4,262.47	4,247.35	33.16	21.07	-131.34	-441.01	-602.23	454.32	405.77	48.55	9.357	
4,600.00	4,346.91	4,348.97	4,333.85	34.43	21.48	-135.50	-441.64	-602.50	492.61	443.61	49.01	10.052	
4,700.00	4,432.62	4,435.12	4,419.98	35.72	21.90	-139.08	-442.36	-602.91	532.98	483.47	49.51	10.765	
4,800.00	4,518.33	4,521.62	4,506.49	37.01	22.32	-142.20	-443.18	-603.39	575.01	524.94	50.07	11.484	
4,900.00	4,604.83	4,609.65	4,594.51	38.28	22.74	-145.38	-443.97	-603.99	617.12	566.20	50.91	12.121	
5,000.00	4,693.02	4,699.90	4,684.75	39.48	23.17	-148.07	-444.68	-604.78	657.37	605.49	51.89	12.670	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design													HH SO 8 P2 - 22HA - OH / Job #61217 - Surveys (Patterson 815)		Offset Site Error: 0.00 usft	
Survey Program: 174-MWD, 434-MWD+HDGM													Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
5,100.00	4,782.80	4,792.14	4,776.98	40.62	23.62	-150.30	-445.48	-605.87	695.36	642.41	52.95	13.133				
5,200.00	4,874.07	4,885.32	4,870.14	41.68	24.06	-152.13	-446.38	-607.26	730.78	676.71	54.07	13.514				
5,300.00	4,966.70	4,978.61	4,963.42	42.69	24.52	-153.63	-447.49	-608.75	763.60	708.37	55.23	13.825				
5,400.00	5,060.59	5,073.62	5,058.41	43.62	24.98	-154.87	-448.90	-610.36	793.69	737.28	56.41	14.070				
5,500.00	5,155.63	5,170.49	5,155.25	44.48	25.45	-155.88	-450.53	-612.16	820.80	763.21	57.59	14.253				
5,600.00	5,251.69	5,269.74	5,254.46	45.28	25.93	-156.72	-452.27	-614.20	844.77	786.02	58.75	14.379				
5,700.00	5,348.66	5,370.06	5,354.75	46.02	26.42	-157.43	-453.35	-616.56	865.29	805.42	59.87	14.453				
5,800.00	5,446.43	5,470.91	5,455.56	46.69	26.91	-158.04	-453.77	-619.01	882.51	821.56	60.94	14.481				
5,900.00	5,544.87	5,573.54	5,558.14	47.30	27.41	-158.49	-454.48	-621.99	896.15	834.17	61.98	14.458				
6,000.00	5,643.86	5,663.28	5,647.85	47.85	27.85	-158.80	-455.12	-624.54	906.70	843.79	62.91	14.413				
6,100.00	5,743.29	5,742.14	5,726.71	48.35	28.25	-159.05	-455.06	-625.24	915.81	852.09	63.71	14.374				
6,200.00	5,843.02	5,823.95	5,808.49	48.79	28.67	-159.31	-454.22	-623.68	924.17	859.71	64.46	14.337				
6,300.00	5,942.95	5,927.05	5,911.56	49.19	29.21	-159.53	-452.98	-621.21	929.79	864.55	65.25	14.250				
6,400.00	6,042.94	6,031.70	6,016.18	49.53	29.76	99.24	-451.70	-619.14	932.06	865.81	66.25	14.068				
6,500.00	6,142.94	6,135.23	6,119.68	49.88	30.30	99.15	-450.36	-617.64	933.29	866.08	67.20	13.887				
6,600.00	6,242.94	6,234.78	6,219.22	50.22	30.82	99.08	-449.52	-616.41	934.37	866.23	68.15	13.712				
6,700.00	6,342.94	6,336.85	6,321.28	50.57	31.36	99.04	-449.02	-615.18	935.48	866.38	69.11	13.537				
6,800.00	6,442.94	6,440.08	6,424.51	50.92	31.89	99.00	-448.41	-614.31	936.22	866.15	70.08	13.360				
6,900.00	6,542.94	6,540.82	6,525.25	51.28	32.42	98.95	-447.76	-613.68	936.74	865.71	71.03	13.187				
7,000.00	6,642.94	6,642.95	6,627.38	51.64	32.95	98.90	-447.06	-613.16	937.14	865.14	72.00	13.016				
7,100.00	6,742.94	6,745.28	6,729.70	52.00	33.48	98.86	-446.40	-612.90	937.29	864.33	72.97	12.846				
7,200.00	6,842.94	6,849.85	6,834.27	52.36	34.00	98.84	-445.97	-613.09	937.04	863.10	73.94	12.673				
7,300.00	6,942.94	6,948.35	6,932.76	52.73	34.50	98.83	-445.83	-613.44	936.67	861.79	74.89	12.508				
7,400.00	7,042.94	7,048.03	7,032.45	53.10	35.00	98.83	-445.71	-613.74	936.36	860.52	75.84	12.346				
7,500.00	7,142.94	7,145.75	7,130.16	53.47	35.50	98.81	-445.35	-613.79	936.25	859.46	76.79	12.192				
7,600.00	7,242.94	7,246.34	7,230.75	53.85	36.01	98.78	-444.82	-613.78	936.18	858.42	77.76	12.039				
7,685.35	7,328.30	7,330.88	7,315.30	54.17	36.45	98.75	-444.37	-613.76	936.13	857.54	78.59	11.912				
7,700.00	7,342.94	7,345.11	7,329.52	54.23	36.52	98.74	-444.29	-613.75	936.13	857.41	78.73	11.891				
7,800.00	7,442.94	7,441.90	7,426.31	54.61	37.03	98.72	-443.92	-613.49	936.34	856.65	79.69	11.750				
7,900.00	7,542.94	7,538.09	7,522.50	54.99	37.53	98.74	-444.29	-612.97	936.93	856.27	80.66	11.616				
8,000.00	7,642.94	7,632.57	7,616.97	55.38	38.02	98.79	-445.30	-612.14	937.96	856.33	81.63	11.491				
8,100.00	7,742.94	7,724.97	7,709.35	55.77	38.51	98.87	-446.91	-610.68	939.79	857.19	82.59	11.378				
8,200.00	7,842.94	7,821.87	7,806.19	56.16	39.02	99.01	-449.49	-608.70	942.22	858.62	83.60	11.271				
8,300.00	7,942.94	7,922.34	7,906.58	56.56	39.55	99.20	-452.92	-606.74	944.69	860.06	84.63	11.163				
8,400.00	8,042.94	8,022.13	8,006.27	56.95	40.07	99.42	-456.95	-604.87	947.19	861.53	85.66	11.058				
8,500.00	8,142.94	8,123.73	8,107.74	57.35	40.61	99.69	-461.77	-603.16	949.64	862.93	86.71	10.952				
8,600.00	8,242.94	8,264.00	8,247.88	57.75	41.33	99.98	-466.51	-604.23	949.31	861.35	87.96	10.793				
8,700.00	8,342.94	8,359.00	8,342.81	58.16	41.81	100.14	-468.91	-606.15	947.75	858.81	88.95	10.655				
8,712.83	8,355.77	8,359.00	8,342.81	58.21	41.81	100.14	-468.91	-606.15	947.67	858.66	89.01	10.647				
8,800.00	8,442.94	8,429.83	8,413.55	58.56	42.18	100.35	-472.44	-605.51	949.07	859.24	89.83	10.566				
8,900.00	8,542.94	8,543.78	8,527.35	58.97	42.77	100.68	-478.10	-605.10	950.36	859.41	90.95	10.449				
9,000.00	8,642.94	8,702.50	8,685.69	59.38	43.57	100.37	-472.38	-608.29	947.82	855.63	92.19	10.281				
9,100.00	8,742.94	8,826.35	8,803.92	59.79	44.15	98.24	-436.40	-610.97	940.63	847.69	92.93	10.122				
9,200.00	8,842.94	9,200.00	8,933.30	60.20	45.99	92.17	-336.96	-616.38	929.05	834.75	94.30	9.852				
9,300.00	8,942.94	9,007.00	8,944.07	60.62	44.78	91.47	-325.65	-617.16	922.25	828.44	93.82	9.830				
9,315.03	8,957.97	9,007.00	8,944.07	60.68	44.78	-87.70	-325.65	-617.16	922.14	828.35	93.79	9.832				
9,400.00	9,042.54	9,007.00	8,944.07	61.03	44.78	-87.32	-325.65	-617.16	925.83	831.63	94.20	9.829				
9,500.00	9,139.32	9,007.00	8,944.07	61.44	44.78	-85.97	-325.65	-617.16	939.26	844.55	94.71	9.917				
9,600.00	9,230.35	9,007.00	8,944.07	61.85	44.78	-83.67	-325.65	-617.16	961.74	866.59	95.15	10.108				
9,700.00	9,312.86	9,007.00	8,944.07	62.24	44.78	-80.52	-325.65	-617.16	992.01	896.71	95.30	10.409				
9,800.00	9,384.34	9,007.00	8,944.07	62.61	44.78	-76.68	-325.65	-617.16	1,028.49	933.68	94.81	10.848				
9,900.00	9,442.63	9,007.00	8,944.07	62.95	44.78	-72.34	-325.65	-617.16	1,069.52	976.23	93.29	11.464				

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 22HA - OH / Job #61217 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 434-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
10,000.00	9,485.95	9,007.00	8,944.07	63.28	44.78	-67.75	-325.65	-617.16	1,113.41	1,022.89	90.53	12.299	
10,100.00	9,512.99	9,007.00	8,944.07	63.61	44.78	-63.15	-325.65	-617.16	1,158.58	1,071.93	86.65	13.370	
10,200.00	9,522.91	9,007.00	8,944.07	63.96	44.78	-58.74	-325.65	-617.16	1,203.60	1,121.29	82.31	14.622	
10,300.00	9,521.18	8,970.37	8,920.47	64.35	44.67	-56.98	-353.56	-615.03	1,248.37	1,167.41	80.96	15.419	
10,400.00	9,519.14	8,928.00	8,889.79	64.79	44.55	-55.73	-382.69	-613.24	1,298.28	1,218.02	80.26	16.176	
10,500.00	9,517.10	8,928.00	8,889.79	65.30	44.55	-55.73	-382.69	-613.24	1,351.78	1,270.84	80.94	16.701	
10,600.00	9,515.06	8,928.00	8,889.79	65.87	44.55	-55.73	-382.69	-613.24	1,410.34	1,328.65	81.69	17.264	
10,700.00	9,513.02	8,928.00	8,889.79	66.50	44.55	-55.73	-382.69	-613.24	1,473.38	1,390.86	82.52	17.856	
10,800.00	9,510.98	8,879.82	8,851.00	67.20	44.36	-54.17	-411.17	-611.88	1,537.13	1,455.40	81.72	18.809	
10,900.00	9,508.93	8,834.00	8,810.88	67.97	44.18	-52.60	-433.22	-611.07	1,607.17	1,526.22	80.95	19.854	
11,000.00	9,506.89	8,834.00	8,810.88	68.81	44.18	-52.60	-433.22	-611.07	1,677.60	1,595.66	81.94	20.474	
11,100.00	9,504.85	8,834.00	8,810.88	69.71	44.18	-52.60	-433.22	-611.07	1,750.91	1,667.92	82.98	21.099	
11,200.00	9,502.81	8,834.00	8,810.88	70.68	44.18	-52.60	-433.22	-611.07	1,826.75	1,742.67	84.08	21.726	
11,300.00	9,500.77	8,834.00	8,810.88	71.71	44.18	-52.60	-433.22	-611.07	1,904.82	1,819.60	85.22	22.351	
11,400.00	9,498.73	8,834.00	8,810.88	72.80	44.18	-52.60	-433.22	-611.07	1,984.86	1,898.46	86.41	22.971	
11,500.00	9,496.69	8,834.00	8,810.88	73.95	44.18	-52.60	-433.22	-611.07	2,066.64	1,979.01	87.63	23.583	
11,600.00	9,494.65	8,834.00	8,810.88	75.16	44.18	-52.60	-433.22	-611.07	2,149.97	2,061.07	88.90	24.185	
11,700.00	9,492.61	8,834.00	8,810.88	76.41	44.18	-52.60	-433.22	-611.07	2,234.66	2,144.46	90.20	24.776	
11,800.00	9,490.57	8,834.00	8,810.88	77.72	44.18	-52.60	-433.22	-611.07	2,320.57	2,229.04	91.53	25.354	
11,900.00	9,488.53	8,789.68	8,769.81	79.07	43.98	-51.06	-449.82	-610.35	2,404.86	2,313.80	91.06	26.409	
12,000.00	9,486.49	8,784.68	8,765.08	80.46	43.96	-50.89	-451.41	-610.25	2,492.19	2,399.96	92.23	27.022	
12,100.00	9,484.44	8,780.01	8,760.63	81.89	43.94	-50.73	-452.84	-610.15	2,580.38	2,486.95	93.43	27.617	
12,200.00	9,482.40	8,739.00	8,720.98	83.36	43.75	-49.32	-463.20	-609.13	2,671.19	2,578.06	93.13	28.682	
12,300.00	9,480.36	8,739.00	8,720.98	84.86	43.75	-49.32	-463.20	-609.13	2,760.48	2,665.92	94.56	29.192	
12,400.00	9,478.32	8,739.00	8,720.98	86.40	43.75	-49.32	-463.20	-609.13	2,850.48	2,754.46	96.02	29.688	
12,500.00	9,476.28	8,739.00	8,720.98	87.96	43.75	-49.32	-463.20	-609.13	2,941.12	2,843.63	97.49	30.169	
12,600.00	9,474.24	8,739.00	8,720.98	89.55	43.75	-49.32	-463.20	-609.13	3,032.35	2,933.38	98.98	30.637	
12,700.00	9,472.20	8,730.00	8,712.30	91.17	43.71	-49.02	-465.55	-608.92	3,124.06	3,023.97	100.09	31.211	
12,800.00	9,470.16	8,730.00	8,712.30	92.82	43.71	-49.02	-465.55	-608.92	3,216.24	3,114.63	101.61	31.652	
12,900.00	9,468.12	8,730.00	8,712.30	94.48	43.71	-49.02	-465.55	-608.92	3,308.88	3,205.74	103.14	32.081	
13,000.00	9,466.08	8,730.00	8,712.30	96.17	43.71	-49.02	-465.55	-608.92	3,401.93	3,297.25	104.69	32.496	
13,100.00	9,464.04	8,730.00	8,712.30	97.88	43.71	-49.02	-465.55	-608.92	3,495.37	3,389.13	106.24	32.900	
13,200.00	9,461.99	8,711.16	8,694.17	99.61	43.61	-48.40	-470.64	-608.51	3,588.20	3,481.22	106.98	33.541	
13,300.00	9,459.95	8,709.94	8,692.99	101.36	43.61	-48.36	-470.91	-608.48	3,682.19	3,573.69	108.50	33.938	
13,400.00	9,457.91	8,691.00	8,674.33	103.12	43.51	-47.74	-474.09	-607.97	3,777.34	3,668.11	109.22	34.583	
13,500.00	9,455.87	8,691.00	8,674.33	104.90	43.51	-47.74	-474.09	-607.97	3,871.80	3,761.00	110.81	34.942	
13,600.00	9,453.83	8,691.00	8,674.33	106.70	43.51	-47.74	-474.09	-607.97	3,966.54	3,854.14	112.40	35.290	
13,700.00	9,451.79	8,691.00	8,674.33	108.50	43.51	-47.74	-474.09	-607.97	4,061.53	3,947.53	114.00	35.628	
13,800.00	9,449.75	8,691.00	8,674.33	110.33	43.51	-47.74	-474.09	-607.97	4,156.76	4,041.15	115.61	35.956	
13,900.00	9,447.71	8,691.00	8,674.33	112.16	43.51	-47.74	-474.09	-607.97	4,252.21	4,134.98	117.22	36.275	
14,000.00	9,445.67	8,691.00	8,674.33	114.01	43.51	-47.74	-474.09	-607.97	4,347.86	4,229.01	118.84	36.584	
14,100.00	9,443.63	8,691.00	8,674.33	115.87	43.51	-47.74	-474.09	-607.97	4,443.70	4,323.23	120.47	36.885	
14,200.00	9,441.59	8,691.00	8,674.33	117.74	43.51	-47.74	-474.09	-607.97	4,539.72	4,417.61	122.11	37.178	
14,300.00	9,439.54	8,691.00	8,674.33	119.62	43.51	-47.74	-474.09	-607.97	4,635.91	4,512.16	123.75	37.463	
14,400.00	9,437.50	8,691.00	8,674.33	121.51	43.51	-47.74	-474.09	-607.97	4,732.26	4,606.86	125.39	37.739	
14,500.00	9,435.46	8,691.00	8,674.33	123.41	43.51	-47.74	-474.09	-607.97	4,828.75	4,701.71	127.04	38.009	
14,600.00	9,433.42	8,691.00	8,674.33	125.32	43.51	-47.74	-474.09	-607.97	4,925.39	4,796.69	128.70	38.270	
14,700.00	9,431.38	8,691.00	8,674.33	127.24	43.51	-47.74	-474.09	-607.97	5,022.16	4,891.80	130.36	38.525	
14,800.00	9,429.34	8,691.00	8,674.33	129.16	43.51	-47.74	-474.09	-607.97	5,119.05	4,987.02	132.02	38.773	
14,900.00	9,427.46	8,691.00	8,674.33	131.09	43.51	-48.14	-474.09	-607.97	5,216.10	5,081.57	134.54	38.770	
15,000.00	9,426.77	8,691.00	8,674.33	133.03	43.51	-48.36	-474.09	-607.97	5,313.62	5,176.95	136.67	38.878	
15,100.00	9,426.12	8,691.00	8,674.33	134.98	43.51	-48.36	-474.09	-607.97	5,411.24	5,272.88	138.36	39.111	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 22HA - OH / Job #61217 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 434-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,200.00	9,425.48	8,691.00	8,674.33	136.93	43.51	-48.36	-474.09	-607.97	5,508.94	5,368.90	140.04	39.338	
15,300.00	9,424.83	8,691.00	8,674.33	138.89	43.51	-48.36	-474.09	-607.97	5,606.73	5,465.00	141.73	39.559	
15,400.00	9,424.18	8,691.00	8,674.33	140.85	43.51	-48.36	-474.09	-607.97	5,704.59	5,561.17	143.42	39.775	
15,500.00	9,423.54	8,691.00	8,674.33	142.82	43.51	-48.36	-474.09	-607.97	5,802.52	5,657.41	145.12	39.985	
15,600.00	9,422.89	8,691.00	8,674.33	144.80	43.51	-48.36	-474.09	-607.97	5,900.53	5,753.71	146.81	40.190	
15,700.00	9,422.25	8,691.00	8,674.33	146.78	43.51	-48.36	-474.09	-607.97	5,998.60	5,850.08	148.52	40.390	
15,800.00	9,421.60	8,691.00	8,674.33	148.77	43.51	-48.36	-474.09	-607.97	6,096.73	5,946.51	150.22	40.586	
15,900.00	9,420.95	8,691.00	8,674.33	150.76	43.51	-48.36	-474.09	-607.97	6,194.92	6,042.99	151.93	40.776	
16,000.00	9,420.31	8,691.00	8,674.33	152.75	43.51	-48.36	-474.09	-607.97	6,293.17	6,139.53	153.63	40.962	
16,100.00	9,419.66	8,691.00	8,674.33	154.75	43.51	-48.36	-474.09	-607.97	6,391.47	6,236.13	155.35	41.143	
16,200.00	9,419.01	8,691.00	8,674.33	156.76	43.51	-48.36	-474.09	-607.97	6,489.83	6,332.77	157.06	41.321	
16,300.00	9,418.37	8,691.00	8,674.33	158.77	43.51	-48.36	-474.09	-607.97	6,588.23	6,429.46	158.78	41.494	
16,400.00	9,417.72	8,691.00	8,674.33	160.78	43.51	-48.36	-474.09	-607.97	6,686.68	6,526.19	160.49	41.663	
16,500.00	9,417.08	8,691.00	8,674.33	162.80	43.51	-48.36	-474.09	-607.97	6,785.18	6,622.97	162.21	41.829	
16,600.00	9,416.43	8,691.00	8,674.33	164.82	43.51	-48.36	-474.09	-607.97	6,883.72	6,719.79	163.94	41.990	
16,700.00	9,415.78	8,691.00	8,674.33	166.84	43.51	-48.36	-474.09	-607.97	6,982.30	6,816.64	165.66	42.149	
16,800.00	9,415.14	8,691.00	8,674.33	168.86	43.51	-48.36	-474.09	-607.97	7,080.92	6,913.54	167.38	42.303	
16,900.00	9,414.49	8,691.00	8,674.33	170.89	43.51	-48.36	-474.09	-607.97	7,179.58	7,010.47	169.11	42.455	
17,000.00	9,413.84	8,691.00	8,674.33	172.93	43.51	-48.36	-474.09	-607.97	7,278.28	7,107.44	170.84	42.603	
17,100.00	9,413.20	8,691.00	8,674.33	174.96	43.51	-48.36	-474.09	-607.97	7,377.01	7,204.44	172.57	42.748	
17,200.00	9,412.55	8,691.00	8,674.33	177.00	43.51	-48.36	-474.09	-607.97	7,475.78	7,301.47	174.30	42.889	
17,300.00	9,411.91	8,691.00	8,674.33	179.04	43.51	-48.36	-474.09	-607.97	7,574.58	7,398.54	176.04	43.028	
17,400.00	9,411.26	8,691.00	8,674.33	181.09	43.51	-48.36	-474.09	-607.97	7,673.40	7,495.63	177.77	43.164	
17,500.00	9,410.61	8,691.00	8,674.33	183.13	43.51	-48.36	-474.09	-607.97	7,772.26	7,592.75	179.51	43.297	
17,600.00	9,409.97	8,691.00	8,674.33	185.18	43.51	-48.36	-474.09	-607.97	7,871.15	7,689.90	181.25	43.428	
17,700.00	9,409.32	8,691.00	8,674.33	187.24	43.51	-48.36	-474.09	-607.97	7,970.07	7,787.08	182.99	43.556	
17,800.00	9,408.67	8,691.00	8,674.33	189.29	43.51	-48.36	-474.09	-607.97	8,069.01	7,884.28	184.73	43.681	
17,900.00	9,408.03	8,691.00	8,674.33	191.35	43.51	-48.36	-474.09	-607.97	8,167.98	7,981.51	186.47	43.804	
18,000.00	9,407.38	8,691.00	8,674.33	193.40	43.51	-48.36	-474.09	-607.97	8,266.97	8,078.76	188.21	43.924	
18,100.00	9,406.73	8,691.00	8,674.33	195.47	43.51	-48.36	-474.09	-607.97	8,365.99	8,176.03	189.95	44.042	
18,200.00	9,406.09	8,691.00	8,674.33	197.53	43.51	-48.36	-474.09	-607.97	8,465.03	8,273.33	191.70	44.158	
18,300.00	9,405.44	8,691.00	8,674.33	199.59	43.51	-48.36	-474.09	-607.97	8,564.09	8,370.64	193.44	44.271	
18,400.00	9,404.80	8,691.00	8,674.33	201.66	43.51	-48.36	-474.09	-607.97	8,663.17	8,467.98	195.19	44.383	
18,500.00	9,404.15	8,668.99	8,652.45	203.73	43.40	-47.59	-476.36	-607.34	8,761.91	8,566.57	195.33	44.856	
18,600.00	9,403.50	8,668.30	8,651.76	205.80	43.40	-47.56	-476.42	-607.32	8,861.01	8,663.99	197.02	44.975	
18,700.00	9,402.86	8,667.63	8,651.09	207.87	43.40	-47.54	-476.48	-607.30	8,960.13	8,761.42	198.71	45.092	
18,800.00	9,402.21	8,666.96	8,650.43	209.94	43.39	-47.52	-476.53	-607.28	9,059.27	8,858.87	200.40	45.206	
18,900.00	9,401.56	8,666.31	8,649.78	212.02	43.39	-47.49	-476.59	-607.26	9,158.42	8,956.33	202.09	45.319	
19,000.00	9,400.92	8,644.00	8,627.53	214.10	43.28	-46.73	-478.10	-606.63	9,257.96	9,055.79	202.17	45.793	
19,100.00	9,400.27	8,644.00	8,627.53	216.18	43.28	-46.73	-478.10	-606.63	9,357.13	9,153.23	203.90	45.891	
19,200.00	9,399.63	8,644.00	8,627.53	218.26	43.28	-46.73	-478.10	-606.63	9,456.32	9,250.69	205.63	45.988	
19,300.00	9,398.98	8,644.00	8,627.53	220.34	43.28	-46.73	-478.10	-606.63	9,555.52	9,348.17	207.36	46.082	
19,400.00	9,398.33	8,644.00	8,627.53	222.42	43.28	-46.73	-478.10	-606.63	9,654.74	9,445.66	209.09	46.176	
19,500.00	9,397.69	8,644.00	8,627.53	224.50	43.28	-46.73	-478.10	-606.63	9,753.98	9,543.16	210.82	46.267	
19,600.00	9,397.04	8,644.00	8,627.53	226.59	43.28	-46.73	-478.10	-606.63	9,853.23	9,640.68	212.55	46.357	
19,700.00	9,396.39	8,644.00	8,627.53	228.68	43.28	-46.73	-478.10	-606.63	9,952.50	9,738.22	214.28	46.445	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 5HC - OH / Job #61218 - Surveys (Patterson 815)												Offset Site Error: 0.00 usft
Survey Program: 262-MWD, 430-MWD+HDGM												Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
0.00	0.00	0.00	0.00	0.00	0.00	-116.82	-458.01	-906.00	1,015.27			
100.00	100.00	85.86	85.86	0.19	0.13	-116.81	-457.98	-906.07	1,015.24	1,014.91	0.32	3,142.551
200.00	200.00	184.54	184.54	0.73	0.28	-116.80	-457.88	-906.31	1,015.41	1,014.41	1.01	1,005.757
300.00	300.00	284.20	284.20	1.27	0.46	-116.79	-457.73	-906.72	1,015.71	1,013.98	1.73	586.608
400.00	400.00	387.53	387.53	1.81	0.78	-116.82	-458.28	-906.58	1,015.82	1,013.24	2.59	392.753
500.00	500.00	501.57	501.55	2.34	1.04	-116.92	-459.58	-905.22	1,015.30	1,011.92	3.38	299.993
600.00	600.00	605.94	605.89	2.88	1.33	-117.02	-460.46	-902.80	1,013.62	1,009.41	4.21	240.495
700.00	700.00	704.05	703.95	3.42	1.64	-117.16	-461.71	-899.97	1,011.64	1,006.58	5.06	199.974
781.74	781.74	768.87	768.75	3.86	1.92	-117.24	-462.79	-898.81	1,010.95	1,005.18	5.78	174.957
800.00	800.00	784.10	783.97	3.96	1.99	-117.26	-463.07	-898.70	1,010.99	1,005.04	5.94	170.099
900.00	900.00	880.77	880.62	4.50	2.44	-117.37	-464.99	-898.19	1,011.44	1,004.50	6.93	145.886
1,000.00	1,000.00	973.42	973.27	5.03	2.89	-117.42	-466.17	-898.62	1,012.43	1,004.52	7.91	127.932
1,100.00	1,100.00	1,066.40	1,066.23	5.57	3.33	-117.36	-466.02	-900.49	1,014.15	1,005.25	8.90	113.991
1,200.00	1,200.00	1,166.93	1,166.72	6.11	3.83	-117.26	-465.28	-903.16	1,016.17	1,006.24	9.93	102.334
1,300.00	1,300.00	1,265.07	1,264.82	6.65	4.31	-117.16	-464.67	-905.67	1,018.16	1,007.21	10.95	92.956
1,400.00	1,400.00	1,351.86	1,351.55	7.18	4.75	-117.04	-463.90	-908.87	1,021.03	1,009.10	11.93	85.572
1,500.00	1,500.00	1,452.34	1,451.92	7.72	5.27	-116.86	-462.59	-913.33	1,024.40	1,011.41	12.99	78.878
1,600.00	1,600.00	1,541.12	1,540.56	8.26	5.73	-116.66	-460.90	-918.13	1,028.37	1,014.38	13.99	73.524
1,700.00	1,700.00	1,630.00	1,629.22	8.80	6.20	-116.42	-459.13	-923.95	1,033.36	1,018.36	14.99	68.928
1,800.00	1,800.00	1,712.38	1,711.33	9.33	6.63	-116.19	-457.70	-930.49	1,039.73	1,023.76	15.97	65.113
1,900.00	1,899.98	1,819.00	1,817.54	9.86	7.21	-14.77	-455.80	-939.66	1,045.00	1,027.96	17.04	61.337
2,000.00	1,999.84	1,898.56	1,896.77	10.37	7.64	-14.60	-454.71	-946.73	1,047.39	1,029.45	17.95	58.358
2,100.00	2,099.45	1,968.46	1,966.24	10.88	8.03	-14.48	-454.61	-954.49	1,048.94	1,030.14	18.79	55.811
2,200.00	2,198.70	2,053.16	2,050.15	11.41	8.50	-14.40	-455.56	-965.98	1,049.79	1,030.08	19.70	53.280
2,300.00	2,297.47	2,154.82	2,150.89	11.94	9.08	-14.38	-456.98	-979.58	1,047.29	1,026.60	20.69	50.623
2,400.00	2,395.62	2,250.70	2,245.87	12.49	9.62	-14.43	-458.65	-992.53	1,041.68	1,020.06	21.62	48.176
2,500.00	2,493.06	2,354.81	2,348.99	13.06	10.22	-14.55	-460.45	-1,006.75	1,032.84	1,010.26	22.58	45.735
2,600.00	2,589.64	2,467.01	2,460.21	13.66	10.87	-14.70	-460.91	-1,021.56	1,019.66	996.08	23.57	43.263
2,700.00	2,685.27	2,581.04	2,573.38	14.29	11.53	-14.90	-460.13	-1,035.46	1,001.77	977.23	24.54	40.819
2,800.00	2,779.82	2,710.06	2,701.86	14.95	12.25	-15.33	-459.25	-1,047.04	977.60	952.03	25.57	38.237
2,900.00	2,873.17	2,805.72	2,797.25	15.66	12.78	-15.84	-458.80	-1,054.29	949.22	922.83	26.39	35.972
3,000.00	2,965.21	2,899.37	2,890.63	16.42	13.31	-16.45	-458.41	-1,061.48	917.78	890.60	27.18	33.769
3,100.00	3,055.84	2,991.88	2,982.87	17.24	13.82	-17.22	-458.32	-1,068.49	883.30	855.35	27.95	31.602
3,200.00	3,144.94	3,082.34	3,073.07	18.12	14.32	-18.14	-458.49	-1,075.42	845.99	817.28	28.71	29.467
3,300.00	3,232.39	3,175.83	3,166.28	19.07	14.84	-19.29	-458.79	-1,082.60	805.83	776.34	29.49	27.323
3,400.00	3,318.33	3,287.30	3,277.51	20.09	15.46	-20.75	-458.57	-1,089.77	762.09	731.50	30.60	24.908
3,500.00	3,404.05	3,387.75	3,377.89	21.16	16.00	-22.16	-457.16	-1,093.07	715.13	683.26	31.87	22.438
3,600.00	3,489.76	3,472.00	3,462.10	22.27	16.44	-23.53	-456.08	-1,095.71	668.49	635.39	33.10	20.196
3,700.00	3,575.48	3,557.52	3,547.56	23.40	16.90	-25.11	-455.21	-1,098.64	622.58	588.18	34.40	18.100
3,800.00	3,661.19	3,644.44	3,634.42	24.56	17.37	-26.97	-454.35	-1,101.71	577.22	541.44	35.78	16.133
3,900.00	3,746.90	3,730.76	3,720.68	25.74	17.83	-29.10	-453.56	-1,104.89	532.59	495.34	37.25	14.298
4,000.00	3,832.62	3,817.69	3,807.54	26.94	18.30	-31.60	-452.80	-1,108.22	488.84	450.00	38.84	12.586
4,100.00	3,918.33	3,904.73	3,894.52	28.16	18.77	-34.56	-452.10	-1,111.65	446.16	405.58	40.58	10.995
4,200.00	4,004.05	3,994.85	3,984.59	29.39	19.26	-38.31	-451.65	-1,114.56	404.51	361.95	42.56	9.505
4,300.00	4,089.76	4,082.42	4,072.13	30.64	19.72	-42.88	-451.66	-1,116.38	364.34	319.57	44.77	8.137
4,400.00	4,175.48	4,168.88	4,158.58	31.89	20.18	-48.42	-451.90	-1,117.81	326.80	279.53	47.27	6.913
4,500.00	4,261.19	4,255.22	4,244.91	33.16	20.64	-55.05	-452.10	-1,119.41	293.06	243.01	50.06	5.854
4,600.00	4,346.91	4,341.76	4,331.44	34.43	21.10	-62.98	-452.36	-1,121.07	264.57	211.51	53.07	4.986
4,700.00	4,432.62	4,428.53	4,418.18	35.72	21.56	-72.20	-452.59	-1,122.88	243.05	186.96	56.09	4.333
4,800.00	4,518.33	4,516.40	4,506.03	37.01	22.03	-82.64	-452.70	-1,124.65	230.30	171.51	58.79	3.917
4,878.48	4,586.12	4,585.80	4,575.42	38.00	22.39	-91.18	-452.29	-1,125.50	227.15	166.76	60.39	3.761 CC
4,900.00	4,604.83	4,604.65	4,594.27	38.28	22.49	-93.50	-452.13	-1,125.69	227.39	166.65	60.73	3.744 ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 5HC - OH / Job #61218 - Surveys (Patterson 815)													Offset Site Error:	0.00 usft
Survey Program: 262-MWD, 430-MWD+HDGM													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.00	4,693.02	4,693.33	4,682.95	39.48	22.96	-103.84	-451.31	-1,126.49	234.07	172.27	61.80	3.788		
5,100.00	4,782.80	4,783.65	4,773.26	40.62	23.43	-113.08	-450.51	-1,127.46	247.99	185.75	62.23	3.985		
5,200.00	4,874.07	4,875.33	4,864.93	41.68	23.91	-121.01	-449.43	-1,128.24	266.44	204.08	62.36	4.273		
5,300.00	4,966.70	4,968.00	4,957.59	42.69	24.39	-127.63	-447.90	-1,128.61	287.35	224.93	62.41	4.604		
5,400.00	5,060.59	5,061.95	5,051.52	43.62	24.87	-133.07	-446.10	-1,128.79	309.12	246.58	62.54	4.943		
5,500.00	5,155.63	5,156.03	5,145.58	44.48	25.35	-137.42	-444.26	-1,129.00	330.56	267.75	62.80	5.263		
5,600.00	5,251.69	5,246.80	5,236.34	45.28	25.81	-140.73	-443.25	-1,128.55	351.79	288.58	63.21	5.566		
5,700.00	5,348.66	5,338.87	5,328.41	46.02	26.25	-143.28	-443.54	-1,127.24	372.64	308.91	63.73	5.848		
5,800.00	5,446.43	5,436.45	5,425.97	46.69	26.73	-145.29	-444.52	-1,125.63	391.73	327.40	64.33	6.090		
5,900.00	5,544.87	5,534.64	5,524.14	47.30	27.21	-146.82	-445.65	-1,124.07	408.27	343.29	64.98	6.283		
6,000.00	5,643.86	5,633.60	5,623.08	47.85	27.69	-147.92	-446.95	-1,122.59	422.05	356.38	65.67	6.426		
6,100.00	5,743.29	5,732.69	5,722.14	48.35	28.18	-148.67	-448.37	-1,121.16	432.99	366.61	66.38	6.523		
6,200.00	5,843.02	5,832.05	5,821.48	48.79	28.67	-149.08	-450.21	-1,119.80	441.05	373.96	67.10	6.574		
6,300.00	5,942.95	5,931.82	5,921.22	49.19	29.17	-149.19	-452.25	-1,118.46	446.18	378.37	67.81	6.580		
6,400.00	6,042.94	6,031.57	6,020.94	49.53	29.66	-149.83	-454.14	-1,117.06	448.62	379.78	68.84	6.517		
6,500.00	6,142.94	6,129.89	6,119.23	49.88	30.16	-149.99	-456.03	-1,115.52	450.75	380.97	69.78	6.459		
6,600.00	6,242.94	6,228.65	6,217.95	50.22	30.65	-110.14	-458.04	-1,113.53	453.34	382.62	70.73	6.410		
6,700.00	6,342.94	6,328.97	6,318.23	50.57	31.15	-110.29	-460.03	-1,111.46	455.96	384.28	71.68	6.361		
6,800.00	6,442.94	6,430.74	6,419.97	50.92	31.66	-110.38	-461.62	-1,109.42	458.39	385.75	72.64	6.311		
6,900.00	6,542.94	6,533.35	6,522.55	51.28	32.17	-110.41	-462.47	-1,107.66	460.28	386.70	73.58	6.256		
7,000.00	6,642.94	6,640.16	6,629.36	51.64	32.72	-110.43	-462.97	-1,106.75	461.25	386.70	74.55	6.187		
7,100.00	6,742.94	6,742.72	6,731.91	52.00	33.25	-110.55	-463.82	-1,107.30	461.04	385.50	75.54	6.103		
7,200.00	6,842.94	6,845.29	6,834.48	52.36	33.79	-110.62	-464.11	-1,108.17	460.34	383.82	76.52	6.016		
7,300.00	6,942.94	6,950.17	6,939.34	52.73	34.35	-110.51	-462.73	-1,109.35	458.82	381.35	77.48	5.922		
7,400.00	7,042.94	7,053.69	7,042.83	53.10	34.89	-110.34	-460.55	-1,111.33	456.30	377.89	78.41	5.819		
7,500.00	7,142.94	7,153.83	7,142.92	53.47	35.42	-110.17	-458.26	-1,113.51	453.46	374.13	79.33	5.716		
7,600.00	7,242.94	7,254.19	7,243.21	53.85	35.96	-109.97	-455.80	-1,115.71	450.56	370.32	80.25	5.615		
7,700.00	7,342.94	7,352.74	7,341.71	54.23	36.48	-109.78	-453.44	-1,117.91	447.65	366.49	81.16	5.516		
7,800.00	7,442.94	7,448.49	7,437.44	54.61	36.98	-109.62	-451.55	-1,119.43	445.49	363.43	82.06	5.429		
7,900.00	7,542.94	7,546.14	7,535.07	54.99	37.50	-109.47	-450.07	-1,120.24	444.20	361.21	82.99	5.353		
8,000.00	7,642.94	7,645.82	7,634.74	55.38	38.02	-109.33	-448.64	-1,120.96	443.04	359.12	83.92	5.279		
8,100.00	7,742.94	7,745.78	7,734.68	55.77	38.55	-109.17	-447.11	-1,121.50	442.02	357.17	84.86	5.209		
8,200.00	7,842.94	7,845.64	7,834.52	56.16	39.07	-108.97	-445.33	-1,122.06	440.91	355.13	85.79	5.140		
8,300.00	7,942.94	7,945.75	7,934.62	56.56	39.60	-108.76	-443.45	-1,122.47	439.92	353.20	86.71	5.073		
8,400.00	8,042.94	8,046.63	8,035.48	56.95	40.13	-108.53	-441.42	-1,123.02	438.75	351.11	87.65	5.006		
8,500.00	8,142.94	8,147.29	8,136.11	57.35	40.65	-108.30	-439.31	-1,123.74	437.41	348.83	88.58	4.938		
8,600.00	8,242.94	8,247.85	8,236.64	57.75	41.18	-108.07	-437.21	-1,124.61	435.94	346.42	89.52	4.870		
8,700.00	8,342.94	8,348.21	8,336.97	58.16	41.72	-107.86	-435.19	-1,125.63	434.36	343.89	90.46	4.801		
8,800.00	8,442.94	8,448.81	8,437.56	58.56	42.25	-107.66	-433.26	-1,126.79	432.67	341.26	91.42	4.733		
8,900.00	8,542.94	8,549.40	8,538.12	58.97	42.78	-107.48	-431.38	-1,128.12	430.84	338.47	92.38	4.664		
9,000.00	8,642.94	8,649.74	8,638.43	59.38	43.32	-107.31	-429.57	-1,129.59	428.91	335.57	93.34	4.595		
9,100.00	8,742.94	8,749.68	8,738.35	59.79	43.85	-107.15	-427.88	-1,131.13	426.94	332.63	94.30	4.527		
9,200.00	8,842.94	8,850.03	8,838.67	60.20	44.38	-107.03	-426.44	-1,132.79	424.93	329.65	95.28	4.460		
9,300.00	8,942.94	8,950.26	8,938.88	60.62	44.92	-106.98	-425.46	-1,134.70	422.82	326.54	96.28	4.392		
9,400.00	9,042.54	9,045.20	9,033.79	61.03	45.42	-73.51	-424.56	-1,136.31	418.71	322.39	96.32	4.347		
9,500.00	9,139.32	9,126.44	9,114.91	61.44	45.85	-77.27	-420.55	-1,134.90	412.92	316.79	96.13	4.295		
9,594.80	9,225.80	9,199.64	9,187.53	61.83	46.22	-82.65	-412.79	-1,130.03	410.67	314.35	96.32	4.264		
9,600.00	9,230.35	9,203.96	9,191.80	61.85	46.24	-83.01	-412.25	-1,129.71	410.68	314.32	96.35	4.262		
9,700.00	9,312.86	9,273.53	9,260.20	62.24	46.58	-89.16	-400.78	-1,124.59	415.55	318.32	97.23	4.274		
9,800.00	9,384.34	9,309.27	9,294.48	62.61	46.76	-91.32	-391.15	-1,121.71	435.58	337.52	98.06	4.442		
9,900.00	9,442.63	9,323.43	9,307.71	62.95	46.82	-88.92	-386.29	-1,120.37	474.47	375.95	98.53	4.816		
10,000.00	9,485.95	9,326.53	9,310.57	63.28	46.84	-82.83	-385.15	-1,120.05	528.98	431.16	97.83	5.407		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 5HC - OH / Job #61218 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 262-MWD, 430-MWD+HDM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)					
10,100.00	9,512.99	9,322.50	9,306.85	63.61	46.82	-73.96	-386.63	-1,120.46	593.79	499.49	94.29	6.297	
10,200.00	9,522.91	9,313.74	9,298.68	63.96	46.78	-63.74	-389.68	-1,121.30	663.96	576.94	87.01	7.631	
10,300.00	9,521.18	9,295.00	9,280.91	64.35	46.69	-60.07	-395.40	-1,122.91	737.82	653.63	84.18	8.764	
10,400.00	9,519.14	9,295.00	9,280.91	64.79	46.69	-60.07	-395.40	-1,122.91	816.51	731.71	84.81	9.628	
10,500.00	9,517.10	9,295.00	9,280.91	65.30	46.69	-60.07	-395.40	-1,122.91	899.45	813.94	85.51	10.519	
10,600.00	9,515.06	9,276.15	9,262.75	65.87	46.60	-58.13	-400.18	-1,124.39	984.99	900.58	84.41	11.669	
10,700.00	9,513.02	9,268.84	9,255.64	66.50	46.56	-57.39	-401.82	-1,124.94	1,073.00	988.48	84.51	12.697	
10,800.00	9,510.98	9,247.00	9,234.26	67.20	46.45	-55.23	-405.96	-1,126.57	1,163.18	1,079.98	83.20	13.981	
10,900.00	9,508.93	9,247.00	9,234.26	67.97	46.45	-55.23	-405.96	-1,126.57	1,254.20	1,170.06	84.14	14.905	
11,000.00	9,506.89	9,247.00	9,234.26	68.81	46.45	-55.23	-405.96	-1,126.57	1,346.50	1,261.35	85.15	15.813	
11,100.00	9,504.85	9,247.00	9,234.26	69.71	46.45	-55.23	-405.96	-1,126.57	1,439.82	1,353.61	86.21	16.701	
11,200.00	9,502.81	9,247.00	9,234.26	70.68	46.45	-55.23	-405.96	-1,126.57	1,533.99	1,446.67	87.32	17.567	
11,300.00	9,500.77	9,231.94	9,219.43	71.71	46.38	-53.79	-408.34	-1,127.66	1,628.69	1,541.77	86.92	18.738	
11,400.00	9,498.73	9,224.87	9,212.46	72.80	46.34	-53.13	-409.39	-1,128.18	1,723.95	1,636.57	87.38	19.729	
11,500.00	9,496.69	9,218.28	9,205.95	73.95	46.31	-52.52	-410.33	-1,128.66	1,819.66	1,731.73	87.93	20.694	
11,600.00	9,494.65	9,200.00	9,187.88	75.16	46.22	-50.86	-412.75	-1,130.00	1,915.85	1,828.53	87.31	21.942	
11,700.00	9,492.61	9,200.00	9,187.88	76.41	46.22	-50.86	-412.75	-1,130.00	2,012.21	1,923.61	88.60	22.711	
11,800.00	9,490.57	9,200.00	9,187.88	77.72	46.22	-50.86	-412.75	-1,130.00	2,108.90	2,018.98	89.92	23.454	
11,900.00	9,488.53	9,200.00	9,187.88	79.07	46.22	-50.86	-412.75	-1,130.00	2,205.89	2,114.63	91.27	24.170	
12,000.00	9,486.49	9,187.19	9,175.20	80.46	46.15	-49.74	-414.31	-1,130.94	2,303.07	2,211.75	91.31	25.222	
12,100.00	9,484.44	9,180.60	9,168.67	81.89	46.12	-49.18	-415.09	-1,131.42	2,400.45	2,308.42	92.03	26.084	
12,200.00	9,482.40	9,174.29	9,162.42	83.36	46.09	-48.65	-415.81	-1,131.87	2,498.01	2,405.22	92.79	26.922	
12,300.00	9,480.36	9,168.23	9,156.41	84.86	46.06	-48.14	-416.49	-1,132.30	2,595.72	2,502.12	93.59	27.734	
12,400.00	9,478.32	9,163.00	9,151.31	86.40	45.98	-46.90	-418.12	-1,133.38	2,693.60	2,600.11	93.49	28.812	
12,500.00	9,476.28	9,153.00	9,141.31	87.96	45.98	-46.90	-418.12	-1,133.38	2,791.55	2,696.61	94.94	29.404	
12,600.00	9,474.24	9,153.00	9,141.31	89.55	45.98	-46.90	-418.12	-1,133.38	2,889.63	2,793.23	96.40	29.975	
12,700.00	9,472.20	9,153.00	9,141.31	91.17	45.98	-46.90	-418.12	-1,133.38	2,987.84	2,889.96	97.88	30.525	
12,800.00	9,470.16	9,153.00	9,141.31	92.82	45.98	-46.90	-418.12	-1,133.38	3,086.17	2,986.79	99.38	31.055	
12,900.00	9,468.12	9,153.00	9,141.31	94.48	45.98	-46.90	-418.12	-1,133.38	3,184.60	3,083.72	100.88	31.567	
13,000.00	9,466.08	9,153.00	9,141.31	96.17	45.98	-46.90	-418.12	-1,133.38	3,283.13	3,180.72	102.41	32.060	
13,100.00	9,464.04	9,153.00	9,141.31	97.88	45.98	-46.90	-418.12	-1,133.38	3,381.74	3,277.80	103.94	32.536	
13,200.00	9,461.99	9,153.00	9,141.31	99.61	45.98	-46.90	-418.12	-1,133.38	3,480.43	3,374.95	105.48	32.995	
13,300.00	9,459.95	9,133.79	9,122.23	101.36	45.88	-45.41	-419.94	-1,134.55	3,578.96	3,473.94	105.01	34.081	
13,400.00	9,457.91	9,131.57	9,120.02	103.12	45.87	-45.24	-420.13	-1,134.66	3,677.73	3,571.40	106.33	34.587	
13,500.00	9,455.87	9,129.44	9,117.90	104.90	45.86	-45.09	-420.31	-1,134.76	3,776.56	3,668.90	107.66	35.077	
13,600.00	9,453.83	9,127.39	9,115.85	106.70	45.85	-44.93	-420.48	-1,134.86	3,875.45	3,766.44	109.01	35.551	
13,700.00	9,451.79	9,125.41	9,113.88	108.50	45.84	-44.79	-420.63	-1,134.95	3,974.39	3,864.02	110.37	36.010	
13,800.00	9,449.75	9,106.00	9,094.53	110.33	45.74	-43.40	-421.97	-1,135.63	4,073.57	3,963.61	109.96	37.046	
13,900.00	9,447.71	9,106.00	9,094.53	112.16	45.74	-43.40	-421.97	-1,135.63	4,172.56	4,061.04	111.52	37.415	
14,000.00	9,445.67	9,106.00	9,094.53	114.01	45.74	-43.40	-421.97	-1,135.63	4,271.60	4,158.51	113.09	37.773	
14,100.00	9,443.63	9,106.00	9,094.53	115.87	45.74	-43.40	-421.97	-1,135.63	4,370.68	4,256.02	114.66	38.119	
14,200.00	9,441.59	9,106.00	9,094.53	117.74	45.74	-43.40	-421.97	-1,135.63	4,469.80	4,353.56	116.24	38.455	
14,300.00	9,439.54	9,106.00	9,094.53	119.62	45.74	-43.40	-421.97	-1,135.63	4,568.96	4,451.14	117.82	38.780	
14,400.00	9,437.50	9,106.00	9,094.53	121.51	45.74	-43.40	-421.97	-1,135.63	4,668.16	4,548.75	119.41	39.095	
14,500.00	9,435.46	9,106.00	9,094.53	123.41	45.74	-43.40	-421.97	-1,135.63	4,767.39	4,646.39	121.00	39.400	
14,600.00	9,433.42	9,106.00	9,094.53	125.32	45.74	-43.40	-421.97	-1,135.63	4,866.65	4,744.05	122.60	39.696	
14,700.00	9,431.38	9,106.00	9,094.53	127.24	45.74	-43.40	-421.97	-1,135.63	4,965.94	4,841.74	124.20	39.984	
14,800.00	9,429.34	9,106.00	9,094.53	129.16	45.74	-43.40	-421.97	-1,135.63	5,065.26	4,939.45	125.80	40.263	
14,900.00	9,427.46	9,106.00	9,094.53	131.09	45.74	-43.82	-421.97	-1,135.63	5,164.62	5,036.31	128.32	40.249	
15,000.00	9,426.77	9,106.00	9,094.53	133.03	45.74	-44.08	-421.97	-1,135.63	5,264.17	5,133.71	130.46	40.350	
15,100.00	9,426.12	9,106.00	9,094.53	134.98	45.74	-44.08	-421.97	-1,135.63	5,363.75	5,231.66	132.09	40.608	
15,200.00	9,425.48	9,106.00	9,094.53	136.93	45.74	-44.08	-421.97	-1,135.63	5,463.33	5,329.62	133.71	40.859	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 5HC - OH / Job #61218 - Surveys (Patterson 815)													Offset Site Error:	0.00 usft
Survey Program: 262-MWD, 430-MWD+HDGM													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,300.00	9,424.83	9,106.00	9,094.53	138.89	45.74	-44.08	-421.97	-1,135.63	5,562.93	5,427.59	135.34	41.103		
15,400.00	9,424.18	9,106.00	9,094.53	140.85	45.74	-44.08	-421.97	-1,135.63	5,662.55	5,525.58	136.97	41.340		
15,500.00	9,423.54	9,106.00	9,094.53	142.82	45.74	-44.08	-421.97	-1,135.63	5,762.18	5,623.57	138.61	41.571		
15,600.00	9,422.89	9,106.00	9,094.53	144.80	45.74	-44.08	-421.97	-1,135.63	5,861.82	5,721.57	140.25	41.796		
15,700.00	9,422.25	9,106.00	9,094.53	146.78	45.74	-44.08	-421.97	-1,135.63	5,961.47	5,819.59	141.89	42.015		
15,800.00	9,421.60	9,106.00	9,094.53	148.77	45.74	-44.08	-421.97	-1,135.63	6,061.14	5,917.61	143.53	42.229		
15,900.00	9,420.95	9,106.00	9,094.53	150.76	45.74	-44.08	-421.97	-1,135.63	6,160.82	6,015.64	145.18	42.437		
16,000.00	9,420.31	9,106.00	9,094.53	152.75	45.74	-44.08	-421.97	-1,135.63	6,260.50	6,113.68	146.82	42.640		
16,100.00	9,419.66	9,106.00	9,094.53	154.75	45.74	-44.08	-421.97	-1,135.63	6,360.20	6,211.72	148.47	42.837		
16,200.00	9,419.01	9,106.00	9,094.53	156.76	45.74	-44.08	-421.97	-1,135.63	6,459.90	6,309.78	150.13	43.030		
16,300.00	9,418.37	9,106.00	9,094.53	158.77	45.74	-44.08	-421.97	-1,135.63	6,559.62	6,407.84	151.78	43.218		
16,400.00	9,417.72	9,106.00	9,094.53	160.78	45.74	-44.08	-421.97	-1,135.63	6,659.34	6,505.91	153.44	43.402		
16,500.00	9,417.08	9,106.00	9,094.53	162.80	45.74	-44.08	-421.97	-1,135.63	6,759.07	6,603.98	155.09	43.581		
16,600.00	9,416.43	9,106.00	9,094.53	164.82	45.74	-44.08	-421.97	-1,135.63	6,858.81	6,702.06	156.75	43.756		
16,700.00	9,415.78	9,106.00	9,094.53	166.84	45.74	-44.08	-421.97	-1,135.63	6,958.56	6,800.14	158.41	43.926		
16,800.00	9,415.14	9,106.00	9,094.53	168.86	45.74	-44.08	-421.97	-1,135.63	7,058.31	6,898.23	160.08	44.093		
16,900.00	9,414.49	9,106.00	9,094.53	170.89	45.74	-44.08	-421.97	-1,135.63	7,158.07	6,996.33	161.74	44.256		
17,000.00	9,413.84	9,106.00	9,094.53	172.93	45.74	-44.08	-421.97	-1,135.63	7,257.84	7,094.43	163.41	44.416		
17,100.00	9,413.20	9,106.00	9,094.53	174.96	45.74	-44.08	-421.97	-1,135.63	7,357.61	7,192.54	165.07	44.572		
17,200.00	9,412.55	9,106.00	9,094.53	177.00	45.74	-44.08	-421.97	-1,135.63	7,457.39	7,290.65	166.74	44.724		
17,300.00	9,411.91	9,106.00	9,094.53	179.04	45.74	-44.08	-421.97	-1,135.63	7,557.18	7,388.76	168.41	44.873		
17,400.00	9,411.26	9,106.00	9,094.53	181.09	45.74	-44.08	-421.97	-1,135.63	7,656.97	7,486.88	170.08	45.019		
17,500.00	9,410.61	9,106.00	9,094.53	183.13	45.74	-44.08	-421.97	-1,135.63	7,756.76	7,585.01	171.76	45.161		
17,600.00	9,409.97	9,106.00	9,094.53	185.18	45.74	-44.08	-421.97	-1,135.63	7,856.57	7,683.14	173.43	45.301		
17,700.00	9,409.32	9,106.00	9,094.53	187.24	45.74	-44.08	-421.97	-1,135.63	7,956.37	7,781.27	175.11	45.437		
17,800.00	9,408.67	9,106.00	9,094.53	189.29	45.74	-44.08	-421.97	-1,135.63	8,056.18	7,879.40	176.78	45.571		
17,900.00	9,408.03	9,106.00	9,094.53	191.35	45.74	-44.08	-421.97	-1,135.63	8,156.00	7,977.54	178.46	45.702		
18,000.00	9,407.38	9,106.00	9,094.53	193.40	45.74	-44.08	-421.97	-1,135.63	8,255.82	8,075.68	180.14	45.831		
18,100.00	9,406.73	9,106.00	9,094.53	195.47	45.74	-44.08	-421.97	-1,135.63	8,355.65	8,173.83	181.82	45.956		
18,200.00	9,406.09	9,106.00	9,094.53	197.53	45.74	-44.08	-421.97	-1,135.63	8,455.47	8,271.98	183.50	46.080		
18,300.00	9,405.44	9,106.00	9,094.53	199.59	45.74	-44.08	-421.97	-1,135.63	8,555.31	8,370.13	185.18	46.200		
18,400.00	9,404.80	9,106.00	9,094.53	201.66	45.74	-44.08	-421.97	-1,135.63	8,655.14	8,468.28	186.86	46.319		
18,500.00	9,404.15	9,106.00	9,094.53	203.73	45.74	-44.08	-421.97	-1,135.63	8,754.98	8,566.44	188.54	46.435		
18,600.00	9,403.50	9,106.00	9,094.53	205.80	45.74	-44.08	-421.97	-1,135.63	8,854.83	8,664.60	190.23	46.549		
18,700.00	9,402.86	9,106.00	9,094.53	207.87	45.74	-44.08	-421.97	-1,135.63	8,954.68	8,762.76	191.91	46.660		
18,800.00	9,402.21	9,065.69	9,054.28	209.94	45.53	-40.95	-423.93	-1,136.28	9,053.95	8,867.17	186.78	48.473		
18,900.00	9,401.56	9,065.02	9,053.61	212.02	45.53	-40.90	-423.95	-1,136.29	9,153.79	8,965.48	188.31	48.609		
19,000.00	9,400.92	9,064.36	9,052.95	214.10	45.52	-40.85	-423.97	-1,136.29	9,253.63	9,063.79	189.84	48.743		
19,100.00	9,400.27	9,063.72	9,052.30	216.18	45.52	-40.80	-424.00	-1,136.29	9,353.47	9,162.10	191.38	48.875		
19,200.00	9,399.63	9,063.08	9,051.67	218.26	45.52	-40.76	-424.02	-1,136.30	9,453.32	9,260.41	192.91	49.004		
19,300.00	9,398.98	9,062.45	9,051.04	220.34	45.51	-40.71	-424.04	-1,136.30	9,553.17	9,358.72	194.44	49.131		
19,400.00	9,398.33	9,061.84	9,050.43	222.42	45.51	-40.67	-424.06	-1,136.30	9,653.02	9,457.04	195.98	49.255		
19,500.00	9,397.69	9,061.24	9,049.82	224.50	45.51	-40.63	-424.08	-1,136.30	9,752.87	9,555.36	197.52	49.378		
19,600.00	9,397.04	9,060.64	9,049.23	226.59	45.50	-40.58	-424.10	-1,136.31	9,852.73	9,653.67	199.05	49.498		
19,700.00	9,396.39	9,060.06	9,048.65	228.68	45.50	-40.54	-424.12	-1,136.31	9,952.59	9,751.99	200.59	49.616		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 170-MWD, 427-MWD+HDGM													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	-118.06	-483.01	-906.00	1,026.79				
100.00	100.00	88.02	88.02	0.19	0.12	-118.07	-483.12	-905.89	1,026.67	1,026.35	0.32	3,226.183	
200.00	200.00	187.90	187.90	0.73	0.30	-118.10	-483.52	-905.52	1,026.52	1,025.50	1.03	999.967	
211.41	211.41	198.66	198.66	0.79	0.33	-118.10	-483.56	-905.49	1,026.52	1,025.39	1.12	916.021	
300.00	300.00	289.27	289.27	1.27	0.60	-118.11	-483.69	-905.55	1,026.64	1,024.76	1.87	547.957	
400.00	400.00	396.09	396.08	1.81	0.94	-118.08	-482.75	-904.80	1,025.57	1,022.82	2.74	373.948	
500.00	500.00	506.11	506.10	2.34	1.18	-118.10	-482.60	-903.67	1,024.64	1,021.12	3.52	290.794	
600.00	600.00	609.26	609.21	2.88	1.40	-118.15	-482.41	-901.41	1,022.62	1,018.34	4.28	238.929	
700.00	700.00	718.63	718.52	3.42	1.80	-118.28	-483.10	-897.90	1,020.10	1,014.88	5.22	195.492	
800.00	800.00	835.98	835.70	3.96	2.32	-118.53	-484.76	-891.74	1,016.16	1,009.88	6.28	161.882	
900.00	900.00	945.87	945.27	4.50	2.86	-118.86	-487.09	-883.74	1,010.76	1,003.42	7.34	137.649	
1,000.00	1,000.00	1,050.65	1,049.65	5.03	3.40	-119.24	-489.86	-875.00	1,004.75	996.33	8.42	119.366	
1,100.00	1,100.00	1,205.99	1,203.89	5.57	4.26	-119.94	-493.64	-857.15	996.02	986.23	9.79	101.690	
1,200.00	1,200.00	1,332.39	1,328.49	6.11	5.00	-120.69	-496.19	-836.10	982.49	971.43	11.06	88.867	
1,300.00	1,300.00	1,454.04	1,447.99	6.65	5.75	-121.47	-497.74	-813.34	967.05	954.73	12.32	78.505	
1,400.00	1,400.00	1,572.00	1,563.37	7.18	6.51	-122.23	-497.39	-788.82	949.07	935.49	13.59	69.849	
1,500.00	1,500.00	1,673.13	1,662.12	7.72	7.17	-122.92	-496.64	-767.08	930.45	915.68	14.77	63.005	
1,600.00	1,600.00	1,780.70	1,766.99	8.26	7.89	-123.71	-495.74	-743.11	911.24	895.24	16.00	56.942	
1,700.00	1,700.00	1,870.67	1,854.57	8.80	8.51	-124.40	-494.75	-722.53	891.58	874.45	17.13	52.054	
1,800.00	1,800.00	1,950.39	1,932.54	9.33	9.04	-124.98	-494.01	-705.98	873.86	855.69	18.18	48.076	
1,900.00	1,899.98	2,032.60	2,013.34	9.86	9.57	-24.62	-493.32	-690.82	856.66	837.75	18.91	45.301	
2,000.00	1,999.84	2,124.68	2,104.08	10.37	10.16	-25.53	-492.85	-675.21	837.88	817.96	19.92	42.071	
2,100.00	2,099.45	2,242.84	2,220.26	10.88	10.93	-26.92	-491.82	-653.70	815.02	793.94	21.08	38.667	
2,200.00	2,198.70	2,349.55	2,324.70	11.41	11.64	-28.53	-489.88	-631.92	787.13	764.95	22.17	35.497	
2,300.00	2,297.47	2,446.80	2,419.77	11.94	12.30	-30.31	-487.63	-611.55	756.02	732.81	23.21	32.571	
2,400.00	2,395.62	2,544.47	2,515.09	12.49	12.97	-32.48	-485.24	-590.42	722.00	697.73	24.27	29.752	
2,500.00	2,493.06	2,638.55	2,606.68	13.06	13.64	-35.08	-483.01	-569.01	685.19	659.85	25.34	27.041	
2,600.00	2,589.64	2,727.52	2,693.13	13.66	14.27	-38.12	-481.14	-548.09	646.41	619.98	26.43	24.455	
2,700.00	2,685.27	2,814.94	2,778.12	14.29	14.89	-41.65	-478.96	-527.74	606.38	578.79	27.59	21.976	
2,800.00	2,779.82	2,899.08	2,859.89	14.95	15.49	-45.75	-476.76	-508.00	565.61	536.77	28.84	19.614	
2,900.00	2,873.17	2,980.08	2,938.70	15.66	16.07	-50.41	-474.58	-489.44	525.32	495.13	30.19	17.400	
3,000.00	2,965.21	3,060.37	3,016.95	16.42	16.64	-55.80	-472.19	-471.59	486.44	454.74	31.70	15.345	
3,100.00	3,055.84	3,136.60	3,091.25	17.24	17.17	-61.79	-470.20	-454.66	450.56	417.21	33.34	13.513	
3,200.00	3,144.94	3,208.84	3,161.56	18.12	17.69	-68.33	-469.10	-438.14	420.02	384.93	35.10	11.968	
3,300.00	3,232.39	3,280.83	3,231.47	19.07	18.21	-75.57	-468.86	-420.95	397.62	360.69	36.93	10.766	
3,400.00	3,318.33	3,352.20	3,300.71	20.09	18.74	-83.08	-468.63	-403.61	385.60	346.89	38.72	9.959	
3,444.52	3,356.49	3,383.28	3,330.86	20.57	18.96	-86.34	-468.56	-396.09	384.30	344.85	39.46	9.740 CC, ES	
3,500.00	3,404.05	3,422.18	3,368.62	21.16	19.25	-90.41	-468.54	-386.74	386.31	346.01	40.30	9.586 SF	
3,600.00	3,489.76	3,491.92	3,436.47	22.27	19.75	-97.50	-468.95	-370.65	399.80	358.19	41.61	9.608	
3,700.00	3,575.48	3,565.22	3,508.07	23.40	20.26	-104.42	-470.18	-355.00	424.38	381.72	42.66	9.948	
3,800.00	3,661.19	3,641.01	3,582.16	24.56	20.78	-110.99	-471.35	-339.09	457.65	414.20	43.45	10.532	
3,900.00	3,746.90	3,722.40	3,662.04	25.74	21.33	-117.18	-472.93	-323.59	497.16	453.12	44.04	11.288	
4,000.00	3,832.62	3,809.13	3,747.64	26.94	21.87	-122.72	-475.60	-309.90	540.52	496.02	44.51	12.145	
4,100.00	3,918.33	3,895.45	3,833.16	28.16	22.38	-127.29	-479.17	-298.78	586.21	541.24	44.97	13.037	
4,200.00	4,004.05	3,993.52	3,930.61	29.39	22.93	-131.70	-482.83	-288.35	632.86	587.49	45.37	13.948	
4,300.00	4,089.76	4,115.52	4,052.31	30.64	23.55	-136.35	-484.44	-280.39	677.60	631.91	45.69	14.830	
4,400.00	4,175.48	4,212.41	4,149.15	31.89	24.02	-139.52	-484.17	-277.53	720.81	674.59	46.22	15.595	
4,500.00	4,261.19	4,298.87	4,235.60	33.16	24.42	-142.03	-483.73	-275.69	764.69	717.84	46.85	16.322	
4,600.00	4,346.91	4,385.54	4,322.25	34.43	24.83	-144.29	-483.31	-274.10	809.48	761.95	47.53	17.033	
4,700.00	4,432.62	4,468.87	4,405.56	35.72	25.22	-146.25	-482.86	-272.58	855.20	806.96	48.25	17.725	
4,800.00	4,518.33	4,558.49	4,495.18	37.01	25.64	-148.14	-482.56	-271.17	901.59	852.59	49.00	18.401	
4,900.00	4,604.83	4,650.48	4,587.17	38.28	26.05	-150.26	-482.92	-270.49	946.94	896.85	50.10	18.903	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Surveys (Patterson 815)													Offset Site Error: 0.00 usft
Survey Program: 170-MWD, 427-MWD+HDGM													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.00	4,693.02	4,740.00	4,676.67	39.48	26.44	-152.00	-483.81	-270.37	989.70	938.40	51.30	19.294	
5,100.00	4,782.80	4,831.93	4,768.60	40.62	26.84	-153.50	-484.73	-270.37	1,029.88	977.34	52.54	19.600	
5,200.00	4,874.07	4,922.50	4,859.16	41.68	27.23	-154.75	-485.56	-270.44	1,067.36	1,013.55	53.81	19.834	
5,300.00	4,966.70	5,014.24	4,950.91	42.69	27.64	-155.82	-486.59	-270.45	1,102.22	1,047.12	55.10	20.005	
5,400.00	5,060.59	5,109.78	5,046.43	43.62	28.06	-156.74	-487.87	-270.50	1,134.21	1,077.83	56.38	20.117	
5,500.00	5,155.63	5,205.90	5,142.54	44.48	28.48	-157.51	-489.29	-270.74	1,163.12	1,105.47	57.64	20.177	
5,600.00	5,251.69	5,300.90	5,237.53	45.28	28.90	-158.14	-490.76	-270.97	1,189.01	1,130.13	58.87	20.196	
5,700.00	5,348.66	5,398.62	5,335.24	46.02	29.34	-158.65	-492.47	-271.18	1,211.87	1,151.80	60.07	20.174	
5,800.00	5,446.43	5,496.51	5,433.10	46.69	29.78	-159.06	-494.35	-271.48	1,231.53	1,170.31	61.22	20.115	
5,900.00	5,544.87	5,594.21	5,530.79	47.30	30.23	-159.36	-496.56	-271.79	1,248.04	1,185.72	62.32	20.025	
6,000.00	5,643.86	5,693.33	5,629.87	47.85	30.68	-159.57	-498.96	-272.09	1,261.38	1,198.00	63.37	19.904	
6,100.00	5,743.29	5,797.88	5,734.41	48.35	31.15	-159.76	-500.10	-272.39	1,271.28	1,206.91	64.36	19.752	
6,200.00	5,843.02	5,900.52	5,837.05	48.79	31.61	-159.95	-499.33	-272.72	1,277.59	1,212.34	65.26	19.578	
6,300.00	5,942.95	6,004.09	5,940.61	49.19	32.08	-160.08	-498.18	-273.28	1,280.36	1,214.28	66.09	19.374	
6,400.00	6,042.94	6,104.80	6,041.31	49.53	32.54	-160.77	-497.19	-274.02	1,280.00	1,212.92	67.09	19.080	
6,500.00	6,142.94	6,204.99	6,141.49	49.88	33.00	-161.74	-496.30	-274.75	1,279.14	1,211.15	67.99	18.813	
6,600.00	6,242.94	6,308.36	6,244.85	50.22	33.47	-162.71	-495.59	-275.73	1,278.10	1,209.18	68.92	18.545	
6,700.00	6,342.94	6,414.20	6,350.69	50.57	33.95	-163.70	-495.03	-277.07	1,276.77	1,206.91	69.86	18.275	
6,800.00	6,442.94	6,525.76	6,462.23	50.92	34.45	-164.69	-494.45	-279.30	1,274.73	1,203.89	70.84	17.995	
6,900.00	6,542.94	6,631.35	6,567.77	51.28	34.93	-165.70	-494.31	-282.30	1,271.89	1,200.11	71.79	17.717	
7,000.00	6,642.94	6,730.16	6,666.53	51.64	35.37	-166.74	-494.73	-285.32	1,268.94	1,196.22	72.72	17.450	
7,100.00	6,742.94	6,831.75	6,768.07	52.00	35.83	-167.79	-495.34	-288.42	1,266.01	1,192.35	73.66	17.186	
7,200.00	6,842.94	6,935.00	6,871.27	52.36	36.30	-168.83	-495.74	-291.77	1,262.86	1,188.24	74.62	16.924	
7,300.00	6,942.94	7,029.00	6,965.22	52.73	36.73	-169.87	-496.21	-294.86	1,259.70	1,184.17	75.54	16.677	
7,400.00	7,042.94	7,124.78	7,060.95	53.10	37.17	-170.92	-496.93	-297.64	1,256.96	1,180.49	76.47	16.438	
7,500.00	7,142.94	7,224.09	7,160.23	53.47	37.64	-171.97	-497.58	-300.17	1,254.54	1,177.12	77.42	16.204	
7,600.00	7,242.94	7,333.16	7,269.25	53.85	38.14	-173.03	-498.40	-303.47	1,251.66	1,173.24	78.42	15.960	
7,700.00	7,342.94	7,428.54	7,364.57	54.23	38.59	-174.08	-499.77	-306.57	1,248.68	1,169.31	79.37	15.733	
7,800.00	7,442.94	7,521.09	7,457.06	54.61	39.02	-175.12	-501.70	-309.18	1,246.23	1,165.92	80.31	15.518	
7,900.00	7,542.94	7,617.16	7,553.07	54.99	39.48	-176.17	-504.05	-311.53	1,244.20	1,162.93	81.27	15.309	
8,000.00	7,642.94	7,712.61	7,648.46	55.38	39.93	-177.22	-506.85	-313.59	1,242.56	1,160.31	82.24	15.108	
8,100.00	7,742.94	7,814.56	7,750.31	55.77	40.42	-178.27	-510.67	-315.78	1,241.05	1,157.79	83.26	14.906	
8,200.00	7,842.94	7,923.39	7,859.00	56.16	40.94	-179.32	-515.32	-318.79	1,239.06	1,154.74	84.32	14.695	
8,300.00	7,942.94	8,029.33	7,964.77	56.56	41.45	-180.37	-520.13	-322.47	1,236.42	1,151.06	85.36	14.484	
8,400.00	8,042.94	8,129.93	8,065.22	56.95	41.93	-181.42	-524.11	-326.13	1,233.54	1,147.16	86.38	14.281	
8,500.00	8,142.94	8,230.05	8,165.24	57.35	42.41	-182.47	-527.19	-329.59	1,230.70	1,143.32	87.38	14.084	
8,600.00	8,242.94	8,335.10	8,270.19	57.75	42.91	-183.52	-529.87	-333.32	1,227.68	1,139.27	88.41	13.886	
8,700.00	8,342.94	8,439.66	8,374.64	58.16	43.41	-184.57	-531.97	-337.43	1,224.19	1,134.76	89.43	13.688	
8,800.00	8,442.94	8,540.75	8,475.64	58.56	43.90	-185.62	-533.69	-341.58	1,220.48	1,130.05	90.44	13.496	
8,900.00	8,542.94	8,642.24	8,577.02	58.97	44.39	-186.67	-535.44	-345.85	1,216.68	1,125.24	91.44	13.305	
9,000.00	8,642.94	8,742.42	8,677.08	59.38	44.87	-187.72	-537.27	-350.18	1,212.80	1,120.35	92.45	13.119	
9,100.00	8,742.94	8,840.89	8,775.45	59.79	45.35	-188.77	-539.32	-354.42	1,208.97	1,115.53	93.44	12.938	
9,200.00	8,842.94	8,939.99	8,874.43	60.20	45.83	-189.82	-541.60	-358.65	1,205.25	1,110.79	94.45	12.761	
9,300.00	8,942.94	9,038.76	8,973.08	60.62	46.31	-190.87	-544.00	-362.82	1,201.59	1,106.14	95.46	12.588	
9,400.00	9,042.54	9,108.35	9,042.61	61.03	46.65	-191.92	-545.18	-365.14	1,197.24	1,101.43	95.81	12.496	
9,500.00	9,139.32	9,148.72	9,082.95	61.44	46.86	-192.97	-543.94	-364.52	1,193.39	1,097.35	96.04	12.426	
9,584.85	9,217.04	9,169.00	9,103.12	61.79	46.96	-194.02	-542.33	-363.20	1,191.97	1,095.79	96.17	12.394	
9,600.00	9,230.35	9,169.00	9,103.12	61.85	46.96	-195.07	-542.33	-363.20	1,192.03	1,095.85	96.18	12.393	
9,700.00	9,312.86	9,217.00	9,150.32	62.24	47.23	-196.12	-535.97	-357.41	1,193.70	1,097.17	96.52	12.367	
9,800.00	9,384.34	9,242.61	9,175.07	62.61	47.37	-197.17	-530.88	-353.27	1,199.33	1,102.51	96.83	12.386	
9,900.00	9,442.63	9,269.13	9,200.28	62.95	47.52	-198.22	-523.96	-348.83	1,209.43	1,112.27	97.16	12.448	
10,000.00	9,485.95	9,283.28	9,213.52	63.28	47.60	-199.27	-519.56	-346.50	1,224.63	1,127.39	97.24	12.594	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Surveys (Patterson 815)												Offset Site Error:	0.00 usft
Survey Program: 170-MWD, 427-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.00	9,512.99	9,278.46	9,209.02	63.61	47.57	-78.43	-521.12	-347.28	1,244.87	1,148.21	96.67	12.878	
10,200.00	9,522.91	9,264.00	9,195.44	63.96	47.49	-75.33	-525.43	-349.69	1,269.19	1,173.81	95.38	13.307	
10,300.00	9,521.18	9,264.00	9,195.44	64.35	47.49	-74.84	-525.43	-349.69	1,297.98	1,202.31	95.67	13.567	
10,400.00	9,519.14	9,242.86	9,175.31	64.79	47.38	-73.89	-530.82	-353.23	1,333.12	1,237.35	95.76	13.921	
10,500.00	9,517.10	9,234.62	9,167.39	65.30	47.33	-73.52	-532.64	-354.58	1,374.61	1,278.32	96.29	14.276	
10,600.00	9,515.06	9,217.00	9,150.32	65.87	47.23	-72.73	-535.97	-357.41	1,421.94	1,325.35	96.59	14.721	
10,700.00	9,513.02	9,217.00	9,150.32	66.50	47.23	-72.73	-535.97	-357.41	1,474.23	1,376.72	97.50	15.120	
10,800.00	9,510.98	9,217.00	9,150.32	67.20	47.23	-72.73	-535.97	-357.41	1,531.27	1,432.79	98.48	15.549	
10,900.00	9,508.93	9,217.00	9,150.32	67.97	47.23	-72.73	-535.97	-357.41	1,592.55	1,493.03	99.52	16.003	
11,000.00	9,506.89	9,217.00	9,150.32	68.81	47.23	-72.73	-535.97	-357.41	1,657.60	1,556.98	100.62	16.475	
11,100.00	9,504.85	9,217.00	9,150.32	69.71	47.23	-72.73	-535.97	-357.41	1,726.00	1,624.23	101.77	16.960	
11,200.00	9,502.81	9,217.00	9,150.32	70.68	47.23	-72.73	-535.97	-357.41	1,797.36	1,694.38	102.97	17.454	
11,300.00	9,500.77	9,217.00	9,150.32	71.71	47.23	-72.73	-535.97	-357.41	1,871.34	1,767.11	104.23	17.954	
11,400.00	9,498.73	9,195.25	9,129.04	72.80	47.11	-71.75	-539.28	-360.49	1,947.02	1,842.21	104.81	18.577	
11,500.00	9,496.69	9,192.40	9,126.24	73.95	47.09	-71.62	-539.66	-360.83	2,025.22	1,919.17	106.05	19.097	
11,600.00	9,494.65	9,189.70	9,123.58	75.16	47.08	-71.50	-540.01	-361.15	2,105.25	1,997.92	107.33	19.614	
11,700.00	9,492.61	9,169.00	9,103.12	76.41	46.96	-70.58	-542.33	-363.20	2,187.34	2,079.31	108.03	20.248	
11,800.00	9,490.57	9,169.00	9,103.12	77.72	46.96	-70.58	-542.33	-363.20	2,270.34	2,160.86	109.48	20.738	
11,900.00	9,488.53	9,169.00	9,103.12	79.07	46.96	-70.58	-542.33	-363.20	2,354.66	2,243.70	110.96	21.221	
12,000.00	9,486.49	9,169.00	9,103.12	80.46	46.96	-70.58	-542.33	-363.20	2,440.16	2,327.69	112.47	21.696	
12,100.00	9,484.44	9,169.00	9,103.12	81.89	46.96	-70.58	-542.33	-363.20	2,526.73	2,412.72	114.01	22.163	
12,200.00	9,482.40	9,169.00	9,103.12	83.36	46.96	-70.58	-542.33	-363.20	2,614.26	2,498.69	115.58	22.619	
12,300.00	9,480.36	9,169.00	9,103.12	84.86	46.96	-70.58	-542.33	-363.20	2,702.66	2,585.49	117.17	23.066	
12,400.00	9,478.32	9,169.00	9,103.12	86.40	46.96	-70.58	-542.33	-363.20	2,791.83	2,673.05	118.79	23.503	
12,500.00	9,476.28	9,169.00	9,103.12	87.96	46.96	-70.58	-542.33	-363.20	2,881.72	2,761.30	120.42	23.930	
12,600.00	9,474.24	9,169.00	9,103.12	89.55	46.96	-70.58	-542.33	-363.20	2,972.26	2,850.17	122.08	24.346	
12,700.00	9,472.20	9,169.00	9,103.12	91.17	46.96	-70.58	-542.33	-363.20	3,063.38	2,939.62	123.76	24.752	
12,800.00	9,470.16	9,169.00	9,103.12	92.82	46.96	-70.58	-542.33	-363.20	3,155.04	3,029.58	125.46	25.148	
12,900.00	9,468.12	9,169.00	9,103.12	94.48	46.96	-70.58	-542.33	-363.20	3,247.19	3,120.02	127.17	25.533	
13,000.00	9,466.08	9,169.00	9,103.12	96.17	46.96	-70.58	-542.33	-363.20	3,339.80	3,210.89	128.91	25.909	
13,100.00	9,464.04	9,169.00	9,103.12	97.88	46.96	-70.58	-542.33	-363.20	3,432.82	3,302.16	130.65	26.275	
13,200.00	9,461.99	9,169.00	9,103.12	99.61	46.96	-70.58	-542.33	-363.20	3,526.22	3,393.81	132.41	26.631	
13,300.00	9,459.95	9,169.00	9,103.12	101.36	46.96	-70.58	-542.33	-363.20	3,619.97	3,485.79	134.18	26.978	
13,400.00	9,457.91	9,169.00	9,103.12	103.12	46.96	-70.58	-542.33	-363.20	3,714.05	3,578.08	135.97	27.315	
13,500.00	9,455.87	9,169.00	9,103.12	104.90	46.96	-70.58	-542.33	-363.20	3,808.43	3,670.66	137.77	27.644	
13,600.00	9,453.83	9,169.00	9,103.12	106.70	46.96	-70.58	-542.33	-363.20	3,903.09	3,763.52	139.58	27.964	
13,700.00	9,451.79	9,169.00	9,103.12	108.50	46.96	-70.58	-542.33	-363.20	3,998.02	3,856.62	141.40	28.275	
13,800.00	9,449.75	9,169.00	9,103.12	110.33	46.96	-70.58	-542.33	-363.20	4,093.18	3,949.95	143.23	28.578	
13,900.00	9,447.71	9,169.00	9,103.12	112.16	46.96	-70.58	-542.33	-363.20	4,188.57	4,043.50	145.07	28.874	
14,000.00	9,445.67	9,169.00	9,103.12	114.01	46.96	-70.58	-542.33	-363.20	4,284.17	4,137.25	146.91	29.161	
14,100.00	9,443.63	9,169.00	9,103.12	115.87	46.96	-70.58	-542.33	-363.20	4,379.96	4,231.19	148.77	29.441	
14,200.00	9,441.59	9,169.00	9,103.12	117.74	46.96	-70.58	-542.33	-363.20	4,475.94	4,325.31	150.64	29.714	
14,300.00	9,439.54	9,169.00	9,103.12	119.62	46.96	-70.58	-542.33	-363.20	4,572.09	4,419.59	152.51	29.979	
14,400.00	9,437.50	9,169.00	9,103.12	121.51	46.96	-70.58	-542.33	-363.20	4,668.41	4,514.02	154.39	30.238	
14,500.00	9,435.46	9,169.00	9,103.12	123.41	46.96	-70.58	-542.33	-363.20	4,764.87	4,608.60	156.27	30.491	
14,600.00	9,433.42	9,147.62	9,081.85	125.32	46.85	-69.64	-544.01	-364.57	4,860.97	4,703.73	157.24	30.914	
14,700.00	9,431.38	9,146.88	9,081.12	127.24	46.85	-69.60	-544.05	-364.61	4,957.68	4,798.58	159.10	31.160	
14,800.00	9,429.34	9,146.17	9,080.41	129.16	46.85	-69.57	-544.09	-364.64	5,054.52	4,893.55	160.97	31.401	
14,900.00	9,427.46	9,145.50	9,079.73	131.09	46.84	-70.96	-544.13	-364.67	5,151.52	4,987.18	162.84	31.648	
15,000.00	9,426.77	9,144.94	9,079.18	133.03	46.84	-71.71	-544.16	-364.69	5,248.94	5,081.93	164.71	31.899	
15,100.00	9,426.12	9,144.40	9,078.64	134.98	46.84	-71.69	-544.19	-364.71	5,346.46	5,177.55	166.58	32.153	
15,200.00	9,425.48	9,143.88	9,078.12	136.93	46.83	-71.66	-544.22	-364.73	5,444.07	5,273.26	168.44	32.407	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Surveys (Patterson 815)												Offset Site Error:	0.00 usft
Survey Program: 170-MWD, 427-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
15,300.00	9,424.83	9,122.00	9,056.26	138.89	46.72	-70.65	-545.02	-365.20	5,542.26	5,370.51	171.75	32.270	
15,400.00	9,424.18	9,122.00	9,056.26	140.85	46.72	-70.65	-545.02	-365.20	5,640.01	5,466.34	173.68	32.474	
15,500.00	9,423.54	9,122.00	9,056.26	142.82	46.72	-70.65	-545.02	-365.20	5,737.84	5,562.23	175.61	32.673	
15,600.00	9,422.89	9,122.00	9,056.26	144.80	46.72	-70.65	-545.02	-365.20	5,835.75	5,658.19	177.55	32.868	
15,700.00	9,422.25	9,122.00	9,056.26	146.78	46.72	-70.65	-545.02	-365.20	5,933.72	5,754.22	179.50	33.058	
15,800.00	9,421.60	9,122.00	9,056.26	148.77	46.72	-70.65	-545.02	-365.20	6,031.76	5,850.32	181.44	33.243	
15,900.00	9,420.95	9,122.00	9,056.26	150.76	46.72	-70.65	-545.02	-365.20	6,129.86	5,946.47	183.39	33.425	
16,000.00	9,420.31	9,122.00	9,056.26	152.75	46.72	-70.65	-545.02	-365.20	6,228.03	6,042.68	185.35	33.602	
16,100.00	9,419.66	9,122.00	9,056.26	154.75	46.72	-70.65	-545.02	-365.20	6,326.25	6,138.94	187.31	33.775	
16,200.00	9,419.01	9,122.00	9,056.26	156.76	46.72	-70.65	-545.02	-365.20	6,424.53	6,235.26	189.27	33.944	
16,300.00	9,418.37	9,122.00	9,056.26	158.77	46.72	-70.65	-545.02	-365.20	6,522.85	6,331.63	191.23	34.110	
16,400.00	9,417.72	9,122.00	9,056.26	160.78	46.72	-70.65	-545.02	-365.20	6,621.23	6,428.04	193.20	34.272	
16,500.00	9,417.08	9,122.00	9,056.26	162.80	46.72	-70.65	-545.02	-365.20	6,719.66	6,524.49	195.17	34.431	
16,600.00	9,416.43	9,122.00	9,056.26	164.82	46.72	-70.65	-545.02	-365.20	6,818.13	6,620.99	197.14	34.586	
16,700.00	9,415.78	9,122.00	9,056.26	166.84	46.72	-70.65	-545.02	-365.20	6,916.65	6,717.54	199.11	34.737	
16,800.00	9,415.14	9,122.00	9,056.26	168.86	46.72	-70.65	-545.02	-365.20	7,015.21	6,814.12	201.09	34.886	
16,900.00	9,414.49	9,122.00	9,056.26	170.89	46.72	-70.65	-545.02	-365.20	7,113.81	6,910.74	203.07	35.032	
17,000.00	9,413.84	9,122.00	9,056.26	172.93	46.72	-70.65	-545.02	-365.20	7,212.44	7,007.39	205.05	35.174	
17,100.00	9,413.20	9,122.00	9,056.26	174.96	46.72	-70.65	-545.02	-365.20	7,311.12	7,104.08	207.03	35.313	
17,200.00	9,412.55	9,122.00	9,056.26	177.00	46.72	-70.65	-545.02	-365.20	7,409.83	7,200.81	209.02	35.450	
17,300.00	9,411.91	9,122.00	9,056.26	179.04	46.72	-70.65	-545.02	-365.20	7,508.57	7,297.56	211.01	35.584	
17,400.00	9,411.26	9,122.00	9,056.26	181.09	46.72	-70.65	-545.02	-365.20	7,607.35	7,394.35	213.00	35.715	
17,500.00	9,410.61	9,122.00	9,056.26	183.13	46.72	-70.65	-545.02	-365.20	7,706.15	7,491.16	214.99	35.844	
17,600.00	9,409.97	9,122.00	9,056.26	185.18	46.72	-70.65	-545.02	-365.20	7,804.99	7,588.01	216.99	35.970	
17,700.00	9,409.32	9,122.00	9,056.26	187.24	46.72	-70.65	-545.02	-365.20	7,903.86	7,684.88	218.98	36.094	
17,800.00	9,408.67	9,122.00	9,056.26	189.29	46.72	-70.65	-545.02	-365.20	8,002.76	7,781.78	220.98	36.215	
17,900.00	9,408.03	9,122.00	9,056.26	191.35	46.72	-70.65	-545.02	-365.20	8,101.68	7,878.70	222.98	36.334	
18,000.00	9,407.38	9,122.00	9,056.26	193.40	46.72	-70.65	-545.02	-365.20	8,200.63	7,975.65	224.98	36.451	
18,100.00	9,406.73	9,122.00	9,056.26	195.47	46.72	-70.65	-545.02	-365.20	8,299.60	8,072.62	226.98	36.565	
18,200.00	9,406.09	9,122.00	9,056.26	197.53	46.72	-70.65	-545.02	-365.20	8,398.60	8,169.62	228.99	36.677	
18,300.00	9,405.44	9,122.00	9,056.26	199.59	46.72	-70.65	-545.02	-365.20	8,497.62	8,266.63	230.99	36.788	
18,400.00	9,404.80	9,122.00	9,056.26	201.66	46.72	-70.65	-545.02	-365.20	8,596.67	8,363.67	233.00	36.896	
18,500.00	9,404.15	9,122.00	9,056.26	203.73	46.72	-70.65	-545.02	-365.20	8,695.73	8,460.73	235.01	37.002	
18,600.00	9,403.50	9,122.00	9,056.26	205.80	46.72	-70.65	-545.02	-365.20	8,794.82	8,557.81	237.02	37.106	
18,700.00	9,402.86	9,122.00	9,056.26	207.87	46.72	-70.65	-545.02	-365.20	8,893.93	8,654.90	239.03	37.209	
18,800.00	9,402.21	9,122.00	9,056.26	209.94	46.72	-70.65	-545.02	-365.20	8,993.06	8,752.02	241.04	37.310	
18,900.00	9,401.56	9,122.00	9,056.26	212.02	46.72	-70.65	-545.02	-365.20	9,092.21	8,849.15	243.05	37.408	
19,000.00	9,400.92	9,122.00	9,056.26	214.10	46.72	-70.65	-545.02	-365.20	9,191.37	8,946.30	245.07	37.506	
19,100.00	9,400.27	9,122.00	9,056.26	216.18	46.72	-70.65	-545.02	-365.20	9,290.55	9,043.47	247.08	37.601	
19,200.00	9,399.63	9,122.00	9,056.26	218.26	46.72	-70.65	-545.02	-365.20	9,389.75	9,140.66	249.10	37.695	
19,300.00	9,398.98	9,122.00	9,056.26	220.34	46.72	-70.65	-545.02	-365.20	9,488.97	9,237.86	251.12	37.787	
19,400.00	9,398.33	9,122.00	9,056.26	222.42	46.72	-70.65	-545.02	-365.20	9,588.21	9,335.07	253.14	37.878	
19,500.00	9,397.69	9,122.00	9,056.26	224.50	46.72	-70.65	-545.02	-365.20	9,687.46	9,432.30	255.16	37.967	
19,600.00	9,397.04	9,122.00	9,056.26	226.59	46.72	-70.65	-545.02	-365.20	9,786.72	9,529.54	257.18	38.054	
19,700.00	9,396.39	9,122.00	9,056.26	228.68	46.72	-70.65	-545.02	-365.20	9,886.00	9,626.80	259.20	38.141	
19,800.00	9,395.75	9,122.00	9,056.26	230.77	46.72	-70.65	-545.02	-365.20	9,985.29	9,724.07	261.22	38.225	

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Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



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 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	56.20	56.20	0.00	0.07	-159.65	-5,720.80	-2,121.70	6,101.57				
100.00	100.00	156.20	156.20	0.19	0.31	-159.65	-5,720.80	-2,121.70	6,101.57	6,101.06	0.51	N/A	
200.00	200.00	256.20	256.20	0.73	0.65	-159.65	-5,720.80	-2,121.70	6,101.57	6,100.19	1.38	4,412.940	
300.00	300.00	356.20	356.20	1.27	0.99	-159.65	-5,720.80	-2,121.70	6,101.57	6,099.31	2.26	2,702.787	
400.00	400.00	456.20	456.20	1.81	1.33	-159.65	-5,720.80	-2,121.70	6,101.57	6,098.44	3.13	1,947.911	
500.00	500.00	556.20	556.20	2.34	1.66	-159.65	-5,720.80	-2,121.70	6,101.57	6,097.56	4.01	1,522.643	
600.00	600.00	656.20	656.20	2.88	2.00	-159.65	-5,720.80	-2,121.70	6,101.57	6,096.69	4.88	1,249.789	
700.00	700.00	756.20	756.20	3.42	2.34	-159.65	-5,720.80	-2,121.70	6,101.57	6,095.81	5.76	1,059.864	
800.00	800.00	856.20	856.20	3.96	2.67	-159.65	-5,720.80	-2,121.70	6,101.57	6,094.94	6.63	920.048	
900.00	900.00	956.20	956.20	4.50	3.01	-159.65	-5,720.80	-2,121.70	6,101.57	6,094.06	7.51	812.822	
1,000.00	1,000.00	1,056.20	1,056.20	5.03	3.35	-159.65	-5,720.80	-2,121.70	6,101.57	6,093.19	8.38	727.980	
1,100.00	1,100.00	1,156.20	1,156.20	5.57	3.69	-159.65	-5,720.80	-2,121.70	6,101.57	6,092.31	9.26	659.176	
1,200.00	1,200.00	1,256.20	1,256.20	6.11	4.02	-159.65	-5,720.80	-2,121.70	6,101.57	6,091.44	10.13	602.254	
1,300.00	1,300.00	1,356.20	1,356.20	6.65	4.36	-159.65	-5,720.80	-2,121.70	6,101.57	6,090.56	11.01	554.382	
1,400.00	1,400.00	1,456.20	1,456.20	7.18	4.70	-159.65	-5,720.80	-2,121.70	6,101.57	6,089.69	11.88	513.560	
1,500.00	1,500.00	1,556.20	1,556.20	7.72	5.03	-159.65	-5,720.80	-2,121.70	6,101.57	6,088.81	12.76	478.337	
1,600.00	1,600.00	1,656.20	1,656.20	8.26	5.37	-159.65	-5,720.80	-2,121.70	6,101.57	6,087.94	13.63	447.636	
1,700.00	1,700.00	1,756.20	1,756.20	8.80	5.71	-159.65	-5,720.80	-2,121.70	6,101.57	6,087.07	14.51	420.638	
1,800.00	1,800.00	1,856.20	1,856.20	9.33	6.05	-159.65	-5,720.80	-2,121.70	6,101.57	6,086.19	15.38	396.712	
1,900.00	1,899.98	1,956.18	1,956.18	9.86	6.38	-58.58	-5,720.80	-2,121.70	6,100.66	6,084.42	16.24	375.714	
2,000.00	1,999.84	2,056.04	2,056.04	10.37	6.72	-58.67	-5,720.80	-2,121.70	6,097.93	6,080.86	17.08	357.079	
2,100.00	2,099.45	2,155.65	2,155.65	10.88	7.06	-58.81	-5,720.80	-2,121.70	6,093.40	6,075.48	17.92	340.105	
2,200.00	2,198.70	2,254.90	2,254.90	11.41	7.39	-59.02	-5,720.80	-2,121.70	6,087.07	6,068.32	18.76	324.553	
2,300.00	2,297.47	2,353.67	2,353.67	11.94	7.72	-59.29	-5,720.80	-2,121.70	6,078.98	6,059.38	19.60	310.213	
2,400.00	2,395.62	2,451.82	2,451.82	12.49	8.05	-59.61	-5,720.80	-2,121.70	6,069.14	6,048.70	20.44	296.898	
2,500.00	2,493.06	2,549.26	2,549.26	13.05	8.38	-59.99	-5,720.80	-2,121.70	6,057.61	6,036.31	21.30	284.444	
2,600.00	2,589.64	2,645.84	2,645.84	13.66	8.71	-60.43	-5,720.80	-2,121.70	6,044.41	6,022.24	22.16	272.710	
2,700.00	2,685.27	2,741.47	2,741.47	14.29	9.03	-60.92	-5,720.80	-2,121.70	6,029.60	6,006.55	23.05	261.572	
2,800.00	2,779.82	2,836.02	2,836.02	14.95	9.35	-61.47	-5,720.80	-2,121.70	6,013.23	5,989.27	23.96	250.924	
2,900.00	2,873.17	2,929.37	2,929.37	15.66	9.66	-62.08	-5,720.80	-2,121.70	5,995.37	5,970.46	24.91	240.678	
3,000.00	2,965.21	3,021.41	3,021.41	16.42	9.97	-62.74	-5,720.80	-2,121.70	5,976.08	5,950.18	25.90	230.760	
3,100.00	3,055.84	3,112.04	3,112.04	17.24	10.28	-63.45	-5,720.80	-2,121.70	5,955.43	5,928.50	26.93	221.113	
3,200.00	3,144.94	3,201.14	3,201.14	18.12	10.58	-64.21	-5,720.80	-2,121.70	5,933.51	5,905.48	28.03	211.696	
3,300.00	3,232.39	3,288.59	3,288.59	19.07	10.88	-65.02	-5,720.80	-2,121.70	5,910.39	5,881.20	29.19	202.482	
3,400.00	3,318.33	3,374.53	3,374.53	20.09	11.16	-65.65	-5,720.80	-2,121.70	5,886.34	5,855.90	30.44	193.402	
3,500.00	3,404.05	3,460.25	3,460.25	21.16	11.45	-66.05	-5,720.80	-2,121.70	5,862.47	5,830.72	31.75	184.673	
3,600.00	3,489.76	3,545.96	3,545.96	22.27	11.74	-66.46	-5,720.80	-2,121.70	5,838.95	5,805.86	33.09	176.452	
3,700.00	3,575.48	3,631.68	3,631.68	23.40	12.03	-66.87	-5,720.80	-2,121.70	5,815.79	5,781.32	34.47	168.728	
3,800.00	3,661.19	3,717.39	3,717.39	24.56	12.32	-67.28	-5,720.80	-2,121.70	5,793.00	5,757.12	35.87	161.479	
3,900.00	3,746.90	3,803.10	3,803.10	25.74	12.61	-67.70	-5,720.80	-2,121.70	5,770.58	5,733.27	37.31	154.681	
4,000.00	3,832.62	3,888.82	3,888.82	26.94	12.90	-68.11	-5,720.80	-2,121.70	5,748.53	5,709.77	38.76	148.308	
4,100.00	3,918.33	3,974.53	3,974.53	28.16	13.19	-68.53	-5,720.80	-2,121.70	5,726.86	5,686.62	40.24	142.332	
4,200.00	4,004.05	4,060.25	4,060.25	29.39	13.48	-68.95	-5,720.80	-2,121.70	5,705.57	5,663.84	41.73	136.727	
4,300.00	4,089.76	4,145.96	4,145.96	30.64	13.77	-69.38	-5,720.80	-2,121.70	5,684.67	5,641.43	43.24	131.466	
4,400.00	4,175.48	4,231.68	4,231.68	31.89	14.05	-69.81	-5,720.80	-2,121.70	5,664.17	5,619.40	44.77	126.525	
4,500.00	4,261.19	4,317.39	4,317.39	33.16	14.34	-70.24	-5,720.80	-2,121.70	5,644.05	5,597.75	46.31	121.881	
4,600.00	4,346.91	4,403.11	4,403.11	34.43	14.63	-70.67	-5,720.80	-2,121.70	5,624.34	5,576.48	47.86	117.513	
4,700.00	4,432.62	4,488.82	4,488.82	35.72	14.92	-71.10	-5,720.80	-2,121.70	5,605.03	5,555.60	49.43	113.399	
4,800.00	4,518.33	4,574.53	4,574.53	37.01	15.21	-71.54	-5,720.80	-2,121.70	5,586.13	5,535.13	51.00	109.521	
4,900.00	4,604.83	4,661.03	4,661.03	38.28	15.50	-71.64	-5,720.80	-2,121.70	5,568.12	5,515.56	52.56	105.946	
5,000.00	4,693.02	4,749.22	4,749.22	39.48	15.80	-71.73	-5,720.80	-2,121.70	5,551.55	5,497.50	54.05	102.706	
5,100.00	4,782.80	4,839.00	4,839.00	40.62	16.10	-71.84	-5,720.80	-2,121.70	5,536.40	5,480.91	55.49	99.770	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design Screech Owl Federal Com - #4H - WB1 - Plan #1 05-14-14												Offset Site Error:	0.00 usft
Survey Program: 0-Reference												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,200.00	4,874.07	4,930.27	4,930.27	41.68	16.41	-71.94	-5,720.80	-2,121.70	5,522.61	5,465.74	56.87	97.110	
5,300.00	4,966.70	5,022.90	5,022.90	42.69	16.72	-72.05	-5,720.80	-2,121.70	5,510.14	5,451.96	58.19	94.699	
5,400.00	5,060.59	5,116.79	5,116.79	43.62	17.04	-72.16	-5,720.80	-2,121.70	5,498.96	5,439.52	59.44	92.513	
5,500.00	5,155.63	5,211.83	5,211.83	44.48	17.36	-72.26	-5,720.80	-2,121.70	5,489.00	5,428.37	60.63	90.532	
5,600.00	5,251.69	5,307.89	5,307.89	45.28	17.68	-72.36	-5,720.80	-2,121.70	5,480.26	5,418.50	61.76	88.737	
5,700.00	5,348.66	5,404.86	5,404.86	46.02	18.01	-72.45	-5,720.80	-2,121.70	5,472.67	5,409.85	62.82	87.112	
5,800.00	5,446.43	5,502.63	5,502.63	46.69	18.34	-72.54	-5,720.80	-2,121.70	5,466.22	5,402.40	63.83	85.640	
5,900.00	5,544.87	5,601.07	5,601.07	47.30	18.67	-72.61	-5,720.80	-2,121.70	5,460.89	5,396.11	64.77	84.310	
6,000.00	5,643.86	5,700.06	5,700.06	47.85	19.01	-72.67	-5,720.80	-2,121.70	5,456.63	5,390.97	65.66	83.109	
6,100.00	5,743.29	5,799.49	5,799.49	48.35	19.34	-72.71	-5,720.80	-2,121.70	5,453.44	5,386.96	66.48	82.026	
6,200.00	5,843.02	5,899.22	5,899.22	48.79	19.68	-72.74	-5,720.80	-2,121.70	5,451.30	5,384.04	67.26	81.052	
6,300.00	5,942.95	5,999.15	5,999.15	49.19	20.01	-72.76	-5,720.80	-2,121.70	5,450.20	5,382.23	67.98	80.177	
6,380.88	6,023.82	6,080.02	6,080.02	49.47	20.29	-72.76	-5,720.80	-2,121.70	5,449.92	5,381.39	68.53	79.527	
6,400.00	6,042.94	6,099.14	6,099.14	49.53	20.35	-173.86	-5,720.80	-2,121.70	5,450.04	5,381.50	68.54	79.512	
6,500.00	6,142.94	6,199.14	6,199.14	49.88	20.69	-173.86	-5,720.80	-2,121.70	5,450.04	5,380.81	69.23	78.722	
6,600.00	6,242.94	6,299.14	6,299.14	50.22	21.03	-173.86	-5,720.80	-2,121.70	5,450.04	5,380.12	69.92	77.944	
6,700.00	6,342.94	6,399.14	6,399.14	50.57	21.36	-173.86	-5,720.80	-2,121.70	5,450.04	5,379.42	70.62	77.177	
6,800.00	6,442.94	6,499.14	6,499.14	50.92	21.70	-173.86	-5,720.80	-2,121.70	5,450.04	5,378.72	71.32	76.422	
6,900.00	6,542.94	6,599.14	6,599.14	51.28	22.04	-173.86	-5,720.80	-2,121.70	5,450.04	5,378.02	72.02	75.678	
7,000.00	6,642.94	6,699.14	6,699.14	51.64	22.37	-173.86	-5,720.80	-2,121.70	5,450.04	5,377.32	72.72	74.945	
7,100.00	6,742.94	6,799.14	6,799.14	52.00	22.71	-173.86	-5,720.80	-2,121.70	5,450.04	5,376.61	73.43	74.223	
7,200.00	6,842.94	6,899.14	6,899.14	52.36	23.05	-173.86	-5,720.80	-2,121.70	5,450.04	5,375.90	74.14	73.512	
7,300.00	6,942.94	6,999.14	6,999.14	52.73	23.39	-173.86	-5,720.80	-2,121.70	5,450.04	5,375.19	74.85	72.812	
7,400.00	7,042.94	7,025.00	7,025.00	53.10	23.47	-173.86	-5,720.81	-2,121.70	5,450.55	5,375.24	75.32	72.369	
7,500.00	7,142.94	7,036.80	7,036.80	53.47	23.50	-173.86	-5,721.01	-2,121.70	5,452.67	5,376.94	75.73	72.005	
7,600.00	7,242.94	7,050.00	7,049.98	53.85	23.53	-173.86	-5,721.59	-2,121.70	5,456.52	5,380.37	76.14	71.660	
7,700.00	7,342.94	7,050.00	7,049.98	54.23	23.53	-173.86	-5,721.59	-2,121.70	5,462.00	5,385.47	76.53	71.370	
7,800.00	7,442.94	7,050.00	7,049.98	54.61	23.53	-173.86	-5,721.59	-2,121.70	5,469.30	5,392.38	76.92	71.103	
7,900.00	7,542.94	7,075.00	7,074.89	54.99	23.60	-173.87	-5,723.68	-2,121.70	5,478.05	5,400.67	77.38	70.797	
8,000.00	7,642.94	7,075.00	7,074.89	55.38	23.60	-173.87	-5,723.68	-2,121.70	5,488.52	5,410.75	77.77	70.572	
8,100.00	7,742.94	7,075.00	7,074.89	55.77	23.60	-173.87	-5,723.68	-2,121.70	5,500.79	5,422.62	78.17	70.371	
8,200.00	7,842.94	7,100.00	7,099.66	56.16	23.66	-173.87	-5,727.08	-2,121.69	5,514.54	5,435.91	78.63	70.130	
8,300.00	7,942.94	7,100.00	7,099.66	56.56	23.66	-173.87	-5,727.08	-2,121.69	5,529.92	5,450.89	79.04	69.968	
8,400.00	8,042.94	7,100.00	7,099.66	56.95	23.66	-173.87	-5,727.08	-2,121.69	5,547.07	5,467.63	79.44	69.828	
8,500.00	8,142.94	7,125.00	7,124.21	57.35	23.73	-173.87	-5,731.76	-2,121.69	5,565.72	5,485.81	79.91	69.649	
8,600.00	8,242.94	7,125.00	7,124.21	57.75	23.73	-173.87	-5,731.76	-2,121.69	5,585.90	5,505.58	80.32	69.545	
8,700.00	8,342.94	7,125.00	7,124.21	58.16	23.73	-173.87	-5,731.76	-2,121.69	5,607.79	5,527.05	80.73	69.463	
8,800.00	8,442.94	7,150.00	7,148.49	58.56	23.79	-173.88	-5,737.72	-2,121.68	5,631.24	5,550.03	81.21	69.342	
8,900.00	8,542.94	7,150.00	7,148.49	58.97	23.79	-173.88	-5,737.72	-2,121.68	5,656.06	5,574.43	81.62	69.293	
9,000.00	8,642.94	7,150.00	7,148.49	59.38	23.79	-173.88	-5,737.72	-2,121.68	5,682.53	5,600.49	82.04	69.264	
9,100.00	8,742.94	7,162.26	7,160.27	59.79	23.83	-173.89	-5,741.11	-2,121.68	5,710.46	5,627.96	82.49	69.224	
9,200.00	8,842.94	7,175.00	7,172.42	60.20	23.86	-173.89	-5,744.95	-2,121.68	5,739.93	5,656.98	82.95	69.200	
9,300.00	8,942.94	7,175.00	7,172.42	60.62	23.86	-173.89	-5,744.95	-2,121.68	5,770.80	5,687.43	83.37	69.219	
9,400.00	9,042.54	7,175.00	7,172.42	61.03	23.86	6.67	-5,744.95	-2,121.68	5,796.05	5,712.82	83.23	69.637	
9,500.00	9,139.32	7,200.00	7,195.94	61.44	23.92	6.56	-5,753.41	-2,121.67	5,805.73	5,724.80	80.93	71.739	
9,600.00	9,230.35	7,200.00	7,195.94	61.85	23.92	6.63	-5,753.41	-2,121.67	5,799.64	5,723.07	76.57	75.742	
9,700.00	9,312.86	7,200.00	7,195.94	62.24	23.92	6.89	-5,753.41	-2,121.67	5,778.11	5,707.60	70.51	81.943	
9,800.00	9,384.34	7,225.00	7,218.98	62.61	23.99	7.39	-5,763.10	-2,121.66	5,741.52	5,678.26	63.27	90.750	
9,900.00	9,442.63	7,225.00	7,218.98	62.95	23.99	8.20	-5,763.10	-2,121.66	5,690.52	5,635.07	55.46	102.609	
10,000.00	9,485.95	7,225.00	7,218.98	63.28	23.99	9.48	-5,763.10	-2,121.66	5,626.62	5,578.28	48.33	116.411	
10,100.00	9,512.99	7,225.00	7,218.98	63.61	23.99	11.58	-5,763.10	-2,121.66	5,551.33	5,507.51	43.82	126.678	
10,200.00	9,522.91	7,225.00	7,218.98	63.96	23.99	15.32	-5,763.10	-2,121.66	5,466.54	5,422.06	44.48	122.912	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 17 20 FED 001
 Site Error: 0.00 usft
 Reference Well: 6H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error: 0.00 usft
Survey Program: 0-													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	9,521.18	7,250.00	7,241.49	64.35	24.05	16.51	-5,773.98	-2,121.65	5,376.49	5,330.36	46.12	116.568	
10,400.00	9,519.14	7,250.00	7,241.49	64.79	24.05	16.51	-5,773.98	-2,121.65	5,286.58	5,239.70	46.88	112.772	
10,500.00	9,517.10	7,250.00	7,241.49	65.30	24.05	16.51	-5,773.98	-2,121.65	5,197.03	5,149.37	47.66	109.033	
10,600.00	9,515.06	7,250.00	7,241.49	65.87	24.05	16.51	-5,773.98	-2,121.65	5,107.88	5,059.40	48.48	105.358	
10,700.00	9,513.02	7,250.00	7,241.49	66.50	24.05	16.51	-5,773.98	-2,121.65	5,019.14	4,969.81	49.32	101.757	
10,800.00	9,510.98	7,250.00	7,241.49	67.20	24.05	16.51	-5,773.98	-2,121.65	4,930.82	4,880.63	50.19	98.235	
10,900.00	9,508.93	7,262.30	7,252.35	67.97	24.08	16.59	-5,779.76	-2,121.64	4,842.79	4,791.62	51.17	94.644	
11,000.00	9,506.89	7,275.00	7,263.40	68.81	24.12	16.67	-5,786.02	-2,121.64	4,755.35	4,703.18	52.17	91.153	
11,100.00	9,504.85	7,275.00	7,263.40	69.71	24.12	16.67	-5,786.02	-2,121.64	4,668.22	4,615.12	53.11	87.905	
11,200.00	9,502.81	7,275.00	7,263.40	70.68	24.12	16.67	-5,786.02	-2,121.64	4,581.62	4,527.56	54.06	84.750	
11,300.00	9,500.77	7,275.00	7,263.40	71.71	24.12	16.67	-5,786.02	-2,121.64	4,495.58	4,440.55	55.03	81.687	
11,400.00	9,498.73	7,275.00	7,263.40	72.80	24.12	16.67	-5,786.02	-2,121.64	4,410.13	4,354.10	56.02	78.718	
11,500.00	9,496.69	7,300.00	7,284.64	73.95	24.18	16.83	-5,799.19	-2,121.63	4,325.14	4,267.94	57.20	75.617	
11,600.00	9,494.65	7,300.00	7,284.64	75.16	24.18	16.83	-5,799.19	-2,121.63	4,240.66	4,182.45	58.22	72.840	
11,700.00	9,492.61	7,300.00	7,284.64	76.41	24.18	16.83	-5,799.19	-2,121.63	4,156.88	4,097.63	59.25	70.154	
11,800.00	9,490.57	7,300.00	7,284.64	77.72	24.18	16.83	-5,799.19	-2,121.63	4,073.83	4,013.53	60.30	67.559	
11,900.00	9,488.53	7,312.44	7,294.95	79.07	24.21	16.91	-5,806.15	-2,121.62	3,991.37	3,929.93	61.44	64.960	
12,000.00	9,486.49	7,325.00	7,305.17	80.46	24.24	16.98	-5,813.46	-2,121.61	3,909.75	3,847.15	62.60	62.456	
12,100.00	9,484.44	7,325.00	7,305.17	81.89	24.24	16.98	-5,813.46	-2,121.61	3,828.81	3,765.13	63.68	60.125	
12,200.00	9,482.40	7,325.00	7,305.17	83.36	24.24	16.98	-5,813.46	-2,121.61	3,748.79	3,684.02	64.77	57.877	
12,300.00	9,480.36	7,338.28	7,315.76	84.86	24.29	17.07	-5,821.47	-2,121.60	3,669.55	3,603.59	65.96	55.630	
12,400.00	9,478.32	7,350.00	7,324.92	86.40	24.33	17.14	-5,828.77	-2,121.60	3,591.30	3,524.15	67.15	53.479	
12,500.00	9,476.28	7,350.00	7,324.92	87.96	24.33	17.14	-5,828.77	-2,121.60	3,513.99	3,445.71	68.27	51.471	
12,600.00	9,474.24	7,350.00	7,324.92	89.55	24.33	17.14	-5,828.77	-2,121.60	3,437.84	3,368.45	69.40	49.539	
12,700.00	9,472.20	7,375.00	7,343.85	91.17	24.42	17.29	-5,845.11	-2,121.58	3,362.60	3,291.89	70.70	47.560	
12,800.00	9,470.16	7,375.00	7,343.85	92.82	24.42	17.29	-5,845.11	-2,121.58	3,288.54	3,216.70	71.84	45.774	
12,900.00	9,468.12	7,375.00	7,343.85	94.48	24.42	17.29	-5,845.11	-2,121.58	3,215.90	3,142.91	72.99	44.060	
13,000.00	9,466.08	7,400.00	7,361.89	96.17	24.53	17.44	-5,862.41	-2,121.57	3,144.33	3,070.02	74.32	42.309	
13,100.00	9,464.04	7,400.00	7,361.89	97.88	24.53	17.44	-5,862.41	-2,121.57	3,074.24	2,998.76	75.48	40.731	
13,200.00	9,461.99	7,413.84	7,371.48	99.61	24.59	17.52	-5,872.38	-2,121.56	3,005.60	2,928.86	76.74	39.166	
13,300.00	9,459.95	7,425.00	7,379.00	101.36	24.64	17.58	-5,880.63	-2,121.55	2,938.55	2,860.56	77.99	37.679	
13,400.00	9,457.91	7,425.00	7,379.00	103.12	24.64	17.58	-5,880.63	-2,121.55	2,873.25	2,794.09	79.16	36.295	
13,500.00	9,455.87	7,450.00	7,395.14	104.90	24.76	17.72	-5,899.72	-2,121.53	2,809.50	2,728.98	80.52	34.891	
13,600.00	9,453.83	7,450.00	7,395.14	106.70	24.76	17.72	-5,899.72	-2,121.53	2,747.74	2,666.03	81.71	33.629	
13,700.00	9,451.79	7,475.00	7,410.25	108.50	24.90	17.85	-5,919.63	-2,121.51	2,687.86	2,604.79	83.08	32.355	
13,800.00	9,449.75	7,475.00	7,410.25	110.33	24.90	17.85	-5,919.63	-2,121.51	2,630.10	2,545.83	84.27	31.210	
13,900.00	9,447.71	7,500.00	7,424.30	112.16	25.05	17.97	-5,940.30	-2,121.49	2,574.49	2,488.84	85.65	30.059	
14,000.00	9,445.67	7,500.00	7,424.30	114.01	25.05	17.97	-5,940.30	-2,121.49	2,521.26	2,434.41	86.85	29.030	
14,100.00	9,443.63	7,525.00	7,437.26	115.87	25.22	18.09	-5,961.68	-2,121.47	2,470.34	2,382.10	88.23	27.997	
14,200.00	9,441.59	7,536.96	7,443.05	117.74	25.30	18.14	-5,972.15	-2,121.46	2,422.04	2,332.51	89.53	27.052	
14,300.00	9,439.54	7,550.00	7,449.07	119.62	25.39	18.20	-5,983.71	-2,121.45	2,376.44	2,285.60	90.84	26.161	
14,400.00	9,437.50	7,575.00	7,459.72	121.51	25.59	18.30	-6,006.33	-2,121.43	2,333.71	2,241.48	92.23	25.303	
14,500.00	9,435.46	7,575.00	7,459.72	123.41	25.59	18.30	-6,006.33	-2,121.43	2,293.89	2,200.44	93.45	24.546	
14,600.00	9,433.42	7,600.00	7,469.16	125.32	25.79	18.39	-6,029.47	-2,121.41	2,257.02	2,162.17	94.85	23.795	
14,700.00	9,431.38	7,625.00	7,477.39	127.24	26.02	18.48	-6,053.08	-2,121.39	2,223.50	2,127.25	96.25	23.101	
14,800.00	9,429.34	7,625.00	7,477.39	129.16	26.02	18.48	-6,053.08	-2,121.39	2,193.26	2,095.78	97.48	22.499	
14,900.00	9,427.46	7,650.00	7,484.36	131.09	26.25	18.40	-6,077.08	-2,121.36	2,166.40	2,067.73	98.66	21.958	
15,000.00	9,426.77	7,675.00	7,490.07	133.03	26.51	18.38	-6,101.42	-2,121.34	2,143.97	2,044.03	99.94	21.453	
15,100.00	9,426.12	7,689.68	7,492.83	134.98	26.66	18.41	-6,115.83	-2,121.33	2,125.16	2,023.89	101.26	20.986	
15,200.00	9,425.48	7,700.00	7,494.50	136.93	26.77	18.43	-6,126.02	-2,121.32	2,110.16	2,007.59	102.56	20.574	
15,300.00	9,424.83	7,725.00	7,497.64	138.89	27.05	18.46	-6,150.82	-2,121.29	2,098.74	1,994.80	103.95	20.191	
15,400.00	9,424.18	7,750.00	7,499.47	140.85	27.34	18.47	-6,175.75	-2,121.27	2,091.22	1,985.90	105.33	19.855	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Offset Design Screech Owl Federal Com - #4H - WB1 - Plan #1 05-14-14													Offset Site Error: 0.00 usft
Survey Program: 0-Reference													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,500.00	9,423.54	7,775.03	7,500.00	142.82	27.65	18.48	-6,200.78	-2,121.25	2,087.62	1,980.92	106.70	19.565	
15,563.77	9,423.13	7,794.76	7,499.90	144.08	27.90	18.48	-6,220.50	-2,121.23	2,087.12	1,979.52	107.60	19.398	
15,600.00	9,422.89	7,830.99	7,499.71	144.80	28.39	18.49	-6,256.73	-2,121.19	2,087.10	1,978.85	108.26	19.279	
15,700.00	9,422.25	7,930.99	7,499.19	146.78	29.84	18.49	-6,356.73	-2,121.10	2,087.05	1,976.94	110.11	18.954	
15,800.00	9,421.60	8,030.99	7,498.68	148.77	31.46	18.50	-6,456.73	-2,121.00	2,086.99	1,974.94	112.06	18.624	
15,900.00	9,420.95	8,130.99	7,498.16	150.76	33.23	18.51	-6,556.73	-2,120.91	2,086.94	1,972.86	114.08	18.293	
16,000.00	9,420.31	8,230.99	7,497.64	152.75	35.12	18.51	-6,656.72	-2,120.81	2,086.89	1,970.71	116.18	17.963	
16,100.00	9,419.66	8,330.99	7,497.12	154.75	37.12	18.52	-6,756.72	-2,120.72	2,086.83	1,968.49	118.34	17.635	
16,200.00	9,419.01	8,430.99	7,496.61	156.76	39.21	18.53	-6,856.72	-2,120.63	2,086.78	1,966.23	120.55	17.311	
16,300.00	9,418.37	8,530.99	7,496.09	158.77	41.37	18.53	-6,956.72	-2,120.53	2,086.73	1,963.92	122.81	16.992	
16,400.00	9,417.72	8,630.99	7,495.57	160.78	43.60	18.54	-7,056.72	-2,120.44	2,086.67	1,961.57	125.11	16.679	
16,500.00	9,417.08	8,730.99	7,495.06	162.80	45.88	18.55	-7,156.72	-2,120.34	2,086.62	1,959.18	127.44	16.373	
16,600.00	9,416.43	8,830.99	7,494.54	164.82	48.22	18.55	-7,256.71	-2,120.25	2,086.56	1,956.76	129.81	16.075	
16,700.00	9,415.78	8,930.99	7,494.02	166.84	50.59	18.56	-7,356.71	-2,120.15	2,086.51	1,954.31	132.20	15.783	
16,800.00	9,415.14	9,030.99	7,493.50	168.86	53.00	18.57	-7,456.71	-2,120.06	2,086.46	1,951.84	134.61	15.500	
16,900.00	9,414.49	9,130.99	7,492.99	170.89	55.44	18.57	-7,556.71	-2,119.96	2,086.40	1,949.35	137.05	15.224	
17,000.00	9,413.84	9,230.99	7,492.47	172.93	57.91	18.58	-7,656.71	-2,119.87	2,086.35	1,946.84	139.51	14.955	
17,100.00	9,413.20	9,330.99	7,491.95	174.96	60.40	18.59	-7,756.70	-2,119.77	2,086.30	1,944.32	141.98	14.694	
17,200.00	9,412.55	9,430.99	7,491.43	177.00	62.91	18.59	-7,856.70	-2,119.68	2,086.24	1,941.78	144.47	14.441	
17,300.00	9,411.91	9,530.98	7,490.92	179.04	65.44	18.60	-7,956.70	-2,119.58	2,086.19	1,939.22	146.97	14.195	
17,400.00	9,411.26	9,630.98	7,490.40	181.09	67.98	18.61	-8,056.70	-2,119.49	2,086.14	1,936.66	149.48	13.956	
17,500.00	9,410.61	9,730.98	7,489.88	183.13	70.54	18.61	-8,156.70	-2,119.40	2,086.08	1,934.08	152.00	13.724	
17,600.00	9,409.97	9,830.98	7,489.37	185.18	73.12	18.62	-8,256.70	-2,119.30	2,086.03	1,931.49	154.54	13.498	
17,700.00	9,409.32	9,930.98	7,488.85	187.24	75.70	18.63	-8,356.69	-2,119.21	2,085.98	1,928.90	157.08	13.280	
17,800.00	9,408.67	10,030.98	7,488.33	189.29	78.30	18.63	-8,456.69	-2,119.11	2,085.92	1,926.29	159.63	13.067	
17,900.00	9,408.03	10,130.98	7,487.81	191.35	80.90	18.64	-8,556.69	-2,119.02	2,085.87	1,923.68	162.19	12.861	
18,000.00	9,407.38	10,230.98	7,487.30	193.40	83.52	18.65	-8,656.69	-2,118.92	2,085.82	1,921.06	164.76	12.660	
18,100.00	9,406.73	10,330.98	7,486.78	195.47	86.14	18.65	-8,756.69	-2,118.83	2,085.76	1,918.44	167.33	12.465	
18,200.00	9,406.09	10,430.98	7,486.26	197.53	88.77	18.66	-8,856.69	-2,118.73	2,085.71	1,915.80	169.91	12.276	
18,300.00	9,405.44	10,530.98	7,485.75	199.59	91.40	18.67	-8,956.68	-2,118.64	2,085.66	1,913.17	172.49	12.091	
18,400.00	9,404.80	10,630.98	7,485.23	201.66	94.04	18.67	-9,056.68	-2,118.54	2,085.61	1,910.53	175.08	11.912	
18,500.00	9,404.15	10,730.98	7,484.71	203.73	96.69	18.68	-9,156.68	-2,118.45	2,085.55	1,907.88	177.67	11.738	
18,600.00	9,403.50	10,830.98	7,484.19	205.80	99.34	18.69	-9,256.68	-2,118.35	2,085.50	1,905.23	180.27	11.569	
18,700.00	9,402.86	10,930.98	7,483.68	207.87	102.00	18.69	-9,356.68	-2,118.26	2,085.45	1,902.57	182.87	11.404	
18,800.00	9,402.21	11,030.98	7,483.16	209.94	104.66	18.70	-9,456.68	-2,118.17	2,085.39	1,899.91	185.48	11.243	
18,900.00	9,401.56	11,130.98	7,482.64	212.02	107.33	18.71	-9,556.67	-2,118.07	2,085.34	1,897.25	188.09	11.087	
19,000.00	9,400.92	11,230.98	7,482.13	214.10	110.00	18.72	-9,656.67	-2,117.98	2,085.29	1,894.58	190.70	10.935	
19,100.00	9,400.27	11,330.98	7,481.61	216.18	112.67	18.72	-9,756.67	-2,117.88	2,085.23	1,891.91	193.32	10.786	
19,200.00	9,399.63	11,430.98	7,481.09	218.26	115.34	18.73	-9,856.67	-2,117.79	2,085.18	1,889.24	195.94	10.642	
19,300.00	9,398.98	11,530.98	7,480.57	220.34	118.02	18.74	-9,956.67	-2,117.69	2,085.13	1,886.57	198.56	10.501	
19,400.00	9,398.33	11,630.98	7,480.06	222.42	120.70	18.74	-10,056.67	-2,117.60	2,085.08	1,883.89	201.19	10.364	
19,500.00	9,397.69	11,730.98	7,479.54	224.50	123.39	18.75	-10,156.66	-2,117.50	2,085.02	1,881.21	203.82	10.230	
19,600.00	9,397.04	11,830.98	7,479.02	226.59	126.07	18.76	-10,256.66	-2,117.41	2,084.97	1,878.52	206.45	10.099	
19,700.00	9,396.39	11,930.98	7,478.50	228.68	128.76	18.76	-10,356.66	-2,117.31	2,084.92	1,875.83	209.08	9.972	
19,800.00	9,395.75	12,030.98	7,477.99	230.77	131.45	18.77	-10,456.66	-2,117.22	2,084.87	1,873.15	211.72	9.847	
19,900.00	9,395.10	12,130.98	7,477.47	232.86	134.15	18.78	-10,556.66	-2,117.12	2,084.81	1,870.45	214.36	9.726	
19,915.77	9,395.00	12,146.75	7,477.39	233.19	134.57	18.78	-10,572.43	-2,117.11	2,084.81	1,870.03	214.77	9.707 CC, ES, SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



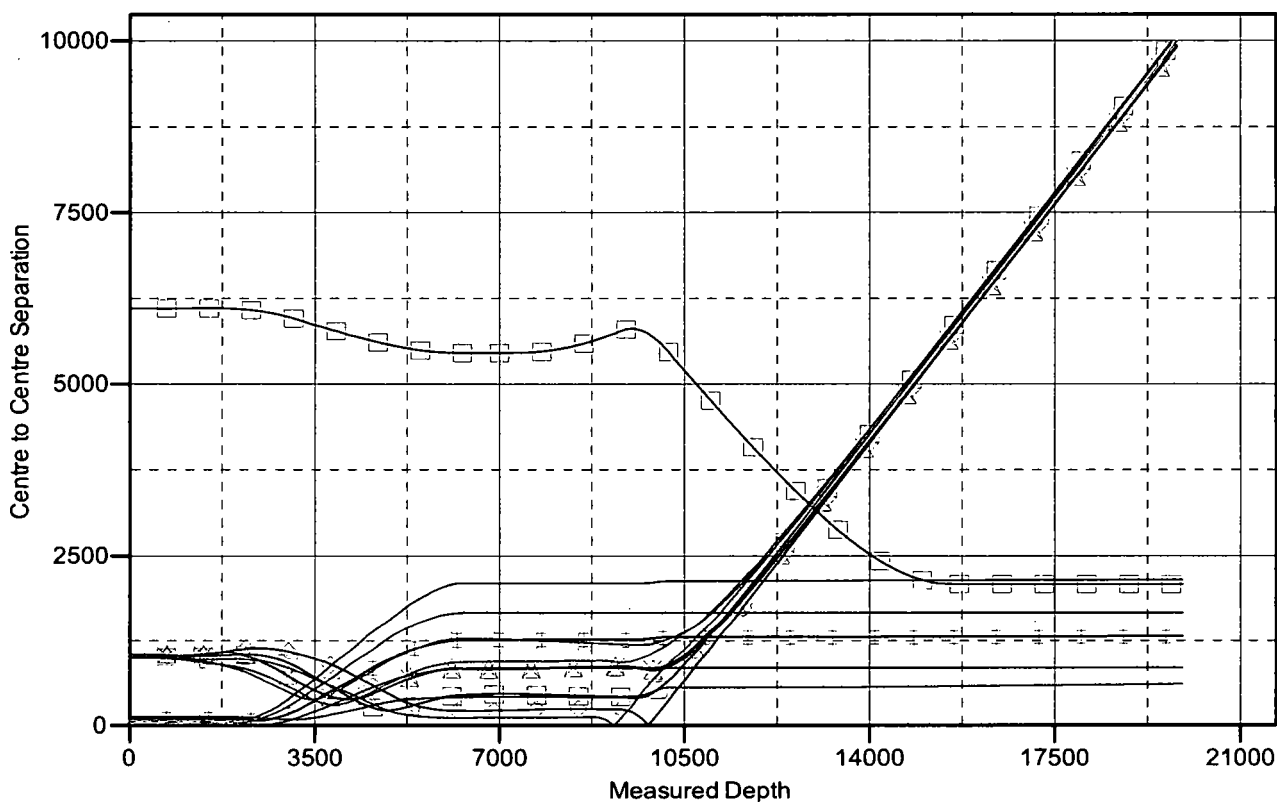
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Reference Depths are relative to GL + KB @ 3286.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: 6H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.06°

Ladder Plot



LEGEND

1, Plan 1 12-21-17 V0	✱ 14HD, ST01 / Job #61221, Surveys (Patterson 815) V0	✱ 6HC, OH / Job #61219, Surveys (Patterson 815) V0
2H / Job #61218, Surveys (Patterson 815) V0	✱ 14HD, OH / Job #61221, Surveys (Patterson 815) V0	✱ 3H, OH, Plan 1 12-21-17 V0
OH / Job #61217, Surveys (Patterson 815) V0	✱ 2H, OH, Plan 1 12-21-17 V0	✱ 21HA, OH / Job #61216, Surveys (Patterson 815) V0
OH / Job #61220, Surveys (Patterson 815) V0	✱ 4H, OH, Plan 1 12-21-17 V0	
1, Plan 1 12-21-17 V0	✱ #4H, WB1, Plan #1 05-14-14 V0	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Approval Date: 07/06/2018



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 17 20 FED 001
Site Error: 0.00 usft
Reference Well: 6H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Offset Datum

Reference Depths are relative to GL + KB @ 3286.00usft

Offset Depths are relative to Offset Datum

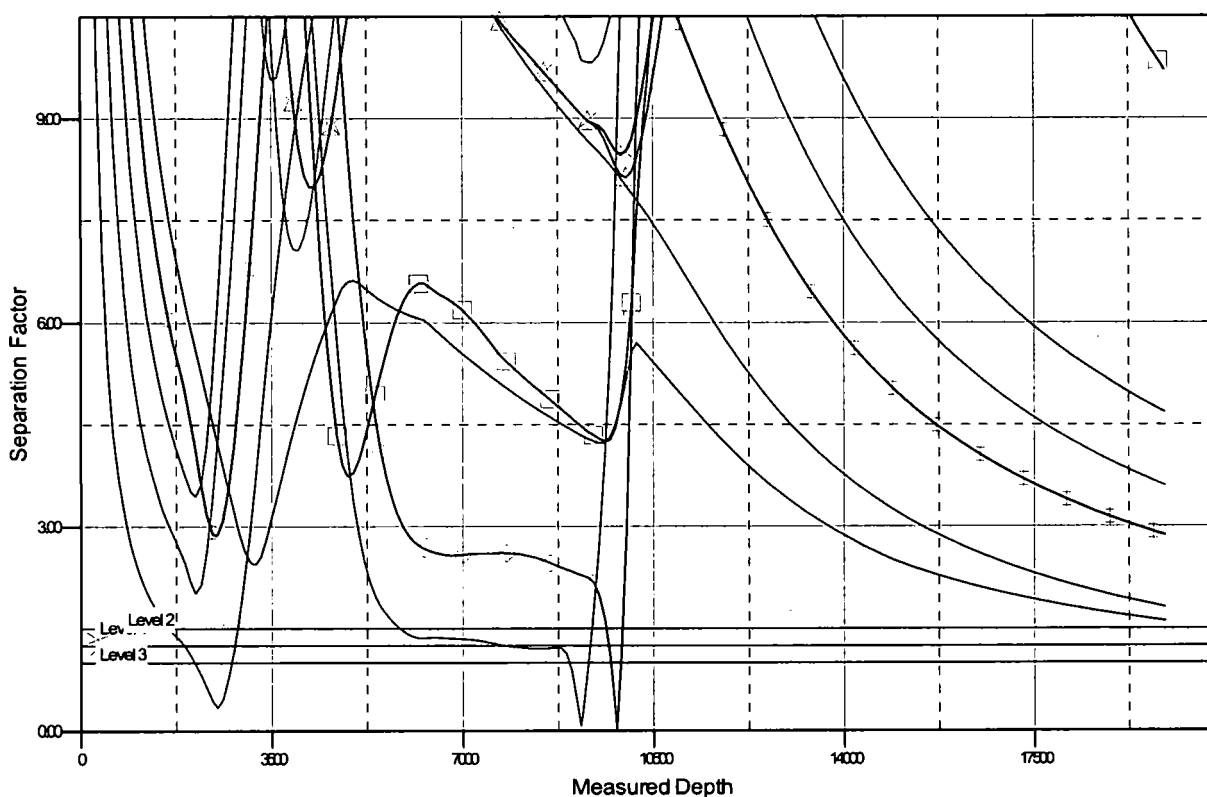
Central Meridian is 104° 19' 60.00000 W

Coordinates are relative to: 6H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.06°

Separation Factor Plot



LEGEND

1, Plan 1 12-21-17 V0	✱ 14HD, ST01 / Job #61221, Surveys (Patterson 815) V0	✱ 6HC, OH / Job #61219, Surveys (Patterson 815) V0
2H / Job #61218, Surveys (Patterson 815) V0	✱ 14HD, OH / Job #61221, Surveys (Patterson 815) V0	✱ 3H, OH, Plan 1 12-21-17 V0
OH / Job #61217, Surveys (Patterson 815) V0	✱ 2H, OH, Plan 1 12-21-17 V0	✱ 21HA, OH / Job #61216, Surveys (Patterson 815) V0
OH / Job #61220, Surveys (Patterson 815) V0	✱ 4H, OH, Plan 1 12-21-17 V0	
1, Plan 1 12-21-17 V0	✱ #4H, WB1, Plan #1 05-14-14 V0	

CC = Min centre to center distance or convergent point, SF = min separation factor, ES = min ellipse separation

12/21/2017 9:49:32AM

Page 56

COMPASS 5000.1 Build 74

Approval Date: 07/06/2018



Project: Eddy County, NM (NAD27 NME)
Site: HH SO 17 20 FED 001
Well: 6H
Wellbore: OH
Design: Plan 1 12-21-17
Rig:



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: -0.06°
Magnetic North: 7.22°
Magnetic Field
Strength: 47957.2nT
Dip Angle: 59.73°
Date: 2/20/2018
Model: HDGM

WELL DETAILS

Ground Level:	3258.00	Latitude	32° 3' 0.75647 N	Longitude	104° 12' 51.73088 W
+N-S	0.00	+E-W	0.00	Northing	382012.00
				Easting	536858.00

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Diag	TFace	VSeal	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP1, Begin 2.00"/100' Build
1800.00	0.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00	0.00	Hold 31.00" Inc at 258.90° Azm
3350.13	31.00	258.90	3275.59	-78.81	-401.59	2.00	258.90	132.45	132.45	Begin 2.00"/100' Drop
4805.93	31.00	258.90	4523.41	-223.19	-1137.41	0.00	0.00	375.13	375.13	Begin Vertical Hold
6356.06	0.00	0.00	5999.00	-302.00	-1539.00	2.00	180.00	507.58	507.58	KOP2, Begin 10.00"/100' Build
8307.06	0.00	0.00	8950.00	-302.00	-1539.00	0.00	0.00	507.58	507.58	LP, Hold 91.17" Inc at 179.16° Azm
10218.75	91.17	179.16	9522.84	-886.59	-1530.39	10.00	179.16	1085.62	1085.62	Begin 2.00"/100' Drop & Turn
14865.63	91.17	179.16	9428.00	-5532.00	-1462.00	0.00	0.00	5679.00	5679.00	Hold 90.37" Inc at 179.82° Azm
14917.63	90.37	179.82	9427.30	-5583.98	-1461.54	2.00	140.22	5730.45	5730.45	TD at 19915.77
19915.77	90.37	179.82	9395.00	-10582.00	-1446.00	0.00	0.00	10680.34	10680.34	BHL - HH SO 17 20 FED 001 6H

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

Local Origin: Well 6H, Grid North

Latitude: 32° 3' 0.75647 N
Longitude: 104° 12' 51.73088 W

Grid East: 536858.00
Grid North: 382012.00
Scale Factor: 1.000

Geomagnetic Model: HDGM
Sample Date: 20-Feb-18
Magnetic Declination: 7.28°
Dip Angle from Horizontal: 59.73°
Magnetic Field Strength: 47957

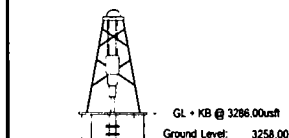
To convert a Magnetic Direction to a Grid Direction, Add 7.22°
To convert a Magnetic Direction to a True Direction, Add 7.28° East
To convert a True Direction to a Grid Direction, Subtract 0.06°

DESIGN TARGET DETAILS

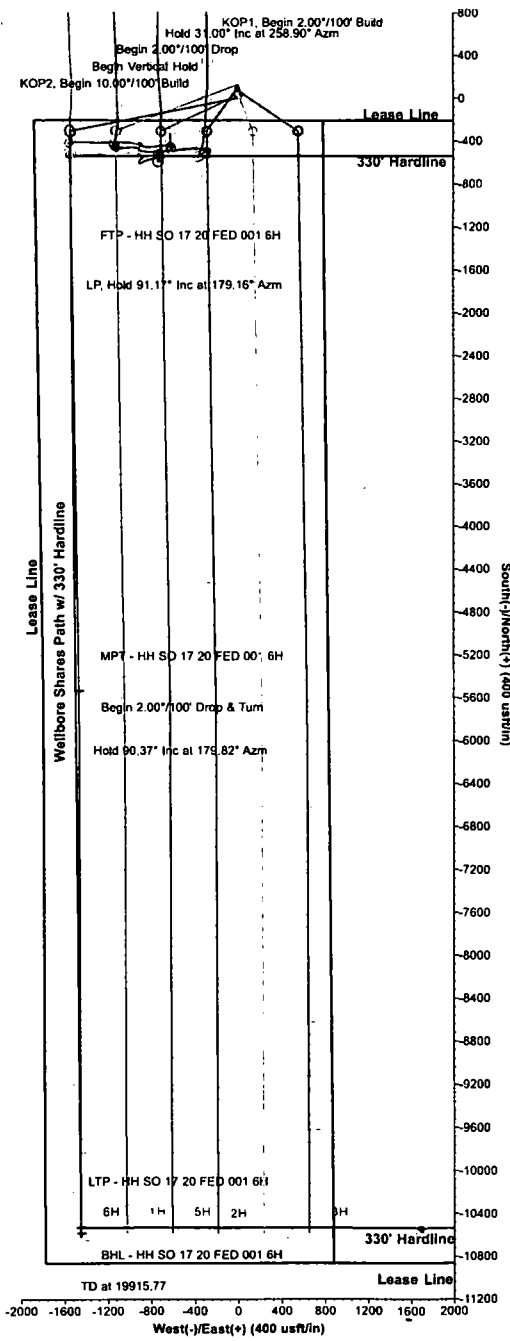
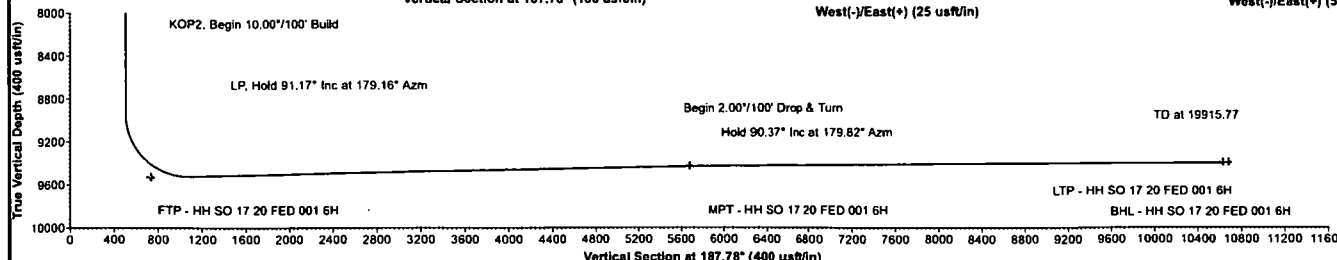
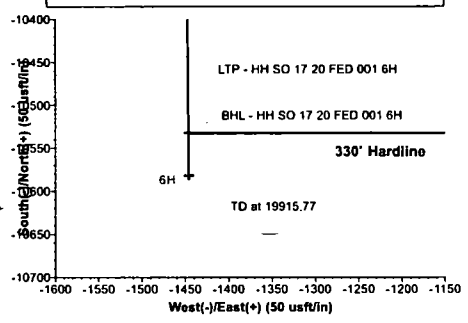
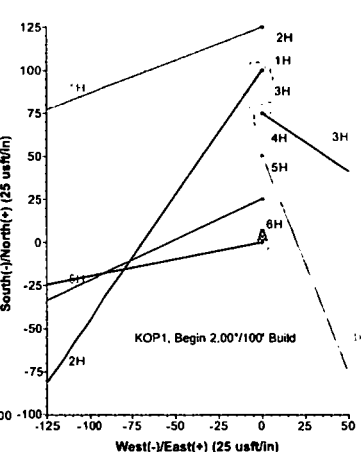
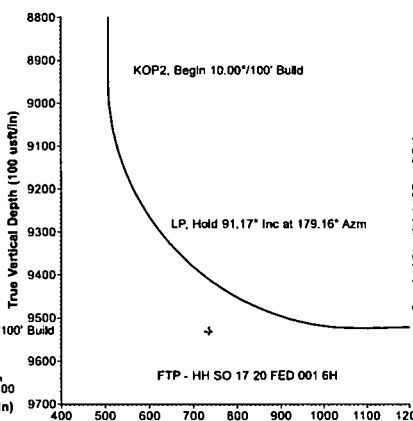
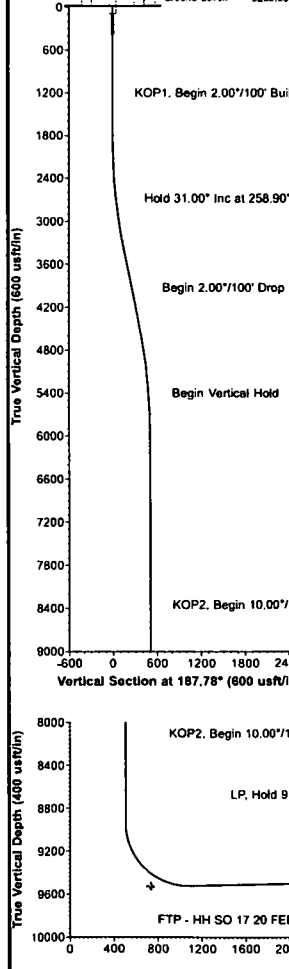
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
BHL - HH SO 17 20 FED 001 6H	9395.00	-10582.00	-1446.00	371430.00	535412.00	32° 1' 16.04548 N	104° 13' 8.65260 W
LTP - HH SO 17 20 FED 001 6H	9395.32	-10532.00	-1446.00	371480.00	535412.00	32° 1' 16.54029 N	104° 13' 8.65199 W
MPT - HH SO 17 20 FED 001 6H	9428.00	-5532.00	-1462.00	376480.00	535396.00	32° 2' 6.02383 N	104° 13' 8.78644 W
FTP - HH SO 17 20 FED 001 6H	9530.00	-532.00	-1535.00	381480.00	535323.00	32° 2' 55.50785 N	104° 13' 9.57319 W

LEGEND

- 1H, OH, Plan 1 12-21-17 V0
- 5HC, OH / Job #61218, Surveys (Patterson 815) V0
- 22HA, OH / Job #61217, Surveys (Patterson 815) V0
- 13HD, OH / Job #61220, Surveys (Patterson 815) V0
- 5H, OH, Plan 1 12-21-17 V0
- 14HD, ST01 / Job #61221, Surveys (Patterson 815) V0
- 14HD, OH / Job #61221, Surveys (Patterson 815) V0
- 2H, OH, Plan 1 12-21-17 V0
- 4H, OH, Plan 1 12-21-17 V0
- #4H, WB1, Plan #1 05-14-14 V0
- 6HC, OH / Job #61219, Surveys (Patterson 815) V0
- 3H, OH, Plan 1 12-21-17 V0
- 21HA, OH / Job #61216, Surveys (Patterson 815) V0
- Plan 1 12-21-17



GL + KB @ 3286.00usf
Ground Level: 3258.00





Chevron

Eddy County, NM (NAD27 NME)

HH SO 17 20 FED 001

6H

OH

Plan: Plan 1 12-21-17

Standard Planning Report

21 December, 2017



Approval Date: 07/06/2018



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 17 20 FED 001
Well: 6H
Wellbore: OH
Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	HH SO 17 20 FED 001			
Site Position:		Northing:	382,137.00 usft	Latitude: 32° 3' 1.99355 N
From: Map		Easting:	536,858.00 usft	Longitude: 104° 12' 51.72926 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.06 °

Well	6H			
Well Position	+N/-S	-125.00 usft	Northing:	382,012.00 usft
	+E/-W	0.00 usft	Easting:	536,858.00 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	3,258.00 usft

Wellbore	OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)
	HDGM	2/20/2018	7.28	59.73
				Field Strength (nT) 47,957

Design	Plan 1 12-21-17			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	187.78

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
3,350.13	31.00	258.90	3,275.59	-78.81	-401.59	2.00	2.00	0.00	258.90	
4,805.93	31.00	258.90	4,523.41	-223.19	-1,137.41	0.00	0.00	0.00	0.00	
6,356.06	0.00	0.01	5,999.00	-302.00	-1,539.00	2.00	-2.00	0.00	180.00	
9,307.06	0.00	0.01	8,950.00	-302.00	-1,539.00	0.00	0.00	0.00	0.01	
10,218.75	91.17	179.16	9,522.84	-886.59	-1,530.39	10.00	10.00	19.65	179.16	
14,865.63	91.17	179.16	9,428.00	-5,532.00	-1,462.00	0.00	0.00	0.00	0.00	MPT - HH SO 17 21
14,917.63	90.37	179.82	9,427.30	-5,583.99	-1,461.54	2.00	-1.54	1.28	140.22	
19,915.77	90.37	179.82	9,395.00	-10,582.00	-1,446.00	0.00	0.00	0.00	0.00	BHL - HH SO 17 20



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
 Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Site: HH SO 17 20 FED 001
 Well: 6H
 Wellbore: OH
 Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	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
KOP1, Begin 2.00°/100' Build									
1,900.00	2.00	258.90	1,899.98	-0.34	-1.71	0.56	2.00	2.00	0.00
2,000.00	4.00	258.90	1,999.84	-1.34	-6.85	2.26	2.00	2.00	0.00
2,100.00	6.00	258.90	2,099.45	-3.02	-15.40	5.08	2.00	2.00	0.00
2,200.00	8.00	258.90	2,198.70	-5.37	-27.36	9.02	2.00	2.00	0.00
2,300.00	10.00	258.90	2,297.47	-8.38	-42.71	14.09	2.00	2.00	0.00
2,400.00	12.00	258.90	2,395.62	-12.05	-61.43	20.26	2.00	2.00	0.00
2,500.00	14.00	258.90	2,493.06	-16.39	-83.50	27.54	2.00	2.00	0.00
2,600.00	16.00	258.90	2,589.64	-21.37	-108.90	35.92	2.00	2.00	0.00
2,700.00	18.00	258.90	2,685.27	-27.00	-137.59	45.38	2.00	2.00	0.00
2,800.00	20.00	258.90	2,779.82	-33.27	-169.53	55.91	2.00	2.00	0.00
2,900.00	22.00	258.90	2,873.17	-40.17	-204.70	67.51	2.00	2.00	0.00
3,000.00	24.00	258.90	2,965.21	-47.69	-243.04	80.16	2.00	2.00	0.00
3,100.00	26.00	258.90	3,055.84	-55.83	-284.51	93.83	2.00	2.00	0.00
3,200.00	28.00	258.90	3,144.94	-64.57	-329.05	108.53	2.00	2.00	0.00
3,300.00	30.00	258.90	3,232.39	-73.91	-376.63	124.22	2.00	2.00	0.00
3,350.13	31.00	258.90	3,275.59	-78.81	-401.59	132.45	2.00	2.00	0.00
Hold 31.00° Inc at 258.90° Azm									
3,400.00	31.00	258.90	3,318.33	-83.75	-426.80	140.76	0.00	0.00	0.00
3,500.00	31.00	258.90	3,404.05	-93.67	-477.34	157.43	0.00	0.00	0.00
3,600.00	31.00	258.90	3,489.76	-103.59	-527.89	174.10	0.00	0.00	0.00
3,700.00	31.00	258.90	3,575.48	-113.51	-578.43	190.77	0.00	0.00	0.00
3,800.00	31.00	258.90	3,661.19	-123.42	-628.97	207.44	0.00	0.00	0.00
3,900.00	31.00	258.90	3,746.90	-133.34	-679.52	224.11	0.00	0.00	0.00
4,000.00	31.00	258.90	3,832.62	-143.26	-730.06	240.78	0.00	0.00	0.00
4,100.00	31.00	258.90	3,918.33	-153.18	-780.61	257.45	0.00	0.00	0.00
4,200.00	31.00	258.90	4,004.05	-163.10	-831.15	274.12	0.00	0.00	0.00
4,300.00	31.00	258.90	4,089.76	-173.02	-881.69	290.79	0.00	0.00	0.00
4,400.00	31.00	258.90	4,175.48	-182.93	-932.24	307.46	0.00	0.00	0.00
4,500.00	31.00	258.90	4,261.19	-192.85	-982.78	324.13	0.00	0.00	0.00
4,600.00	31.00	258.90	4,346.91	-202.77	-1,033.32	340.80	0.00	0.00	0.00
4,700.00	31.00	258.90	4,432.62	-212.69	-1,083.87	357.47	0.00	0.00	0.00
4,800.00	31.00	258.90	4,518.33	-222.61	-1,134.41	374.14	0.00	0.00	0.00
4,805.93	31.00	258.90	4,523.41	-223.19	-1,137.41	375.13	0.00	0.00	0.00
Begin 2.00°/100' Drop									
4,900.00	29.12	258.90	4,604.83	-232.27	-1,183.65	390.38	2.00	-2.00	0.00
5,000.00	27.12	258.90	4,693.02	-241.34	-1,229.90	405.64	2.00	-2.00	0.00
5,100.00	25.12	258.90	4,782.80	-249.82	-1,273.10	419.88	2.00	-2.00	0.00
5,200.00	23.12	258.90	4,874.07	-257.69	-1,313.20	433.11	2.00	-2.00	0.00
5,300.00	21.12	258.90	4,966.70	-264.94	-1,350.15	445.30	2.00	-2.00	0.00
5,400.00	19.12	258.90	5,060.59	-271.57	-1,383.90	456.43	2.00	-2.00	0.00
5,500.00	17.12	258.90	5,155.63	-277.55	-1,414.42	466.50	2.00	-2.00	0.00
5,600.00	15.12	258.90	5,251.69	-282.90	-1,441.67	475.48	2.00	-2.00	0.00
5,700.00	13.12	258.90	5,348.66	-287.60	-1,465.61	483.38	2.00	-2.00	0.00
5,800.00	11.12	258.90	5,446.43	-291.64	-1,486.21	490.17	2.00	-2.00	0.00
5,900.00	9.12	258.90	5,544.87	-295.02	-1,503.45	495.86	2.00	-2.00	0.00
6,000.00	7.12	258.90	5,643.86	-297.74	-1,517.32	500.43	2.00	-2.00	0.00
6,100.00	5.12	258.90	5,743.29	-299.80	-1,527.78	503.88	2.00	-2.00	0.00
6,200.00	3.12	258.90	5,843.02	-301.18	-1,534.83	506.21	2.00	-2.00	0.00
6,300.00	1.12	258.90	5,942.95	-301.89	-1,538.46	507.41	2.00	-2.00	0.00
6,356.06	0.00	0.01	5,999.00	-302.00	-1,539.00	507.58	2.00	-2.00	0.00
Begin Vertical Hold									



Phoenix Technology Services LP Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 17 20 FED 001
Well: 6H
Wellbore: OH
Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,307.06	0.00	0.00	8,950.00	-302.00	-1,539.00	507.58	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
9,400.00	9.29	179.16	9,042.54	-309.52	-1,538.89	515.02	10.00	10.00	0.00
9,500.00	19.29	179.16	9,139.32	-334.18	-1,538.53	539.40	10.00	10.00	0.00
9,600.00	29.29	179.16	9,230.35	-375.26	-1,537.92	580.03	10.00	10.00	0.00
9,700.00	39.29	179.16	9,312.86	-431.53	-1,537.09	635.66	10.00	10.00	0.00
9,800.00	49.29	179.16	9,384.34	-501.27	-1,536.07	704.62	10.00	10.00	0.00
9,900.00	59.29	179.16	9,442.63	-582.36	-1,534.87	784.80	10.00	10.00	0.00
10,000.00	69.29	179.16	9,485.95	-672.34	-1,533.55	873.77	10.00	10.00	0.00
10,100.00	79.29	179.16	9,512.99	-768.47	-1,532.13	968.83	10.00	10.00	0.00
10,200.00	89.29	179.16	9,522.91	-867.84	-1,530.67	1,067.09	10.00	10.00	0.00
10,218.75	91.17	179.16	9,522.84	-886.59	-1,530.39	1,085.62	10.00	10.00	0.00
LP, Hold 91.17° Inc at 179.16° Azm									
10,300.00	91.17	179.16	9,521.18	-967.81	-1,529.20	1,165.94	0.00	0.00	0.00
10,400.00	91.17	179.16	9,519.14	-1,067.78	-1,527.73	1,264.79	0.00	0.00	0.00
10,500.00	91.17	179.16	9,517.10	-1,167.75	-1,526.25	1,363.64	0.00	0.00	0.00
10,600.00	91.17	179.16	9,515.06	-1,267.72	-1,524.78	1,462.48	0.00	0.00	0.00
10,700.00	91.17	179.16	9,513.02	-1,367.69	-1,523.31	1,561.33	0.00	0.00	0.00
10,800.00	91.17	179.16	9,510.98	-1,467.65	-1,521.84	1,660.18	0.00	0.00	0.00
10,900.00	91.17	179.16	9,508.93	-1,567.62	-1,520.37	1,759.03	0.00	0.00	0.00
11,000.00	91.17	179.16	9,506.89	-1,667.59	-1,518.89	1,857.88	0.00	0.00	0.00
11,100.00	91.17	179.16	9,504.85	-1,767.56	-1,517.42	1,956.73	0.00	0.00	0.00
11,200.00	91.17	179.16	9,502.81	-1,867.53	-1,515.95	2,055.58	0.00	0.00	0.00
11,300.00	91.17	179.16	9,500.77	-1,967.50	-1,514.48	2,154.42	0.00	0.00	0.00
11,400.00	91.17	179.16	9,498.73	-2,067.46	-1,513.01	2,253.27	0.00	0.00	0.00
11,500.00	91.17	179.16	9,496.69	-2,167.43	-1,511.54	2,352.12	0.00	0.00	0.00
11,600.00	91.17	179.16	9,494.65	-2,267.40	-1,510.06	2,450.97	0.00	0.00	0.00
11,700.00	91.17	179.16	9,492.61	-2,367.37	-1,508.59	2,549.82	0.00	0.00	0.00
11,800.00	91.17	179.16	9,490.57	-2,467.34	-1,507.12	2,648.67	0.00	0.00	0.00
11,900.00	91.17	179.16	9,488.53	-2,567.31	-1,505.65	2,747.52	0.00	0.00	0.00
12,000.00	91.17	179.16	9,486.49	-2,667.27	-1,504.18	2,846.36	0.00	0.00	0.00
12,100.00	91.17	179.16	9,484.44	-2,767.24	-1,502.70	2,945.21	0.00	0.00	0.00
12,200.00	91.17	179.16	9,482.40	-2,867.21	-1,501.23	3,044.06	0.00	0.00	0.00
12,300.00	91.17	179.16	9,480.36	-2,967.18	-1,499.76	3,142.91	0.00	0.00	0.00
12,400.00	91.17	179.16	9,478.32	-3,067.15	-1,498.29	3,241.76	0.00	0.00	0.00
12,500.00	91.17	179.16	9,476.28	-3,167.12	-1,496.82	3,340.61	0.00	0.00	0.00
12,600.00	91.17	179.16	9,474.24	-3,267.08	-1,495.35	3,439.46	0.00	0.00	0.00
12,700.00	91.17	179.16	9,472.20	-3,367.05	-1,493.87	3,538.30	0.00	0.00	0.00
12,800.00	91.17	179.16	9,470.16	-3,467.02	-1,492.40	3,637.15	0.00	0.00	0.00
12,900.00	91.17	179.16	9,468.12	-3,566.99	-1,490.93	3,736.00	0.00	0.00	0.00
13,000.00	91.17	179.16	9,466.08	-3,666.96	-1,489.46	3,834.85	0.00	0.00	0.00
13,100.00	91.17	179.16	9,464.04	-3,766.93	-1,487.99	3,933.70	0.00	0.00	0.00
13,200.00	91.17	179.16	9,461.99	-3,866.89	-1,486.51	4,032.55	0.00	0.00	0.00
13,300.00	91.17	179.16	9,459.95	-3,966.86	-1,485.04	4,131.40	0.00	0.00	0.00
13,400.00	91.17	179.16	9,457.91	-4,066.83	-1,483.57	4,230.25	0.00	0.00	0.00
13,500.00	91.17	179.16	9,455.87	-4,166.80	-1,482.10	4,329.09	0.00	0.00	0.00
13,600.00	91.17	179.16	9,453.83	-4,266.77	-1,480.63	4,427.94	0.00	0.00	0.00
13,700.00	91.17	179.16	9,451.79	-4,366.74	-1,479.16	4,526.79	0.00	0.00	0.00
13,800.00	91.17	179.16	9,449.75	-4,466.70	-1,477.68	4,625.64	0.00	0.00	0.00
13,900.00	91.17	179.16	9,447.71	-4,566.67	-1,476.21	4,724.49	0.00	0.00	0.00
14,000.00	91.17	179.16	9,445.67	-4,666.64	-1,474.74	4,823.34	0.00	0.00	0.00
14,100.00	91.17	179.16	9,443.63	-4,766.61	-1,473.27	4,922.19	0.00	0.00	0.00
14,200.00	91.17	179.16	9,441.59	-4,866.58	-1,471.80	5,021.03	0.00	0.00	0.00



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
 Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Site: HH SO 17 20 FED 001
 Well: 6H
 Wellbore: OH
 Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
 TVD Reference: GL + KB @ 3286.00usft
 MD Reference: GL + KB @ 3286.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,300.00	91.17	179.16	9,439.54	-4,966.55	-1,470.33	5,119.88	0.00	0.00	0.00
14,400.00	91.17	179.16	9,437.50	-5,066.51	-1,468.85	5,218.73	0.00	0.00	0.00
14,500.00	91.17	179.16	9,435.46	-5,166.48	-1,467.38	5,317.58	0.00	0.00	0.00
14,600.00	91.17	179.16	9,433.42	-5,266.45	-1,465.91	5,416.43	0.00	0.00	0.00
14,700.00	91.17	179.16	9,431.38	-5,366.42	-1,464.44	5,515.28	0.00	0.00	0.00
14,800.00	91.17	179.16	9,429.34	-5,466.39	-1,462.97	5,614.13	0.00	0.00	0.00
14,865.63	91.17	179.16	9,428.00	-5,532.00	-1,462.00	5,679.00	0.00	0.00	0.00
Begin 2.00°/100' Drop & Turn									
14,900.00	90.64	179.60	9,427.46	-5,566.36	-1,461.63	5,713.00	2.00	-1.54	1.28
14,917.63	90.37	179.82	9,427.30	-5,583.99	-1,461.54	5,730.45	2.00	-1.54	1.28
Hold 90.37° Inc at 179.82° Azm									
15,000.00	90.37	179.82	9,426.77	-5,666.36	-1,461.28	5,812.03	0.00	0.00	0.00
15,100.00	90.37	179.82	9,426.12	-5,766.36	-1,460.97	5,911.06	0.00	0.00	0.00
15,200.00	90.37	179.82	9,425.48	-5,866.35	-1,460.66	6,010.10	0.00	0.00	0.00
15,300.00	90.37	179.82	9,424.83	-5,966.35	-1,460.35	6,109.13	0.00	0.00	0.00
15,400.00	90.37	179.82	9,424.18	-6,066.35	-1,460.04	6,208.16	0.00	0.00	0.00
15,500.00	90.37	179.82	9,423.54	-6,166.34	-1,459.73	6,307.20	0.00	0.00	0.00
15,600.00	90.37	179.82	9,422.89	-6,266.34	-1,459.42	6,406.23	0.00	0.00	0.00
15,700.00	90.37	179.82	9,422.25	-6,366.34	-1,459.10	6,505.27	0.00	0.00	0.00
15,800.00	90.37	179.82	9,421.60	-6,466.34	-1,458.79	6,604.30	0.00	0.00	0.00
15,900.00	90.37	179.82	9,420.95	-6,566.33	-1,458.48	6,703.34	0.00	0.00	0.00
16,000.00	90.37	179.82	9,420.31	-6,666.33	-1,458.17	6,802.37	0.00	0.00	0.00
16,100.00	90.37	179.82	9,419.66	-6,766.33	-1,457.86	6,901.41	0.00	0.00	0.00
16,200.00	90.37	179.82	9,419.01	-6,866.33	-1,457.55	7,000.44	0.00	0.00	0.00
16,300.00	90.37	179.82	9,418.37	-6,966.32	-1,457.24	7,099.48	0.00	0.00	0.00
16,400.00	90.37	179.82	9,417.72	-7,066.32	-1,456.93	7,198.51	0.00	0.00	0.00
16,500.00	90.37	179.82	9,417.08	-7,166.32	-1,456.62	7,297.55	0.00	0.00	0.00
16,600.00	90.37	179.82	9,416.43	-7,266.32	-1,456.31	7,396.58	0.00	0.00	0.00
16,700.00	90.37	179.82	9,415.78	-7,366.31	-1,456.00	7,495.61	0.00	0.00	0.00
16,800.00	90.37	179.82	9,415.14	-7,466.31	-1,455.69	7,594.65	0.00	0.00	0.00
16,900.00	90.37	179.82	9,414.49	-7,566.31	-1,455.37	7,693.68	0.00	0.00	0.00
17,000.00	90.37	179.82	9,413.84	-7,666.31	-1,455.06	7,792.72	0.00	0.00	0.00
17,100.00	90.37	179.82	9,413.20	-7,766.30	-1,454.75	7,891.75	0.00	0.00	0.00
17,200.00	90.37	179.82	9,412.55	-7,866.30	-1,454.44	7,990.79	0.00	0.00	0.00
17,300.00	90.37	179.82	9,411.91	-7,966.30	-1,454.13	8,089.82	0.00	0.00	0.00
17,400.00	90.37	179.82	9,411.26	-8,066.30	-1,453.82	8,188.86	0.00	0.00	0.00
17,500.00	90.37	179.82	9,410.61	-8,166.29	-1,453.51	8,287.89	0.00	0.00	0.00
17,600.00	90.37	179.82	9,409.97	-8,266.29	-1,453.20	8,386.93	0.00	0.00	0.00
17,700.00	90.37	179.82	9,409.32	-8,366.29	-1,452.89	8,485.96	0.00	0.00	0.00
17,800.00	90.37	179.82	9,408.67	-8,466.29	-1,452.58	8,585.00	0.00	0.00	0.00
17,900.00	90.37	179.82	9,408.03	-8,566.28	-1,452.27	8,684.03	0.00	0.00	0.00
18,000.00	90.37	179.82	9,407.38	-8,666.28	-1,451.96	8,783.06	0.00	0.00	0.00
18,100.00	90.37	179.82	9,406.73	-8,766.28	-1,451.64	8,882.10	0.00	0.00	0.00
18,200.00	90.37	179.82	9,406.09	-8,866.28	-1,451.33	8,981.13	0.00	0.00	0.00
18,300.00	90.37	179.82	9,405.44	-8,966.27	-1,451.02	9,080.17	0.00	0.00	0.00
18,400.00	90.37	179.82	9,404.80	-9,066.27	-1,450.71	9,179.20	0.00	0.00	0.00
18,500.00	90.37	179.82	9,404.15	-9,166.27	-1,450.40	9,278.24	0.00	0.00	0.00
18,600.00	90.37	179.82	9,403.50	-9,266.27	-1,450.09	9,377.27	0.00	0.00	0.00
18,700.00	90.37	179.82	9,402.86	-9,366.26	-1,449.78	9,476.31	0.00	0.00	0.00
18,800.00	90.37	179.82	9,402.21	-9,466.26	-1,449.47	9,575.34	0.00	0.00	0.00
18,900.00	90.37	179.82	9,401.56	-9,566.26	-1,449.16	9,674.38	0.00	0.00	0.00
19,000.00	90.37	179.82	9,400.92	-9,666.25	-1,448.85	9,773.41	0.00	0.00	0.00
19,100.00	90.37	179.82	9,400.27	-9,766.25	-1,448.54	9,872.45	0.00	0.00	0.00
19,200.00	90.37	179.82	9,399.63	-9,866.25	-1,448.22	9,971.48	0.00	0.00	0.00



Phoenix Technology Services LP Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 17 20 FED 001
Well: 6H
Wellbore: OH
Design: Plan 1 12-21-17

Local Co-ordinate Reference: Well 6H
TVD Reference: GL + KB @ 3286.00usft
MD Reference: GL + KB @ 3286.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,300.00	90.37	179.82	9,398.98	-9,966.25	-1,447.91	10,070.51	0.00	0.00	0.00
19,400.00	90.37	179.82	9,398.33	-10,066.24	-1,447.60	10,169.55	0.00	0.00	0.00
19,500.00	90.37	179.82	9,397.69	-10,166.24	-1,447.29	10,268.58	0.00	0.00	0.00
19,600.00	90.37	179.82	9,397.04	-10,266.24	-1,446.98	10,367.62	0.00	0.00	0.00
19,700.00	90.37	179.82	9,396.39	-10,366.24	-1,446.67	10,466.65	0.00	0.00	0.00
19,800.00	90.37	179.82	9,395.75	-10,466.23	-1,446.36	10,565.69	0.00	0.00	0.00
19,900.00	90.37	179.82	9,395.10	-10,566.23	-1,446.05	10,664.72	0.00	0.00	0.00
19,915.77	90.37	179.82	9,395.00	-10,582.00	-1,446.00	10,680.34	0.00	0.00	0.00
TD at 19915.77									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL - HH SO 17 20 F	0.00	0.00	9,395.00	-10,582.00	-1,446.00	371,430.00	535,412.00	32° 1' 16.04546 N	104° 13' 8.66260 W
- plan hits target center									
- Point									
LTP - HH SO 17 20 FI	0.00	0.00	9,395.32	-10,532.00	-1,446.00	371,480.00	535,412.00	32° 1' 16.54029 N	104° 13' 8.66199 W
- plan misses target center by 0.16usft at 19865.77usft MD (9395.32 TVD, -10532.00 N, -1446.16 E)									
- Point									
MPT - HH SO 17 20 F	0.00	0.00	9,428.00	-5,532.00	-1,462.00	376,480.00	535,396.00	32° 2' 6.02383 N	104° 13' 8.78644 W
- plan hits target center									
- Point									
FTP - HH SO 17 20 F	0.00	0.00	9,530.00	-532.00	-1,535.00	381,480.00	535,323.00	32° 2' 55.50785 N	104° 13' 9.57319 W
- plan misses target center by 100.84usft at 9900.00usft MD (9442.63 TVD, -582.36 N, -1534.87 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,800.00	1,800.00	0.00	0.00	KOP1, Begin 2.00°/100' Build
3,350.13	3,275.59	-78.81	-401.59	Hold 31.00° Inc at 258.90° Azm
4,805.93	4,523.41	-223.19	-1,137.41	Begin 2.00°/100' Drop
6,356.06	5,999.00	-302.00	-1,539.00	Begin Vertical Hold
9,307.06	8,950.00	-302.00	-1,539.00	KOP2, Begin 10.00°/100' Build
10,218.75	9,522.84	-886.59	-1,530.39	LP, Hold 91.17° Inc at 179.16° Azm
14,865.63	9,428.00	-5,532.00	-1,462.00	Begin 2.00°/100' Drop & Turn
14,917.63	9,427.30	-5,583.99	-1,461.54	Hold 90.37° Inc at 179.82° Azm
19,915.77	9,395.00	-10,582.00	-1,446.00	TD at 19915.77

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	CHEVRON USA INCORPERATED
LEASE NO.:	NMNM118108
WELL NAME & NO.:	HH SO 17 20 FED 001 6H
SURFACE HOLE FOOTAGE:	205'S & 1872'/W
BOTTOM HOLE FOOTAGE:	280'S & 330'/W
LOCATION:	SECTION 8, T26S, R27E , NMPM
COUNTY:	EDDY

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Cave/Karst
 - Watershed
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for

acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave and Karst Conditions of Approval for APDs

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production:

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Watershed

- The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

VI. CONSTRUCTION**A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the

event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

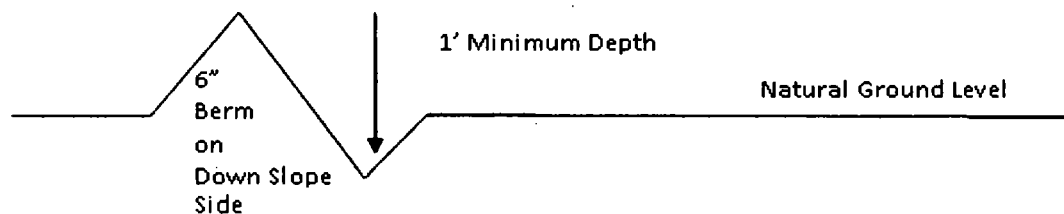
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and inslaping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{40\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

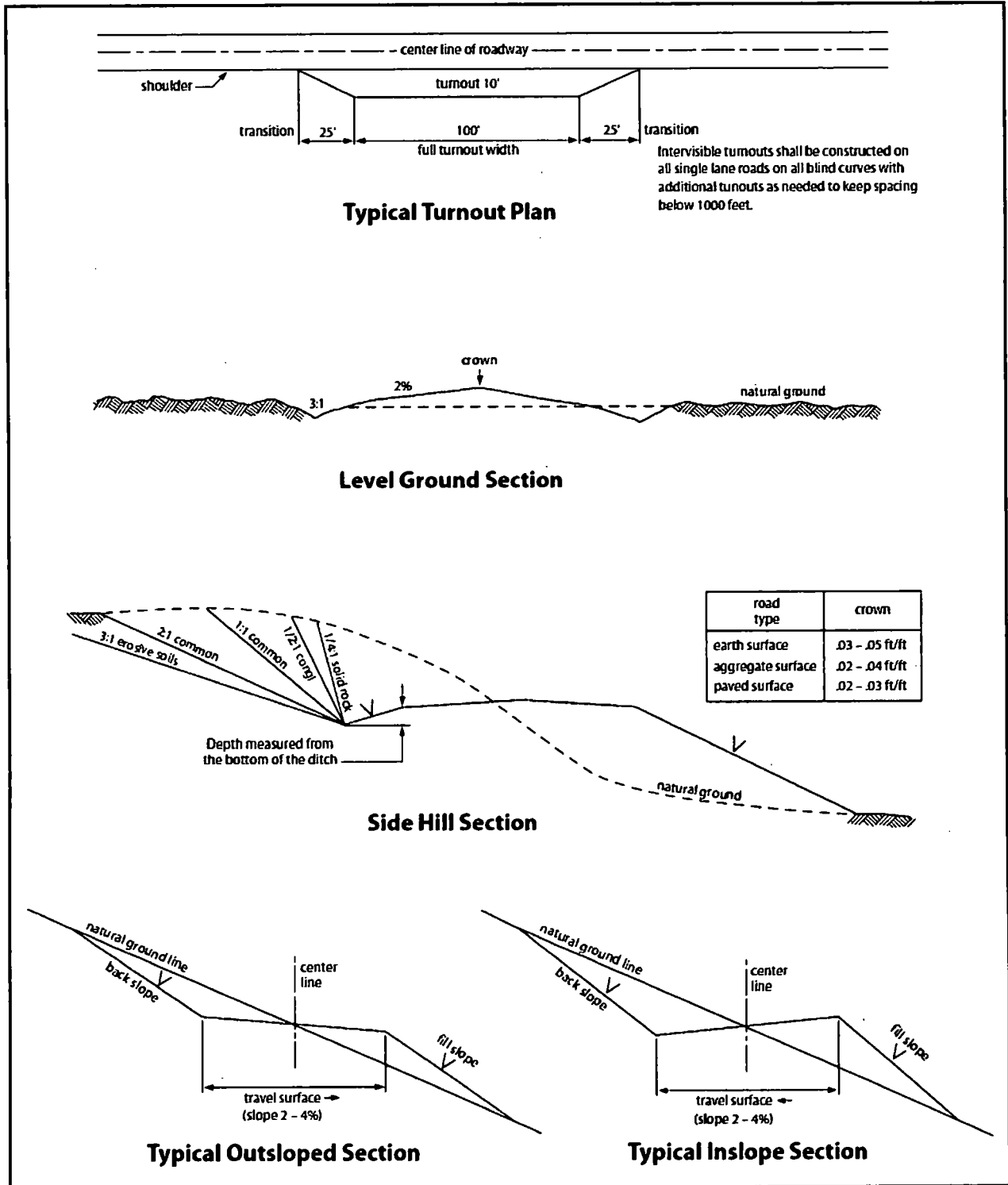


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production

equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (*see* 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms

are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- b. Activities of other parties including, but not limited to:
 - (1) Land clearing
 - (2) Earth-disturbing and earth-moving work
 - (3) Blasting
 - (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized

right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than

routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

STANDARD STIPULATIONS FOR BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the

Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.)*)

intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

☒ seed mixture 1	☐ seed mixture 3
☐ seed mixture 2	☐ seed mixture 4
☐ seed mixture 2/LPC	☐ Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1 for Loamy Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed



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

Operator Certification Data Report

07/09/2018

Operator Certification

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

NAME: Dorian K Fuentes

Signed on: 08/17/2017

Title: Permitting Specialist

Street Address: 6301 Deauville Blvd

City: Midland

State: TX

Zip: 79706

Phone: (432)687-7631

Email address: djvo@chevron.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



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

Application Data Report

07/09/2013

APD ID: 10400019870

Submission Date: 08/17/2017

Operator Name: CHEVRON USA INCORPORATED

Highlighted data
reflects the most
recent changes

Well Name: HH SO 17 20 FED 001

Well Number: 6H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400019870

Tie to previous NOS?

Submission Date: 08/17/2017

BLM Office: CARLSBAD

User: Dorian K Fuentes

Title: Permitting Specialist

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM118108

Lease Acres: 1120

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO

APD Operator: CHEVRON USA INCORPORATED

Operator letter of designation:

Operator Info

Operator Organization Name: CHEVRON USA INCORPORATED

Operator Address: 6301 Deauville Blvd.

Zip: 79706

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)687-7866

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? EXISTING

Master Development Plan name: HAYHURST DEVELOPMENT AREA

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: PURPLE SAGE

Pool Name: WOLFCAMP,
(GAS)

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

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

Describe other minerals:

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

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: HH SO Number: 1H 2H 3H 4H 5H 6H
17 20 FED 001

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 11.5 Miles

Distance to nearest well: 4300 FT

Distance to lease line: 330 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: HH_SO_17_20_FED_001_6H_C_102_08-17-2017.pdf

Well work start Date: 12/28/2017

Duration: 130 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	205	FSL	187 2	FWL	26S	27E	8	Aliquot SESW 2	32.05033 2	- 104.2148 63	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 118108	325 8	0	0
KOP Leg #1	205	FSL	187 2	FWL	26S	27E	8	Aliquot SESW 2	32.05033 2	- 104.2148 63	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 118108	325 8	0	0
PPP Leg #1	330	FNL	330	FWL	26S	27E	17	Aliquot NWN W 4	32.04887 4	- 104.2198 2	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 100549	574 2	120 00	900 0



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

Drilling Plan Data Report

07/09/2018

APD ID: 10400019870

Submission Date: 08/17/2017

Highlighted data
reflects the most
recent changes

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	CASTILE	3626	505	505	LIMESTONE, ANHYDRITE, GYPSUM	NONE	No
2	BELL CANYON	1316	2310	2310	SANDSTONE	NONE	No
3	LAMAR LS	1231	2395	2395	LIMESTONE	NONE	No
4	CHERRY CANYON	418	3208	3208	SANDSTONE	NONE	No
5	BRUSHY CANYON	-824	4450	4450	SANDSTONE	NONE	No
6	BONE SPRING	-2673	6299	6299	LIMESTONE	NONE	No
7	BONE SPRING 1ST	-3262	6888	6888	SANDSTONE	NONE	No
8	BONE SPRING 1ST	-3288	6914	6914	SHALE, SANDSTONE	NONE	No
9	2ND BONE SPRING CARB	-3995	7621	7621	SANDSTONE	NONE	No
10	3RD BONE SPRING CARB	-4991	8617	8617	LIMESTONE	NONE	No
11	WOLFCAMP	-6083	9709	9709	MUDSTONE	NATURAL GAS, OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 10029

Equipment: Will have a minimum of 5000 PSI rig stack for drill out below surface casing. Stack will be treated as specified in the attached requirements.

Requesting Variance? YES

Variance request: Chevron requests a variance to use a CoFlex hose with a metal protective covering that will be utilized between the BOP and Choke manifold and Chevron would also like to request another variance to use a FMC technologies conventional well head which will be run through the rig floor on surface casing. BOPE will be nipped up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days.

Testing Procedure: Test BOP from 250 PSI to 5000 psi in Ram and 250 PSI to 3500 PSI in Annular

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Choke Diagram Attachment:

HH_SO_17_20_FED_001_6H_Choke_Diagram_08-17-2017.pdf

BOP Diagram Attachment:

HH_SO_17_20_FED_001_6H_BOP_Diagram_08-17-2017.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	450	0	450	-5742	-6192	450	K-55	54.5	STC	5.11	1.82	DRY	2.31	DRY	3.97
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	8700	0	8700	-5742	-14757	8700	L-80	43.5	OTHER - TXP	1.32	1.45	DRY	1.84	DRY	1.78
3	PRODUCTION	8.5	5.5	NEW	API	N	0	20044	0	20044	-5742	-26008	20044	P-110	20	OTHER - TXP	1.5	1.26	DRY	1.84	DRY	2.43

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HH_SO_17_20_FED_001_6H_9pt_plan_08-17-2017.pdf

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

HH_SO_17_20_FED_001_6H_9.625_TXP_08-17-2017.pdf

Casing Design Assumptions and Worksheet(s):

HH_SO_17_20_FED_001_6H_9.625_TXP_08-17-2017.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HH_SO_17_20_FED_001_6H_P110_TXP_08-17-2017.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	450	356	1.33	14.8	6.37	50	C	CLASS C

INTERMEDIATE	Lead	2100	0	1100	213	2.43	11.9	14.21	50	50:50 POZ: C	CLASS C + ANTIFOAM, EXTENDER, SALT, RETARDER
INTERMEDIATE	Tail		1100	2100	235	1.33	14.8	6.37	0	CLASS C	CLASS C + ANTIFOAM, RETARDER,

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											VISCOSIFIER
INTERMEDIATE	Lead	2100	2100	8015	838	2.43	11.9	13.76	10	H	50:50 POZ: CLASS H + EXTENDER, ANTIFOAM, RETARDER, SALT, VISCOSIFIER
INTERMEDIATE	Tail		8015	8700	285	1.21	15.6	5.54	50	H	CLASS H + RETARDER, EXTENDER, DISPERSANT
PRODUCTION	Lead		7015	8015	237	1.21	14.5	5.54	10	H	50:50 POZ: CLASS H + EXTENDER, ANTIFOAM, DISPERSANT, RETARDER
PRODUCTION	Tail		8015	2004 4	2547	1.2	15.6	5.3	10	H	CL H + VISCOSIFIER, ANTIFOAM, DISPERSANT, FLUID LOSS, RETARDER, EXPANDING AGENT

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: A closed system will be utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill. All fluids and cuttings will be disposed of in accordance with NMOCD regulations.

Describe the mud monitoring system utilized: A mud test shall be performed every 24 hours after muddling 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 PVT, stroke counter, flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume in compliance with Onshore Order #2.

Circulating Medium Table

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	450	SPUD MUD	9	9.5							
450	8700	OIL-BASED MUD	9	9.5							
8700	20044	OIL-BASED MUD	10	13							The mud weights will range depending on the targeted formation. The Wolfcamp A pore pressure will not exceed 9.5 ppg, but due to wellbore stability, the mud program will exceed the pore pressure. To control pressure we are using 13.5 and may end up using heavier mud weight to 14.0.

Section 6 - Test, Logging, Coring

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

Drill stem tests are not planned

The logging program will be as follows:

Type: Mudlogs Logs: 2 man mudlog Interval: Csg to TD Timing: Drillout of Int. Csg Vendor: TBD

Type: LWD Logs: MWD gamma Interval: Int. and Prod. Hole Timing: while drilling Vendor: TBD

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

GR,MWD,MUDLOG

Coring operation description for the well:

Conventional whole core samples are not planned; direction survey will be run - will send log(s) when run.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6563

Anticipated Surface Pressure: 4427.02

Anticipated Bottom Hole Temperature(F): 150

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

HH_SO_17_20_FED_001_6H_H2S_08-17-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

HH_SO_17_20_FED_001_6H_Directional_Plan_08-17-2017.pdf

HH_SO_17_20_FED_001_6H_Rig_Pad_Layout_08-17-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

CHOKE MANIFOLD SCHEMATIC

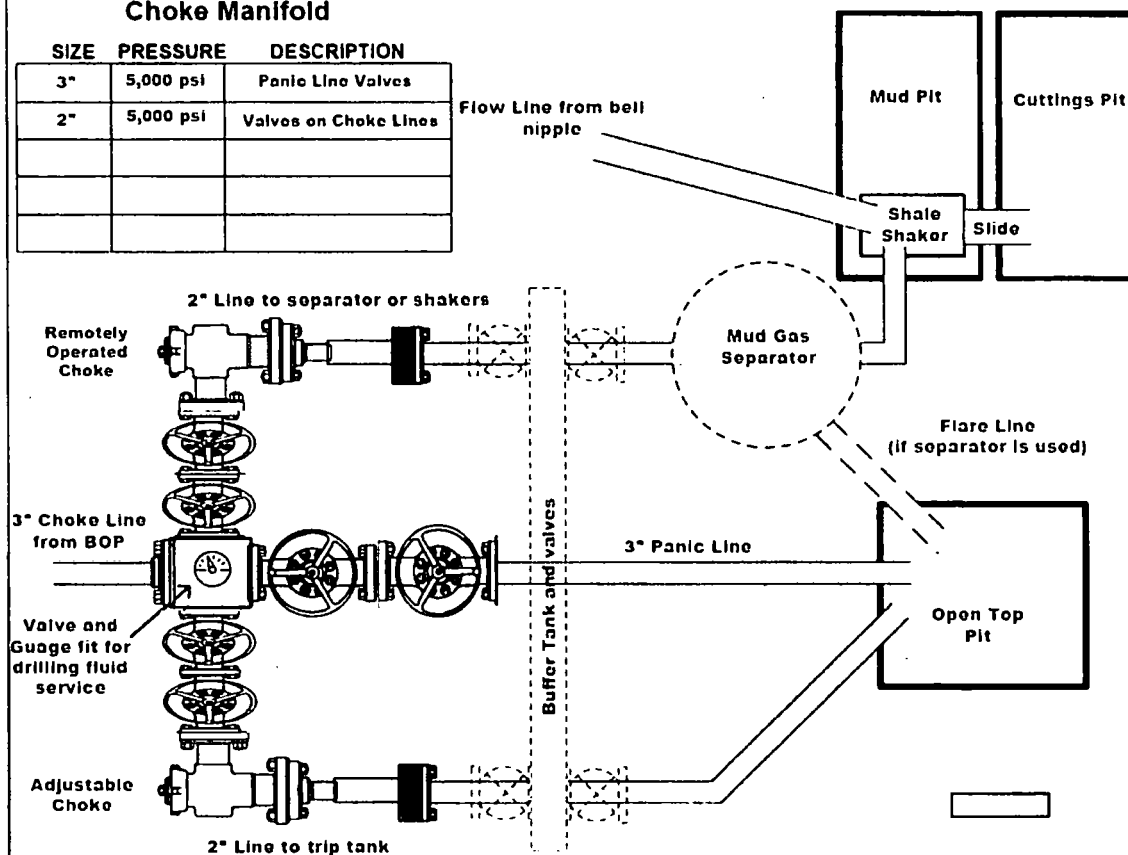
Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

Minimum System Pressure Rating : 5,000 psi

Choke Manifold

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



Installation Checklist

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

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

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

Wellname: _____

Representative: _____

Date: _____

BLOWOUT PREVENTOR SCHEMATIC

Minimum Requirements

OPERATION : Intermediate and Production Hole Sections

Minimum System Pressure Rating : 5,000 psi

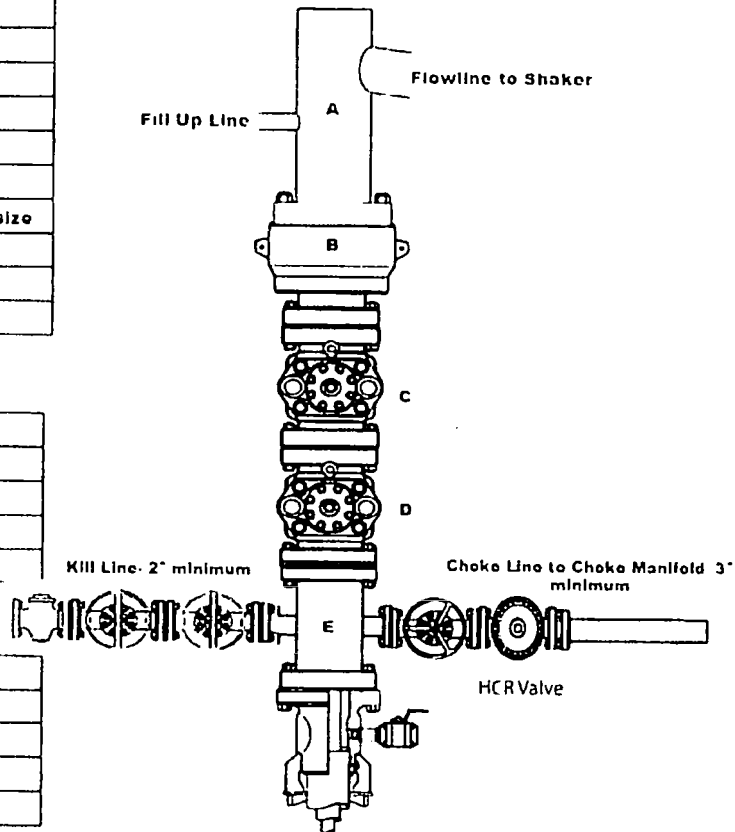
SIZE	PRESSURE	DESCRIPTION
A	N/A	Bell Nipple
B	13 5/8" 5,000 psi	Annular
C	13 5/8" 5,000 psi	Pipe Ram
D	13 5/8" 5,000 psi	Blind Ram
E	13 5/8" 5,000 psi	Mud Cross
F		
DSA	As required for each hole size	
C-Sec		
B-Sec	13-5/8" 5K x 11" 5K	
A-Sec	13-3/8" SOW x 13-5/8" 5K	

Kill Line

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

Choke Line

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



Installation Checklist

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

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

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

Wellname: _____

Representative: _____

Date: _____

BOPE Testing

Minimum Requirements

Closing Unit and Accumulator Checklist

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

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

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

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

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

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

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

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

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

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

- ☐ Record accumulator tests in drilling reports and IADC sheet

BOPE Test Checklist

The following item must be checked off prior to beginning test

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

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

- ☐ Test will be performed using clear water.

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

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

- ☐ Test plug will be used

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

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

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

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

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

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

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

Wellname: _____

Representative: _____

Date: _____

For the latest performance data, always visit our website: www.tenaris.com

February 08 2017



Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 9.625 in.
Wall: 0.435 in.
Weight: 43.50 lbs/ft
Grade: L80.1
Min. Wall Thickness: 87.5 %

PIPE BODY DATA			
GEOMETRY			
Nominal OD	9.625 in.	Nominal Weight	43.50 lbs/ft
Nominal ID	8.755 in.	Wall Thickness	0.435 in.
Plain End Weight	42.73 lbs/ft	Standard Drift Diameter	8.599 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	1005 x 1000 lbs	Internal Yield	6330 psi
Collapse	3810 psi	SMYS	80000 psi
TENARISXP® BTC CONNECTION DATA			
GEOMETRY			
Connection OD	10.625 in.	Coupling Length	10.825 in.
Critical Section Area	12.559 sq. in.	Threads per in.	5.00
		Connection ID	8.743 in.
		Make-Up Loss	4.891 in.
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	1005 x 1000 lbs
Structural Compression Efficiency	100 %	Structural Compression Strength	1005 x 1000 lbs
External Pressure Capacity	3810 psi	Internal Pressure Capacity ⁽¹⁾	6330 psi
		Structural Bending ⁽²⁾	38 °/100 ft
ESTIMATED MAKE-UP TORQUES ⁽²⁾			
Minimum	20240 ft-lbs	Optimum	22490 ft-lbs
		Maximum	24740 ft-lbs
OPERATIONAL LIMIT TORQUES			
Operating Torque	ASK	Yield Torque	45900 ft-lbs

BLANKING DIMENSIONS

Blanking Dimensions

- (1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.
- (2) Structural rating, pure bending to yield (i.e no other loads applied)
- (3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.
- For additional information, please contact us at contact-tenarishydril@tenaris.com

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TYP	KBTVD	MD
Centre		302	
Lamar		2395	
Red		2310	
Cherry		3208	
Bonita		4450	
Bone Springs/Avalon		6709	
First Bone Spring Sand		8888	
First Bone Spring Shale		8914	
Second Bone Spring Sand		7821	
Harvey Sand		8123	
Third Bone Spring Sand		8617	
Wolfcamp A		9342	
Wolfcamp C		9709	
Lamar TYD Wolfcamp C		9200/93	9208/9342

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
Water	Descend Expected Base of Fresh Water	450
	Centre	302
	Cherry Canyon	3208
	Bonita Canyon	4450
	Bone Springs Limestone	6709
	First Bone Spring Shale	8914
	Second Bone Spring Sand	7821
Oil/Gas	Harvey Sand	8123
	Wolfcamp A	9342
	Wolfcamp C	9709

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

3. BOP EQUIPMENT

We have a minimum of a 5000 psi g stack (see proposed schematic) for drill out below surface casing. Stack will be tested as specified in the attached testing requirements. Chevron requests a variance to use a CoFlex hose with a metal protective covering that will be utilized between the BOP and Choke man tool. Please refer to the testing and specification documents.

Chevron requests a variance to use a FMC Technologies UH-2 Multibowl weathard which will be run through the rig floor on surface casing. BOP will be rigged 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 weathard schematic. An installation manual has been placed on file with the BJM office and remains unchanged from previous submittal.

4. CASING PROGRAM

Purpose	From	To	Hole Size	Csg Bore	Weight	Grade	Thread	Condition
Surface	0'	450'	17-1/2"	13-3/8"	54.0 lb	K-55	STC	New
Intermediate	0'	8700'	12-1/4"	8-5/8"	53.5 lb	L-80	120°	New
Production	0'	8700'	8-1/2"	6-1/2"	50.0 lb	P-110	120°	New

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

Surface Casing: 450'
Intermediate Casing: 8015'

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.82	5.11	3.97	2.31
Intermediate	1.45	1.32	1.78	1.84
Production	1.28	1.5	2.43	1.55

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

Burst Design	Surf	Int	Prod
Pressure Test: Surface, Int, Prod Csg	X	X	X
P external Water			
P internal: Test csg - part section has not mud in csg	X		
Displace to Gas- Surf Csg			
P external Water			
P internal: Dry Gas from Next Csg Point		X	
Free at Show, Gas to Surf: Int Csg			
P external Water			
P internal: Dry Gas: 15,000 psi Free Gas Point			X
Simulation (Free Pressure- Prod Csg)			
P external Water			
P internal: Max int pressure of heaviest injected fluid			X
Tubing loss: Prod Csg (packer at KOP)			X
P external Water			
P internal: Leak surf below surf 8.7 csg packer fluid			
Collapse Design			
Full Evacuation	X	X	X
P external Water gradient in cement, mud above TOC			
P internal: none			
Cementing: Surf, Int, Prod Csg	X	X	X
P external Wet cement			
P internal: water			
Tension Design			
100% B (overhead)	X	X	X

5. CEMENTING PROGRAM

Slurry	Type	Cement Top	Cement Bottom	Weight	Yield	%Excess	Backs	Water
Surface	Test	Class C	0'	450'	(000)	(gal/bbl ft)	Open Hole	initial
Intermediate			0'	450'	14.8	1.42	60%	6.37
Stage 2 Lead	50 50 Poz: Class C + Antifoam, Extender, Salt, Retarder	0'	1,100'	11.8	2.43	60%	2485	14.21
Stage 2 Tail	Class C + Antifoam, Retarder, Viscosifier	1,100'	2,100'	14.8	1.32	60%	3455	6.37
DV TOOL			2,100'					
Stage 1 Lead	50 50 Poz: Class C + Extender, Antifoam, Retarder, Salt, Viscosifier, Class H + Retarder	2,100'	8,015'	11.8	2.43	60%	4870	13.78
Stage 1 Tail	Extender, Dispersant	8,015'	8,700'	15.8	1.21	60%	2420	5.54
Production								
Lead	50 50 Poz: Class H + Extender, Antifoam, Dispersant, Retarder	7,015'	8,015'	14.5	1.21	60%	2899	5.54
Tail	Class H + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent	8,015'	8,600'	15.6	1.2	60%	2859	5.30

6. MUD PROGRAM

From	To	Type	Weight	F. Vls	Filtrate
0'	450'	Sand Mud	8.3 - 8.7	32 - 34	NC - NC
450'	8700'	OBM	8.0 - 8.5	50 - 70	5.0 - 10
8015'	8700'	OBM	10.0 - 13.0	50 - 70	5.0 - 10

7. TESTING, LOGGING AND CORING

TYPE	Logs	Interval	Time	Vendor
Mudlogs	2 main mudlogs	Int Csg to TD	Drillout of Int Csg	TRD
LOG	MWD Gamma	Int. and Prod. Hole	Within Drilling	TRD

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

PLEASE REFERENCE MOP

For the latest performance data, always visit our website: www.tenaris.com

February 08 2017



Connection: TenarisXP® BTC
Casing/Tubing: CAS
Coupling Option: REGULAR

Size: 9.625 in.
Wall: 0.435 in.
Weight: 43.50 lbs/ft
Grade: L80.1
Min. Wall Thickness: 87.5 %

PIPE BODY DATA			
GEOMETRY			
Nominal OD	9.625 in.	Nominal Weight	43.50 lbs/ft
Nominal ID	8.755 in.	Wall Thickness	0.435 in.
Plain End Weight	42.73 lbs/ft	Standard Drift Diameter	8.599 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	1005 x 1000 lbs	Internal Yield	6330 psi
Collapse	3810 psi	SMYS	80000 psi
TENARISXP® BTC CONNECTION DATA			
GEOMETRY			
Connection OD	10.625 in.	Coupling Length	10.825 in.
Critical Section Area	12.559 sq. in.	Threads per in.	5.00
		Connection ID	8.743 in.
		Make-Up Loss	4.891 in.
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	1005 x 1000 lbs
Structural Compression Efficiency	100 %	Structural Compression Strength	1005 x 1000 lbs
External Pressure Capacity	3810 psi	Internal Pressure Capacity ⁽¹⁾	6330 psi
		Structural Bending ⁽²⁾	38 °/100 ft
ESTIMATED MAKE-UP TORQUES ⁽³⁾			
Minimum	20240 ft-lbs	Optimum	22490 ft-lbs
		Maximum	24740 ft-lbs
OPERATIONAL LIMIT TORQUES			
Operating Torque	ASK	Yield Torque	45900 ft-lbs

BLANKING DIMENSIONS

Blanking Dimensions

- (1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.
- (2) Structural rating, pure bending to yield (i.e no other loads applied)
- (3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.
- For additional information, please contact us at contact-tenarishydril@tenaris.com

For the latest performance data, always visit our website: www.tenaris.com

July 07 2015



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

Size: 5.500 in.
Wall: 0.361 in.
Weight: 20.00 lbs/ft
Grade: P110
Min. Wall Thickness: 87.5 %

PIPE BODY DATA			
GEOMETRY			
Nominal OD	5.500 in.	Nominal Weight	20.00 lbs/ft
Nominal ID	4.778 in.	Wall Thickness	0.361 in.
Plain End Weight	19.83 lbs/ft	Standard Drift Diameter	4.653 in.
		Special Drift Diameter	N/A
PERFORMANCE			
Body Yield Strength	641 x 1000 lbs	Internal Yield	12630 psi
Collapse	11100 psi	SMYS	110000 psi
TENARISXP™ BTC CONNECTION DATA			
GEOMETRY			
Connection OD	6.100 in.	Coupling Length	9.450 in.
Critical Section Area	5.828 sq. in.	Threads per in.	5.00
		Connection ID	4.766 in.
		Make-Up Loss	4.204 in.
PERFORMANCE			
Tension Efficiency	100 %	Joint Yield Strength	641 x 1000 lbs
Structural Compression Efficiency	100 %	Structural Compression Strength	641 x 1000 lbs
External Pressure Capacity	11100 psi	Internal Pressure Capacity ⁽¹⁾	12630 psi
		Structural Bending ⁽²⁾	92 °/100 ft
ESTIMATED MAKE-UP TORQUES ⁽²⁾			
Minimum	11270 ft-lbs	Optimum	12520 ft-lbs
		Maximum	13770 ft-lbs
OPERATIONAL LIMIT TORQUES			
Operating Torque	21500 ft-lbs	Yield Torque	23900 ft-lbs

BLANKING DIMENSIONS

Blanking Dimensions

- (1) Internal Pressure Capacity related to structural resistance only. Internal pressure leak resistance as per section 10.3 API 5C3 / ISO 10400 - 2007.
- (2) Structural rating, pure bending to yield (i.e no other loads applied)
- (3) Torque values calculated for API Modified thread compounds with Friction Factor=1. For other thread compounds please contact us at licensees@oilfield.tenaris.com. Torque values may be further reviewed.
- For additional information, please contact us at contact-tenarishydril@tenaris.com

H₂S Preparedness and Contingency Plan Summary



- Hayhurst Eddy County, New Mexico

Training

MCBU Drilling and Completions H₂S 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 H₂S.

Awareness Level

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H₂S, who are not required to perform work in H₂S areas, will be provided with an awareness level of H₂S training prior to entering any H₂S areas. At a minimum, awareness level training will include:

1. Physical and chemical properties of H₂S
2. Health hazards of H₂S
3. Personal protective equipment
4. Information regarding potential sources of H₂S
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 H₂S Training

Employees and contractors required to work in areas that may contain H₂S will be provided with Advanced Level H₂S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H₂S training will include:

1. H₂S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H₂S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H₂S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H₂S 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 H₂S training;
6. Proficiency examination covering all course material.

Advanced H₂S training courses will be instructed by personnel who have successfully completed an appropriate H₂S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.

H₂S Preparedness and Contingency Plan Summary



H₂S Training Certification

All employees and visitors will be issued an H₂S training certification card (or certificate) upon successful completion of the appropriate H₂S training course. Personnel working in an H₂S environment will carry a current H₂S 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 upwind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

H₂S 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.

H₂S Detection and Monitoring System

- a) H₂S 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.

H₂S Preparedness and Contingency Plan Summary



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

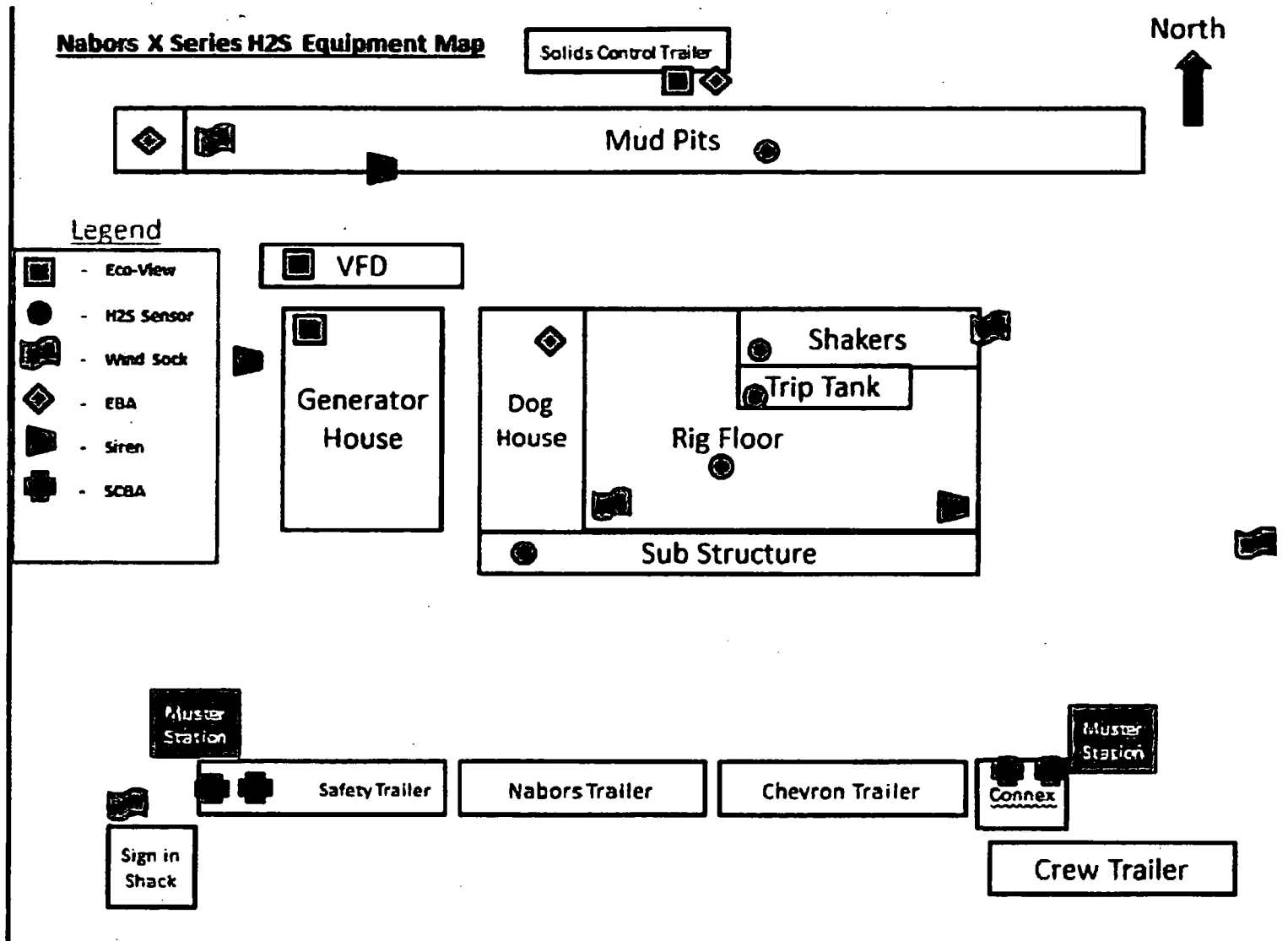
In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

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

Public Safety - Emergency Assistance

<u>Agency</u>	<u>Telephone Number</u>
Eddy County Sheriff's Department	575-887-7551
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Carlsbad Medical Center	575-887-4100
Eddy County Emergency Management	575-628-5450
Poison Control Center	800-222-1222

H₂S Preparedness and Contingency Plan Summary

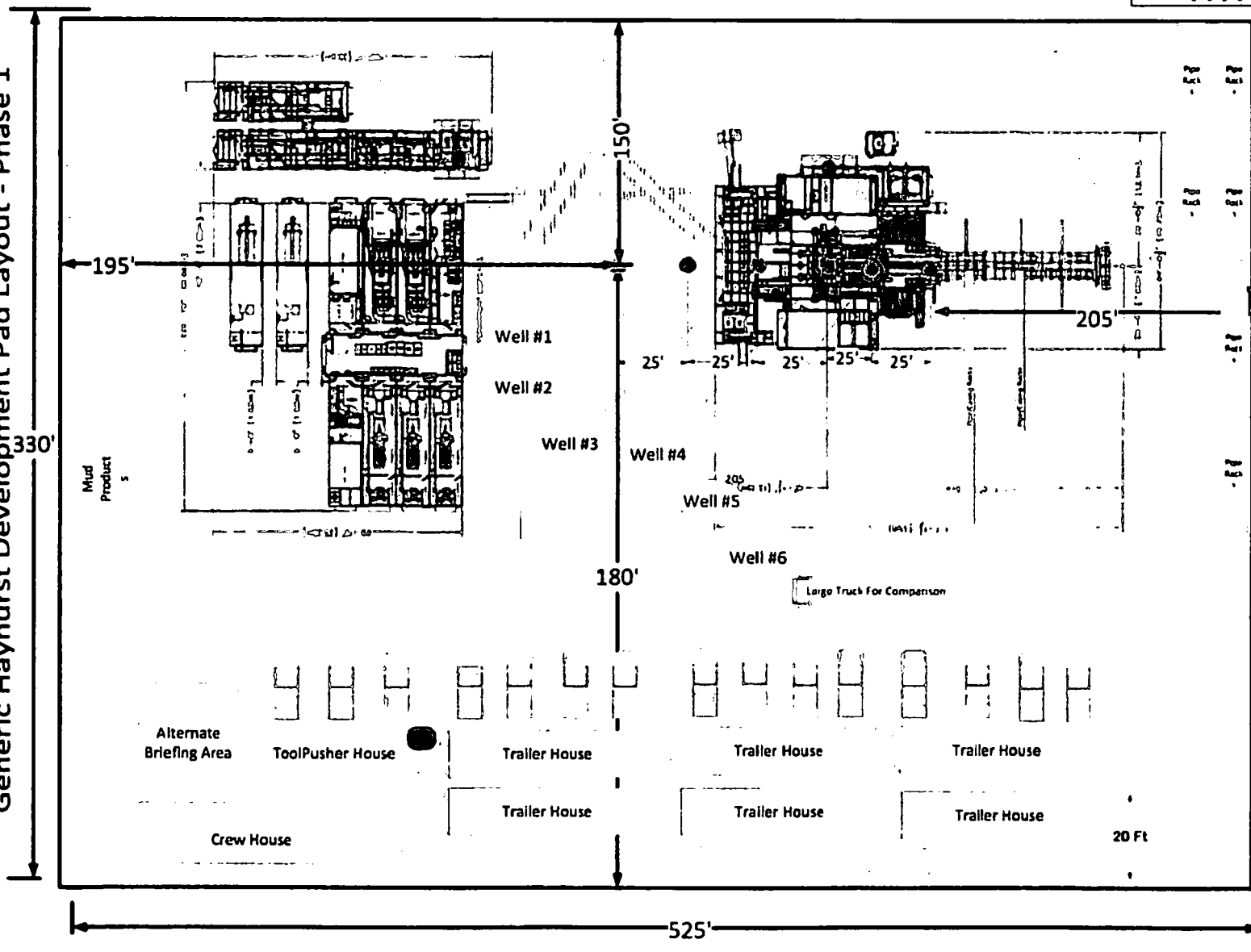


Directional Survey

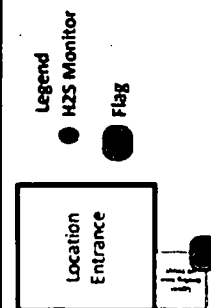
Well Name HH SO 17 20 FED 001 6H
Ground Level (ft) 3257
KB (ft) 3285

Comments	Measured Depth (ft)	Inclination (°)	Azimuth (GN)	Azimuth (TN)	Total Vertical Depth (ft)	DX	DY	DXTN	DYTN	DLS (°/100ft)	X	Y	Z
KOP	0.00	0.00	271.33	271.75	-87.58	0.06	12.31	0.15	12.31	0.0	1883753.13	11634107.83	3286.00
	98.43	1.25	271.33	271.75	52.67	-0.40	12.32	-0.31	12.33	3.0	1883752.67	11634107.84	3145.75
	140.25	2.51	271.33	271.75	94.47	-1.77	12.35	-1.68	12.37	3.0	1883751.30	11634107.87	3103.95
	182.08	3.76	271.33	271.75	136.23	-4.06	12.41	-3.97	12.44	3.0	1883749.01	11634107.93	3062.19
	223.90	5.02	271.33	271.75	177.93	-7.26	12.48	-7.17	12.54	3.0	1883745.81	11634108.00	3020.48
	265.73	6.27	271.33	271.75	219.56	-11.37	12.58	-11.28	12.66	3.0	1883741.70	11634108.10	2978.68
	307.56	7.53	271.33	271.75	261.08	-16.39	12.69	-16.31	12.82	3.0	1883736.68	11634108.21	2937.34
	349.38	8.78	271.33	271.75	302.48	-22.32	12.83	-22.24	13.00	3.0	1883730.75	11634108.35	2895.94
	391.21	9.10	271.33	271.75	344.88	-28.32	12.83	-28.24	13.00	3.0	1883724.07	11634108.45	2853.47
	433.00	10.09	271.33	271.75	387.18	-34.56	12.83	-34.48	13.00	3.0	1883717.80	11634108.55	2810.94
	474.88	11.58	271.33	271.75	429.67	-40.81	12.83	-40.73	13.00	3.0	1883710.99	11634108.65	2768.41
	516.76	13.40	271.33	271.75	471.15	-47.06	12.83	-46.98	13.00	3.0	1883704.18	11634108.75	2725.88
	558.64	15.44	271.33	271.75	512.61	-53.31	12.83	-53.23	13.00	3.0	1883697.37	11634108.85	2683.35
	600.52	17.62	271.33	271.75	554.07	-59.56	12.83	-59.48	13.00	3.0	1883690.56	11634108.95	2640.82
	642.40	19.90	271.33	271.75	595.95	-65.81	12.83	-65.73	13.00	3.0	1883683.75	11634109.05	2598.29
	684.28	22.24	271.33	271.75	637.83	-72.06	12.83	-71.98	13.00	3.0	1883676.94	11634109.15	2555.76
	726.16	24.63	271.33	271.75	679.71	-78.31	12.83	-78.23	13.00	3.0	1883670.13	11634109.25	2513.23
	768.04	27.05	271.33	271.75	721.59	-84.56	12.83	-84.48	13.00	3.0	1883663.32	11634109.35	2470.70
	809.92	29.50	271.33	271.75	763.47	-90.81	12.83	-90.73	13.00	3.0	1883656.51	11634109.45	2428.17
	851.80	31.97	271.33	271.75	805.35	-97.06	12.83	-96.98	13.00	3.0	1883649.70	11634109.55	2385.64
	893.68	34.46	271.33	271.75	847.23	-103.31	12.83	-103.23	13.00	3.0	1883642.89	11634109.65	2343.11
	935.56	36.96	271.33	271.75	889.11	-109.56	12.83	-109.48	13.00	3.0	1883636.08	11634109.75	2300.58
	977.44	39.46	271.33	271.75	930.99	-115.81	12.83	-115.73	13.00	3.0	1883629.27	11634109.85	2258.05
	1019.32	41.98	271.33	271.75	972.87	-122.06	12.83	-121.98	13.00	3.0	1883622.46	11634109.95	2215.52
	1061.20	44.50	271.33	271.75	1014.75	-128.31	12.83	-128.23	13.00	3.0	1883615.65	11634110.05	2172.99
	1103.08	47.03	271.33	271.75	1056.63	-134.56	12.83	-134.48	13.00	3.0	1883608.84	11634110.15	2130.46
	1144.96	49.57	271.33	271.75	1098.51	-140.81	12.83	-140.73	13.00	3.0	1883602.03	11634110.25	2087.93
	1186.84	52.10	271.33	271.75	1140.39	-147.06	12.83	-146.98	13.00	3.0	1883595.22	11634110.35	2045.40
	1228.72	54.64	271.33	271.75	1182.27	-153.31	12.83	-153.23	13.00	3.0	1883588.41	11634110.45	2002.87
	1270.60	57.19	271.33	271.75	1224.15	-159.56	12.83	-159.48	13.00	3.0	1883581.60	11634110.55	1960.34
	1312.48	59.73	271.33	271.75	1266.03	-165.81	12.83	-165.73	13.00	3.0	1883574.79	11634110.65	1917.81
	1354.36	62.28	271.33	271.75	1307.91	-172.06	12.83	-171.98	13.00	3.0	1883567.98	11634110.75	1875.28
	1396.24	64.83	271.33	271.75	1349.79	-178.31	12.83	-178.23	13.00	3.0	1883561.17	11634110.85	1832.75
	1438.12	67.39	271.33	271.75	1391.67	-184.56	12.83	-184.48	13.00	3.0	1883554.36	11634110.95	1790.22
	1479.99	69.94	271.33	271.75	1433.55	-190.81	12.83	-190.73	13.00	3.0	1883547.55	11634111.05	1747.69
	1521.87	72.49	271.33	271.75	1475.43	-197.06	12.83	-196.98	13.00	3.0	1883540.74	11634111.15	1705.16
	1563.75	75.05	271.33	271.75	1517.31	-203.31	12.83	-203.23	13.00	3.0	1883533.93	11634111.25	1662.63
	1605.63	77.60	271.33	271.75	1559.19	-209.56	12.83	-209.48	13.00	3.0	1883527.12	11634111.35	1620.10
	1647.51	80.16	271.33	271.75	1601.07	-215.81	12.83	-215.73	13.00	3.0	1883520.31	11634111.45	1577.57
	1689.39	82.72	271.33	271.75	1642.95	-222.06	12.83	-221.98	13.00	3.0	1883513.50	11634111.55	1535.04
	1731.27	85.28	271.33	271.75	1684.83	-228.31	12.83	-228.23	13.00	3.0	1883506.69	11634111.65	1492.51
	1773.15	87.83	271.33	271.75	1726.71	-234.56	12.83	-234.48	13.00	3.0	1883500.00	11634111.75	1450.00
	1815.03	90.35	271.33	271.75	1768.59	-240.81	12.83	-240.73	13.00	3.0	1883493.19	11634111.85	1407.47
	1856.91	92.88	271.33	271.75	1810.47	-247.06	12.83	-246.98	13.00	3.0	1883486.38	11634111.95	1364.94
	1898.79	95.44	271.33	271.75	1852.35	-253.31	12.83	-253.23	13.00	3.0	1883479.57	11634112.05	1322.41
	1940.67	97.99	271.33	271.75	1894.23	-259.56	12.83	-259.48	13.00	3.0	1883472.76	11634112.15	1279.88
	1982.55	100.55	271.33	271.75	1936.11	-265.81	12.83	-265.73	13.00	3.0	1883465.95	11634112.25	1237.35
	2024.43	103.10	271.33	271.75	1977.99	-272.06	12.83	-271.98	13.00	3.0	1883459.14	11634112.35	1194.82
	2066.31	105.64	271.33	271.75	2019.87	-278.31	12.83	-278.23	13.00	3.0	1883452.33	11634112.45	1152.29
	2108.19	108.19	271.33	271.75	2061.75	-284.56	12.83	-284.48	13.00	3.0	1883445.52	11634112.55	1109.76
	2150.07	110.74	271.33	271.75	2103.63	-290.81	12.83	-290.73	13.00	3.0	1883438.71	11634112.65	1067.23
	2191.95	113.30	271.33	271.75	2145.51	-297.06	12.83	-296.98	13.00	3.0	1883431.90	11634112.75	1024.70
	2233.83	115.85	271.33	271.75	2187.39	-303.31	12.83	-303.23	13.00	3.0	1883425.09	11634112.85	982.17
	2275.71	118.40	271.33	271.75	2229.27	-309.56	12.83	-309.48	13.00	3.0	1883418.28	11634112.95	939.64
	2317.59	120.95	271.33	271.75	2271.15	-315.81	12.83	-315.73	13.00	3.0	1883411.47	11634113.05	897.11
	2359.47	123.50	271.33	271.75	2313.03	-322.06	12.83	-321.98	13.00	3.0	1883404.66	11634113.15	854.58
	2401.35	126.05	271.33	271.75	2354.91	-328.31	12.83	-328.23	13.00	3.0	1883397.85	11634113.25	812.05
	2443.23	128.60	271.33	271.75	2396.79	-334.56	12.83	-334.48	13.00	3.0	1883391.04	11634113.35	769.52
	2485.11	131.15	271.33	271.75	2438.67	-340.81	12.83	-340.73	13.00	3.0	1883384.23	11634113.45	726.99
	2526.99	133.70	271.33	271.75	2480.55	-347.06	12.83	-346.98	13.00	3.0	1883377.42	11634113.55	684.46
	2568.87	136.25	271.33	271.75	2522.43	-353.31	12.83	-353.23	13.00	3.0	1883370.61	11634113.65	641.93
	2610.75	138.80	271.33	271.75	2564.31	-359.56	12.83	-359.48	13.00	3.0	1883363.80	11634113.75	599.40
	2652.63	141.35	271.33	271.75	2606.19	-365.81	12.83	-365.73	13.00	3.0	1883357.00	11634113.85	556.87
	2694.51	143.90	271.33	271.75	2648.07	-372.06	12.83	-371.98	13.00	3.0	1883350.19	11634113.95	514.34
	2736.39	146.45	271.33	271.75	2689.95	-378.31	12.83	-378.23	13.00	3.0	1883343.38	11634114.05	471.81
	2778.27	149.00	271.33	271.75	2731.83	-384.56	12.83	-384.48	13.00	3.0	1883336.57	11634114.15	429.28
	2820.15	151.55	271.33	271.75	2773.71	-390.81	12.83	-390.73	13.00	3.0	1883329.76	11634114.25	386.75
	2862.03	154.10	271.33	271.75	2815.59	-397.06	12.83	-396.98	13.00	3.0	1883322.95	11634114.35	344.22
	2903.91	156.65	271.33	271.75	2857.47	-403.31	12.83	-403.23	13.00	3.0	1883316.14	11634114.45	301.69
	2945.79	159.20	271.33	271.75	2899.35	-409.56	12.83	-409.48	13.00	3.0	1883309.33	11634114.55	259.16
	2987.67	161.75	271.33	271.75	2941.23	-415.81	12.83	-415.73	13.00	3.0	1883302.52	11634114.65	216.63
	3029.55	164.30	271.33	271.75	2983.11	-422.06	12.83	-421.98	13.00	3.0	1883295.71	11634114.75	174.10
	3071.43	166.85	271.33	271.75	3024.99	-428.31	12.83	-428.23	13.00	3.0	1883288.90	11634114.85	131.57
	3113.31	169.40	271.33	271.75	3066.87	-434.56	12.83	-434.48	13.00	3.0	1883282.09	11634114.95	89.04
	3155.19	171.95	271.33	271.75	3108.75	-440.81	12.83	-440.73	13.00	3.0	1883275.28	11634115.05	46.51
	3197.07	174.50	271.33	271.75	3150.63	-447.06	12.83	-446.98	13.00	3.0	1883268.47	11634115.15	4.00
	3238.95	177.05	271.33	271.75	3192.51	-453.31	12.83	-453.23	13.00	3.0	1883261.66	11634115.25	

Generic Hayhurst Development Pad Layout - Phase 1



- H2S Monitor Locations**
- Bop/Celler
 - Rig Floor
 - Shaker SUD
 - Mud Nipple
- Flag Locations**
- Sign-in Shack
 - Rig Floor
 - Dog House
- 10 Minute Escape Pads**
- 1 at Pits
 - 1 at Trip Tank
 - 1 at Accumulator
 - 4 at Rig floor
- 45 Minute Escape Pads**
- 2 at Briefing Area
 - 2 at Alternate Briefing Area







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

SUPO Data Report

07/09/2018

APD ID: 10400019870

Submission Date: 08/17/2017

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

HH_SO_17_20_FED_001_6H_Road_08-17-2017.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will also repair any pot holes, clear ditches, repair crown; etc. All existing structures on the entire access route such as cattle guards, other range improvements project, culverts, etc. will be properly repaired or replace if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways. Existing lease roads operated by Chevron will be maintained as needed or upon request (based on historical weather data, CVX expects that maintenance will likely occur four to five times annually). Existing lease roads used by multiple operators will be maintained through road maintenance parameters with all parties.

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

HH_SO_17_20_FED_001_6H_New_Roads_08-17-2017.pdf

ACOE Permit Number(s):

Well Number: 6H

[illegible]

Average total length (mm) of class 0-100

Dr. James G. Thompson, 1605 17th St., N.W., Wash., D.C.

Access types of records in class

Source: *Journal of Management Education*, 20(1), 1995, pp. 10-11.

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Access to other contents that do not have a direct influence on the functioning will be installed at a subsequent date. The access to the other contents will be then be subject to the payment of a fee. The access will be then be subject to the payment of a fee.

Access turnout map:

New words definitions provided. © 2006 by Linda Ward Beech, Oahu, HI.

The page $\mathcal{C}(\mathcal{A})$ is a $\mathbb{C}(\mathcal{A})$ -bimodule. For $\mathcal{A} = \mathcal{A}(\Gamma, \mathcal{R})$ with $\Gamma = (\Gamma_0, \Gamma_1)$ and $\mathcal{R} = (\mathcal{R}_0, \mathcal{R}_1)$ we use $\mathcal{C}(\mathcal{A}) = \mathcal{C}(\Gamma, \mathcal{R})$ as shorthand.

1992-1993 Vehicle Emissions (VUE) Description: Data collected from 1992-1993 on all vehicles aged 1-4.

Additional Attachment(s):

HH SO 17 20 FED 001 6H New Roads 08-17-2017.pdf

Printed on Recycled Paper

4309

【关键词】 抑郁症 认知行为疗法 团体心理治疗

Well Number: 6H

Address: 6015 67th Ave. NE, Seattle, WA 98115-4101

[illegible]

News, 10/10/1991, 11:11:11

Access on the Internet can be direct.

Access other e-books (100 free) by clicking on:

Access turnout map:

Record Of / Page Count In Summary Case (DPS) Description

附註(33):

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Max slope (%):

Max grade (%):

Army Corps of Engineers (ACOE) permit required?

ACOE Permit Number(s):

New road gravel width:

New road access erosion control:

New road access plan or profile prepared?

New road access plan attachment:

Access road engineering design required?

Access road engineering design attachment:

Access surfacing type:

Access topsoil source:

Access surfacing type description:

Access profile (borehole location, depth):

Offsite topsoil source description:

Offsite topsoil removed (process):

Access/Offsite construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drain age (years):

Drainage Control construction:

Road Drainage Control to structures (DCS) required?

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

HH_SO_17_20_FED_001_6H_Radius_Map_08-17-2017.pdf

Existing Wells description:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Existing production facilities located in the SW corner of section 9, T26S, R27E where oil and gas sales will take place. The existing facility is 500' X 700'. Gas compression will occur within the EXISTING facility boundaries, Gas purchaser pipeline is in place at the tank battery, open top tanks or open containment WILL be netted, open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting. All above ground structures will be painted non-reflective shale green for blending with surrounding environment. Pipelines Include: 4583 of flowlines carrying production (buried), 107' Gas lift line carrying pressurized gas (buried), 107' temporary water line carrying fresh water (surface). A ROW will be applied for through the State and BLM. (30' wide, 3.2 acres). All construction activity will be confined to the approved ROW. Pipeline will run parallel to the road and will stay within approved ROW.

Section 5 - Location and Types of Water Supply

Water Source Table

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

Water source type: GW WELL

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: FEDERAL

Water source transport method: PIPELINE

Source transportation land ownership: FEDERAL

Water source volume (barrels): 716000

Source volume (acre-feet): 92.28746

Source volume (gal): 30072000

Water source and transportation map:

HH_SO_17_20_FED_001_6H_aerial_08-17-2017.pdf

Water source comments: private source with ponds located in SW4 Section 9 T26S R27E. A temporary 10" expanding pipe surface transfer line will run along established disturbance corridors, such as along access roads or on top of flowline or pipeline right of way. o water line will run parallel to road and will stay within 10' of access road. o temporary BLM ROWs will be applied for as needed for the water transfer lines.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: CALICHE WILL BE SOURCED FROM A CHEVRON OPERATED NMSLO PIT IN S2 NW4 SECTION 16 T26S R27E OR AN ALTERNATE PRIVATE PIN IN SECTION 13 T24S R27E, EDDY COUNTY NM.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: o Garbage and Trash o Human waste and grey water o Other wastes material i.e. chemicals, salts, frac sand o Drill cutting

Amount of waste: 200 pounds

Waste disposal frequency : Daily

Safe containment description: o collected in a trash container collected for disposal o properly contained and disposed of state approved disposal facility o properly disposed of into steel tanks. All to be properly disposed at a State approved disposal facility.

Safe containmant attachment:

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

Disposal type description:

Disposal location description: STATE APPROVED FACILITY: o Carlsbad 6601 Hobbs HWY Carlsbad, NM 575-393-1079 o Eunice Sundance Services 5 miles East of Eunice on HWY 18 and Wallach Ln 575-390-0342 o Seminole Permian Disposal 587 US HWY 385 S 432-955-0322

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Reserve pit length (ft.)

Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

HH_SO_17_20_FED_001_6H_Well_Plat_08-17-2017.pdf

Comments: As referenced on the attached APD SUPO o Exterior well pad dimensions are 540' X 380' o Interior well pad dimensions from point of entry (well head) of the westernmost well are N-335', S-260', E-120', W-260'. The length to the east includes 25' spacing for next well on multi-well pad (six wells). Total disturbance area needed for construction of well pad will be 4.71 acres. o Topsoil placement is on the up-slope edge of each pad (unless otherwise directed by BLM - final placement to be included in APD's SUPO) no higher than 3 feet where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices. o Construction methods: Pads would be constructed by clearing vegetation, salvaging and storing topsoil and leveling the drilling area cut-and-fill techniques where appropriate.

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: HH SO 17 20 FED 001

Multiple Well Pad Number: 1H 2H 3H 4H 5H 6H

Recontouring attachment:

HH_SO_17_20_FED_001_6H_CutFill_08-17-2017.pdf

HH_SO_17_20_FED_001_6H_IR_08-17-2017.pdf

HH_SO_17_20_FED_001_6H_SUP_08-17-2017.pdf

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

Drainage/Erosion control reclamation: The well pad, road, and surrounding area will be cleared of material, trash, and equipment. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. All disturbed areas will be re-contoured to the contour existing prior to initial construction. The areas will be seeded with the proper BLM seed mixture (BLM #2), free of noxious weeds.

Wellpad long term disturbance (acres): 1.49

Wellpad short term disturbance (acres): 3.22

Access road long term disturbance (acres): 0.06

Access road short term disturbance (acres): 0.06

Pipeline long term disturbance (acres): 0.006198347

Pipeline short term disturbance (acres): 0.006198347

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.5561984

Total short term disturbance: 3.2861984

Disturbance Comments: All disturbed area, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be re-contoured to the contour existing prior to initial construction or a contour that blends in distinguishably with the surrounding landscape.

Reconstruction method: All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. Reducing the pad size to approximately 1.22222 acres from the proposed size of 444 acres. within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of all materials, trash, and equipment not required for production.

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

Soil treatment: After all the disturbed areas have been properly prepared; the areas will be seeded with the proper BLM seed mixture, free of noxious weeds.

Existing Vegetation at the well pad: mesquite, grass, shrubs

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: mesquite, grass, shrubs

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: mesquite, grass, shrubs

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: mesquite, grass, shrubs

Existing Vegetation Community at other disturbances attachment:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre
-----------	-------------

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Kevin

Last Name: Dickerson

Phone:

Email: lfuh@chevron.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Treat with BLM seed mixture (BLM #2) free of noxious weeds.

Weed treatment plan attachment:

Monitoring plan description: The interim reclamation will be monitored periodically to ensure that vegetation has re-established.

Monitoring plan attachment:

Success standards: As per BLM requirements.

Pit closure description: None

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other Information

Right of Way needed? YES

Use APD as ROW? YES

ROW Type(s): 287001 ROW – Water Facility, 288100 ROW – O&G Pipeline, Other

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 001

Well Number: 6H

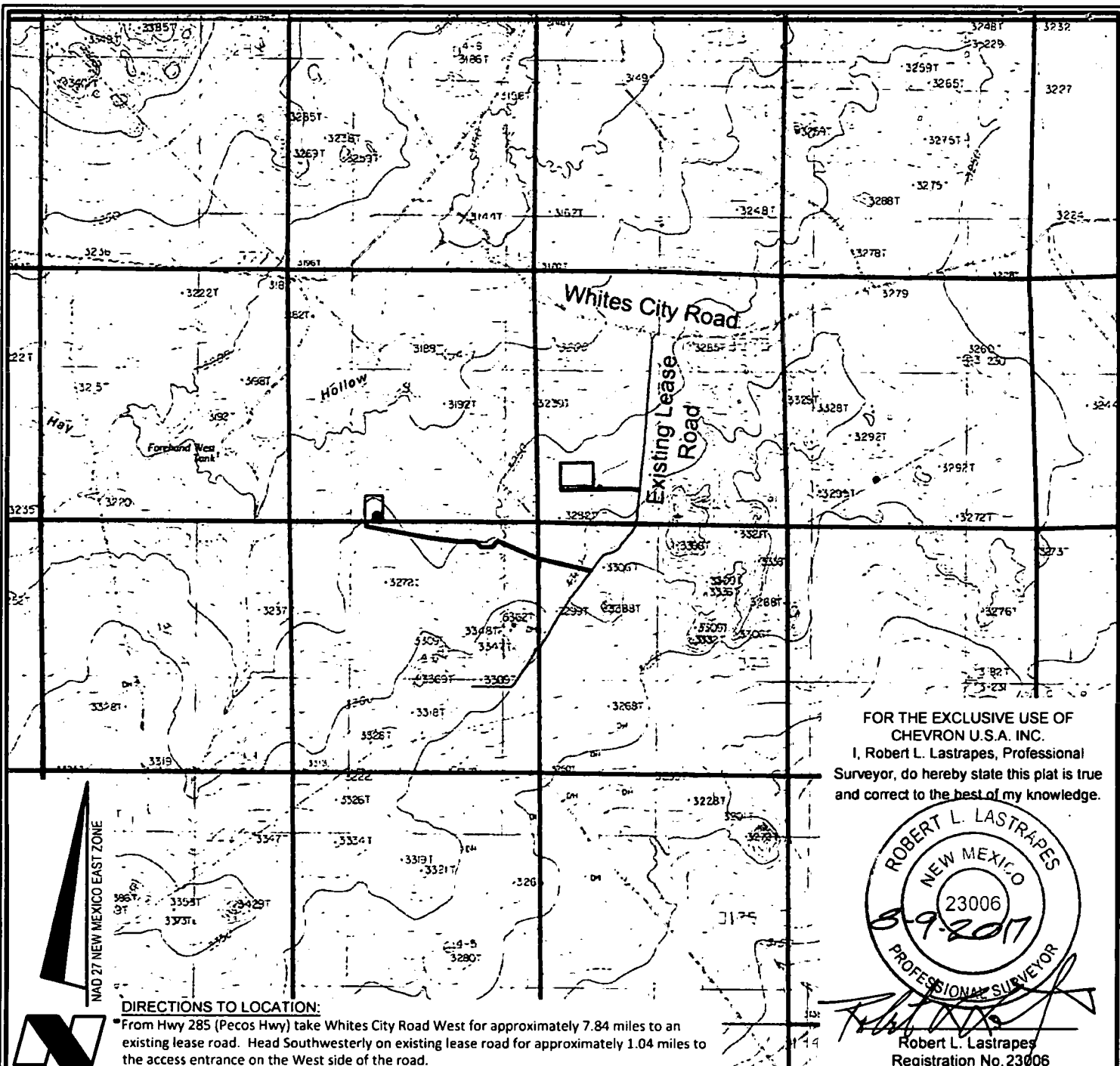
ROW Applications

SUPO Additional Information: o Recycle containment pond design feature - four permanent recycle containment ponds will be required - permanent buried pipelines will be installed to transport water - all wells covered by the MDP will require hydraulic fracturing - the ponds will be designed as "multiwell fluid management pits o Berms - berms shall be sloped at 3:1 - berm top will have at least 12' of working area - berm height, thickness, and depth will be determined based on-site specific information o Liners - ponds shall be double lined and have a method of leak detection - an 8 oz geotextile fabric shall be used to line the soil prior to installation - primary liner should be 60-mil smooth - minimum 200-mil geonet shall be installed between primary and secondary liner o Fencing - ponds shall have eight game fencing installed - the fence bottom shall be keyed-in around the perimeter of the pond site o Wildlife Protection - typical bird deterrent options include molded decoy owls and noise-making streamers - wildlife protection measure, including those for migratory birds, shall be monitored at least monthly to ensure deterrents are effective

Use a previously conducted onsite? YES

Previous Onsite information: On-site performed by BLM NRS: Paul Murphy 10/18/2016.

Other SUPO Attachment



FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



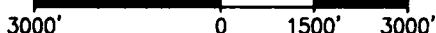
Robert L. Lastrapes
Robert L. Lastrapes
Registration No. 23006

DIRECTIONS TO LOCATION:

From Hwy 285 (Pecos Hwy) take Whites City Road West for approximately 7.84 miles to an existing lease road. Head Southwesterly on existing lease road for approximately 1.04 miles to the access entrance on the West side of the road.

VICINITY MAP

SCALE: 1" = 3000'



LEGEND

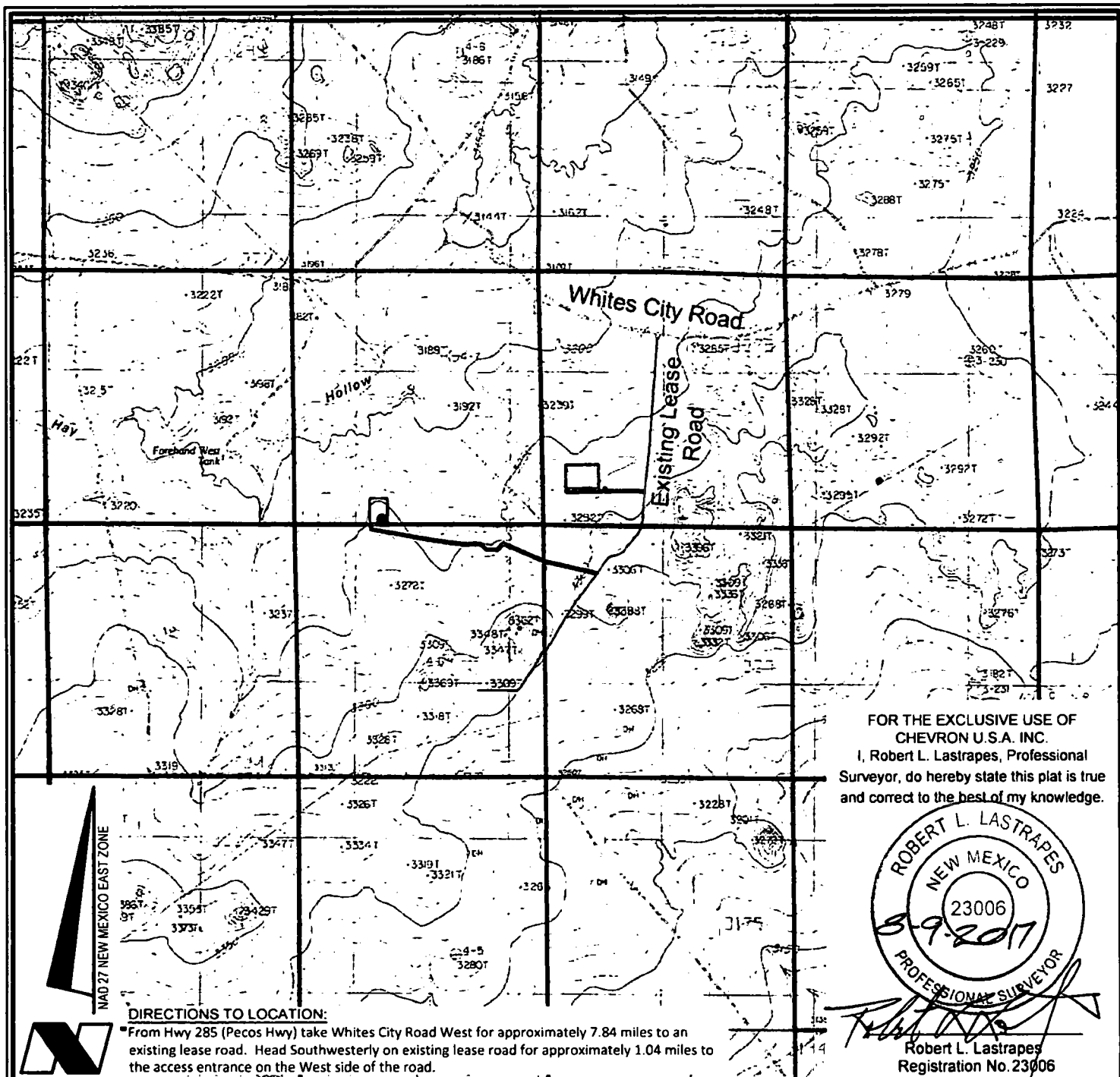
- Proposed Well
- Proposed Access Road
- Proposed Drillsite
- Existing Road
- Section Line
- Proposed Frac Pond
- Proposed Facility

CHEVRON U.S.A. INC.
HH SO 17 20 001 NO. 6H WELL
LOCATED 205' FSL AND 1,872' FWL
SECTION 8, T26S-R27E
EDDY COUNTY, NEW MEXICO



C.H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

DRAWN BY: VHV		REVISIONS	
PROJ. MGR.: GDG	No. 2	DATE: 10/24/2016	REVISED BY: BOR
DATE: 12/23/2015	No. 3	DATE: 08/08/2017	REVISED BY: KJD
FILENAME: T:\2015\2153441\DWG\HH SO 17 20 FED 001 6H ROAD PLAT.dwg			



DIRECTIONS TO LOCATION:

From Hwy 285 (Pecos Hwy) take Whites City Road West for approximately 7.84 miles to an existing lease road. Head Southwesterly on existing lease road for approximately 1.04 miles to the access entrance on the West side of the road.

VICINITY MAP

SCALE: 1" = 3000'

3000' 0 1500' 3000'

LEGEND

- Proposed Well
- Proposed Access Road
- Proposed Drillsite
- Existing Road
- Section Line
- Proposed Frac Pond
- Proposed Facility

CHEVRON U.S.A. INC.

HH SO 17 20 001 NO. 6H WELL
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REVISIONS

PROJ. MGR.: GDG

No. 2

DATE: 10/24/2016

REVISED BY: BOR

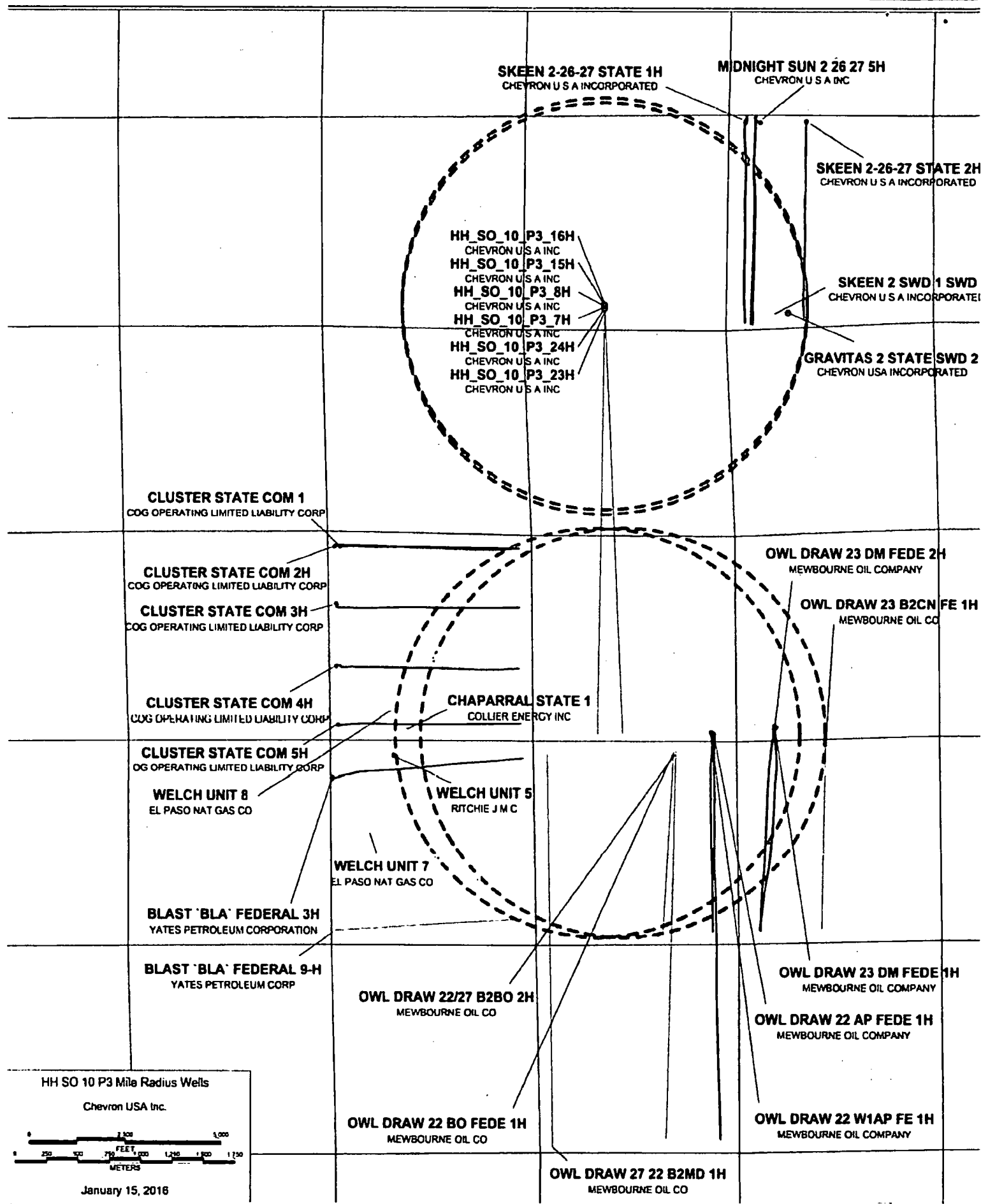
DATE: 12/23/2015

No. 3

DATE: 08/08/2017

REVISED BY: KJD

FILENAME: T:\2015\2153441\DWG\HH SO 17 20 FED 001 6H ROAD PLAT.dwg



LEGEND

Section Line
80' Right of Way
WFMP Flowline
Gas Lift Flowline
SWD Flowlines
Centerline Access
Utility Line
Hi Pressure Flowline
Low Pressure Flowline
Frac Water Flowline
Fence Line
Lease Road/Pads
Found Monument

Sec. 8

Bureau of Land Management
Proposed 80' ROW $\pm 940'$, ± 56.97 Rods, ± 1.72 Acres
Proposed WFMP Flowline(Cluster) $\pm 931'$, ± 56.42 Rods
Proposed Gas Lift Flowline $\pm 914'$, ± 55.39 Rods
Proposed SWD Flowline $\pm 911'$, ± 55.21 Rods
Proposed Utility Line $\pm 891'$, ± 54.00 Rods

Sec. 9

Bureau of Land Management
Proposed 80' ROW $\pm 2,202'$, ± 133.45 Rods, ± 4.98 Acres
Proposed WFMP Flowline(Cluster) $\pm 614'$, ± 37.21 Rods
Proposed Gas Lift Flowline $\pm 614'$, ± 37.21 Rods
Proposed SWD (1) Flowline $\pm 1,059'$, ± 64.18 Rods
Proposed SWD (2) Flowline $\pm 2,177'$, ± 131.94 Rods
Proposed Utility Line $\pm 2,199'$, ± 133.27 Rods
Proposed Hi Pressure Flowline $\pm 1,646'$, ± 99.76 Rods
Proposed Low Pressure Flowline $\pm 1,661'$, ± 100.67 Rods
Proposed Frac Water Flowline $\pm 853'$, ± 51.70 Rods

Proposed
HH SO 17 20
FED 001 PAD

Future
Central Tank
Battery

Proposed
Frac Pond

Existing 20' Lease Road

Fnd. 2" Iron Pipe
w/ Cap at the
SW Corner of
Section 9
 $\pm 583'$
 $S 71^{\circ} 47' 06" W 2,277.87'$

$\pm 726'$

Centerline of Future
HH SO 8 P5 Access Road

Sec. 17

Bureau of Land Management
Proposed 80' ROW $\pm 3,464'$, ± 209.94 Rods, ± 6.36 Acres
Proposed WFMP Flowline(Cluster) $\pm 3,398'$, ± 205.94 Rods
Proposed Gas Lift Flowline $\pm 3,434'$, ± 208.12 Rods
Proposed SWD Flowline $\pm 3,447'$, ± 208.91 Rods
Proposed Utility Line $\pm 3,562'$, ± 215.88 Rods
Proposed Access Road $\pm 3,744'$, ± 226.89 Rods

PROPOSED 80' ROW
 $\pm 6,606'$, ± 400.36 Rods, ± 13.06 Acres
PROPOSED WFMP FLOWLINE(CLUSTER)
 $\pm 4,943'$, ± 299.57 Rods
PROPOSED GAS LIFT FLOWLINE
 $\pm 4,962'$, ± 300.72 Rods
PROPOSED SWD (1) FLOWLINE
 $\pm 5,417'$, ± 328.30 Rods
PROPOSED SWD (2) FLOWLINE
 $\pm 2,177'$, ± 131.94 Rods
LOW PRESSURE GAS FLOWLINE
 $\pm 1,661'$, ± 100.67 Rods
HI PRESSURE GAS FLOWLINE
 $\pm 1,646'$, ± 99.76 Rods
FRAC WATER FLOWLINE
 $\pm 853'$, ± 51.70 Rods
PROPOSED UTILITY LINE
 $\pm 6,652'$, ± 403.15 Rods

Sec. 16

State of New Mexico
Proposed Access Road, $\pm 1,155'$, ± 69.97 Rods

Not to be used for construction, bidding,
recording, conveyance, sales, or as the
basis for the issuance of a permit.

PRELIMINARY

Scale: 1" = 500'

500' 0 250' 500'



C. H. Fenstermaker & Associates, L.L.C.
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CHEVRON U.S.A. INC.

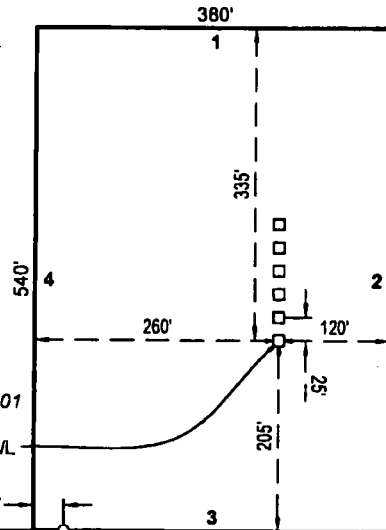
PROPOSED SITE DETAIL
HH SO 17 20 FED 001 1H-6H
SECTIONS 8, 9, 16 AND 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: TBD		REVISIONS	
PROJ. MGR.: GDG	No. 2	DATE: 10/31/2016	REVISED BY: GDG
DATE: 10/11/2016	No. 3	DATE: 08/09/2017	REVISED BY: GDG
FILENAME: T:\2015\2153440\DWG\HH SO 17 20 FED 001 Detail.dwg			

R 27 E

T
26
S

HH SO 17 20 FED 001
No. 6H Well
205' FSL, 1,872' FWL



**PROPOSED
PAD**
±4.71 Acres

Sec. 8

Bureau of Land Management
±4.71 Acres- Proposed Pad

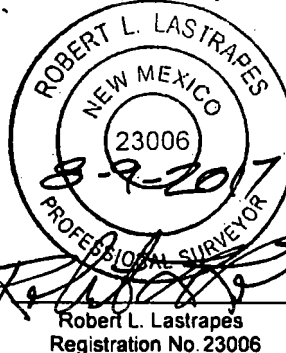
Sec. 17

Bureau of Land Management
± 3,994.26', ±242.07 Rods, ±2.20 Acres-
Proposed Access Road (A)

**CENTERLINE
PROPOSED
ACCESS ROAD (A)**
24' X ±5,148.76'
±312.04 Rods
±2.84 Acres

PROPOSED PAD		
COURSE	BEARING	DISTANCE
1	S 89° 52' 09" E	380.00'
2	S 00° 07' 17" W	540.00'
3	N 89° 51' 50" W	380.00'
4	N 00° 07' 30" E	540.00'

FOR THE EXCLUSIVE USE OF
CHEVRON U.S.A. INC.
I, Robert L. Lastrapes, Professional
Surveyor, do hereby state this plat is true
and correct to the best of my knowledge.



SURFACE USE PLAT

PAGE 1 OF 3

CHEVRON U.S.A. INC.
PROPOSED PADS, FRAC POND & ACCESS ROADS
HH SO 17 20 FED 001 NO. 6H WELL
SECTIONS 8, 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: LJJ

REVISIONS

PROJ. MGR.: GDG

No. 6

DATE: 11/15/2016

REVISED BY: KJD

DATE: 12/22/2015

No. 7

DATE: 08/08/2017

REVISED BY: KJD

FILENAME: T:\2015\2153441\DWG\HH SO 17 20 FED 001 6H WELL PLAT.dwg



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135 Regency Sq. Lafayette, LA 70508
Ph. 337-237-2200 Fax. 337-232-3299
www.fenstermaker.com

NAD 27 NEW MEXICO EAST ZONE

Scale: 1" = 200'
200' 0 100' 200'

CENTERLINE PROPOSED ACCESS ROADS (A, B & C)

COURSE	BEARING	DISTANCE
1	S 00° 11' 15" E	107.17'
2	S 79° 37' 12" E	1369.04'
3	S 82° 59' 20" E	623.79'
4	S 89° 50' 47" E	381.31'
5	S 42° 37' 55" E	150.63'
6	S 89° 58' 57" E	233.42'
7	N 44° 06' 16" E	178.79'
8	S 66° 53' 45" E	944.02'
9	S 77° 07' 23" E	6.09'
10	S 77° 07' 39" E	1154.50'
11	S 00° 54' 03" E	67.85'
12	N 89° 01' 22" E	1448.01'
13	S 84° 54' 27" E	215.40'
14	S 00° 54' 03" E	55.84'

R 27 E

NW FRAC POND CORNER	NE FRAC POND CORNER	NW FACILITY CORNER	NE FACILITY CORNER *
X= 541,525 NAD 27 Y= 383,458	X= 542,275 NAD 27 Y= 383,471	X= 540,782 NAD 27 Y= 383,045	X= 541,482 NAD 27 Y= 383,057
ELEVATION +7777' NAVD 88	ELEVATION +7777' NAVD 88	ELEVATION +3263' NAVD 88	ELEVATION +3265' NAVD 88
SW FRAC POND CORNER	SE FRAC POND CORNER	SW FACILITY CORNER	SE FACILITY CORNER
X= 541,540 NAD 27 Y= 382,558	X= 542,290 NAD 27 Y= 382,571	X= 540,790 NAD 27 Y= 382,545	X= 541,490 NAD 27 Y= 382,557
ELEVATION +7777' NAVD 88	ELEVATION +7777' NAVD 88	ELEVATION +3274' NAVD 88	ELEVATION +3276' NAVD 88

Note: No Elevations
for Frac Pond as of
November 15, 2016

Sec. 8

Bureau of Land Management
±4.71 Acres- Proposed Pad

SEE PAGE
1 OF 3

T
26
S

Fnd. 2" Iron Pipe
w/ Cap at the
NW Corner of
Section 17

Sec. 17

Bureau of Land Management
± 3,994.26', ±242.07 Rods, ±2.20 Acres-
Proposed Access Road (A)

LEGEND

Section Line	Centerline Access
Proposed Pad	Section Break
Existing Road	Found Monument

Scale: 1" = 1000'

1000' 0 500' 1000'

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CENTERLINE PROPOSED ACCESS ROAD (C)

24' X ±55.83'
±3.38 Rods
±0.03 Acres

Proposed
Frac Pond
±15.50 Acres

CENTERLINE PROPOSED ACCESS ROAD (B)

24' X ±1731.26'
±104.92 Rods
±0.95 Acres

Sec. 9

Bureau of Land Management
±1787.09', ±108.30 Rods,
±0.98 Acres-Proposed
Access Roads (B & C)

Sec. 16

NW / NW
State of New Mexico
±1,154.50', ±69.97 Rods, ±0.64 Acres-
Proposed Access Road (A)

SURFACE USE PLAT

PAGE 2 OF 3

CHEVRON U.S.A. INC.
PROPOSED PADS, FRAC POND & ACCESS ROADS
HH SO 17 20 FED 001 NO. 6H WELL
SECTIONS 8, 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: LJG

REVISIONS

PROJ. MGR.: GDG

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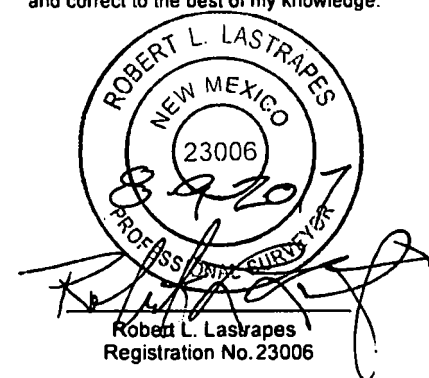
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NOTE:

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SURFACE USE PLAT

PAGE 3 OF 3

CHEVRON U.S.A. INC.

PROPOSED PADS, FRAC POND & ACCESS ROADS
HH SO 17 20 FED 001 NO. 6H WELL
SECTIONS 8, 9, 16 & 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

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PAD DESIGN TABLE

PT	NATURAL GROUND ELEV.	DESIGN ELEV.	CUT / FILL
A	3250.50	3255.34	4.84
B	3249.92	3255.34	5.42
C	3249.35	3255.34	5.99
D	3256.53	3255.34	-1.19
E	3260.74	3255.34	-5.40
F	3259.50	3255.34	-4.16
G	3255.33	3255.34	0.01
H	3253.07	3255.34	2.27
I	3255.29	3255.34	0.05
J	3255.53	3255.34	-0.19
K	3255.76	3255.34	-0.42
L	3255.99	3255.34	-0.65
M	3256.23	3255.34	-0.89
N	3256.46	3255.34	-1.12

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Registration No. 23006

CUT & FILL PLAT

PAGE 1 OF 3

CHEVRON U.S.A. INC.

PROPOSED PAD

HH SO 17 20 FED 001 NOS. 1H-6H WELLS

SECTION 8, T26S-R27E

EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR

REVISIONS

PROJ. MGR.: GDG

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DATE:

REVISED BY:

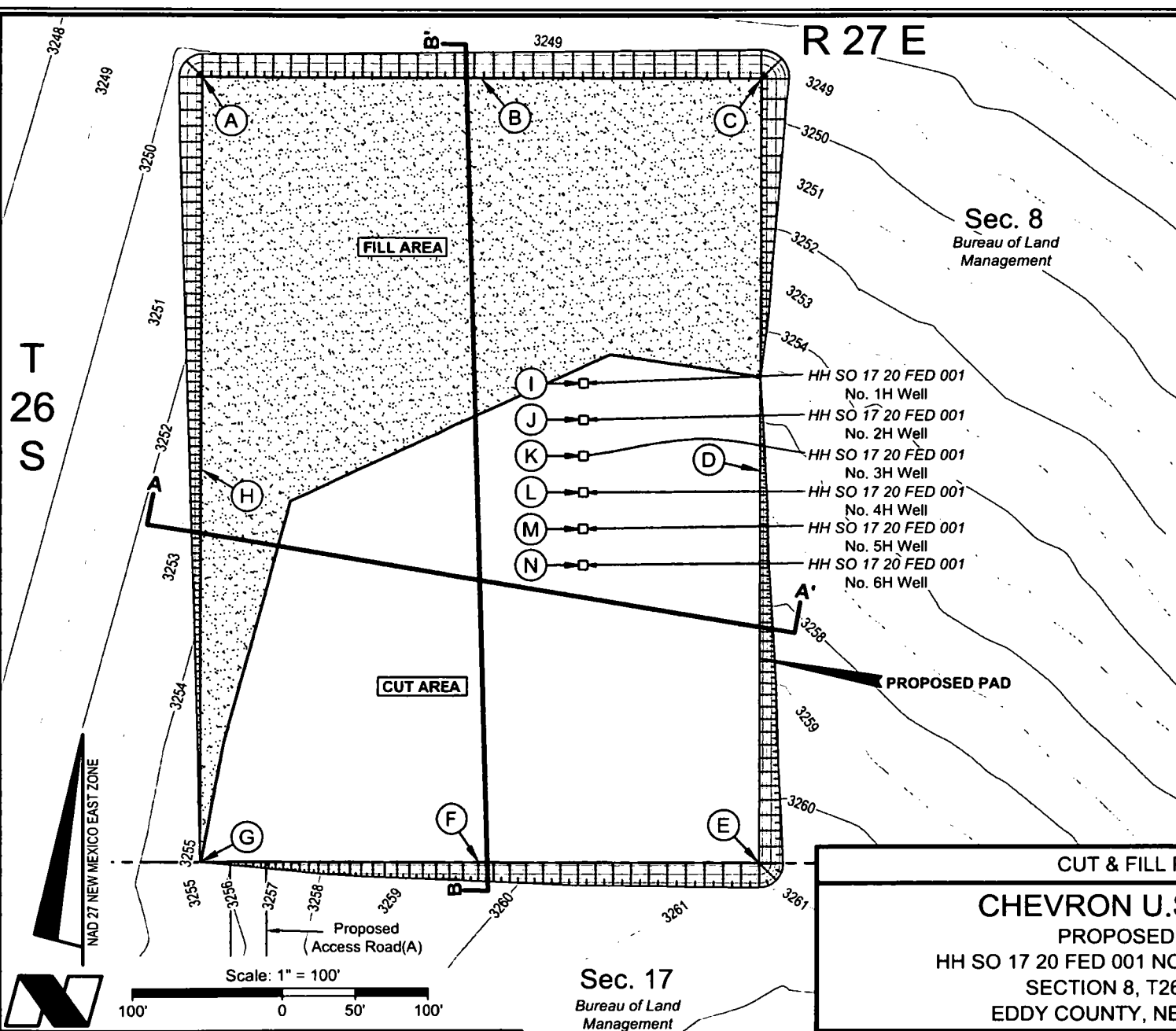
DATE: AUGUST 14, 2017

No.

DATE:

REVISED BY:

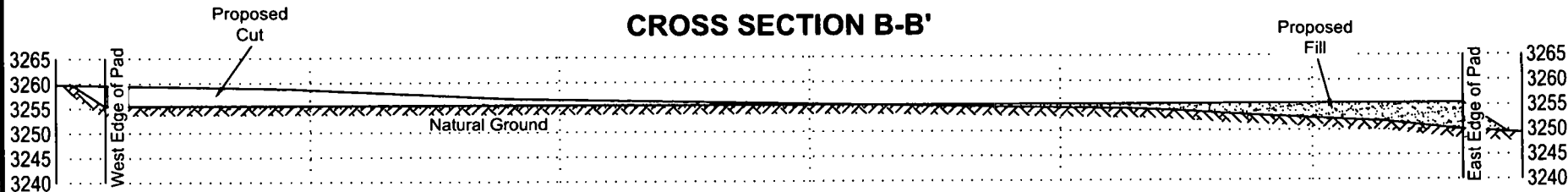
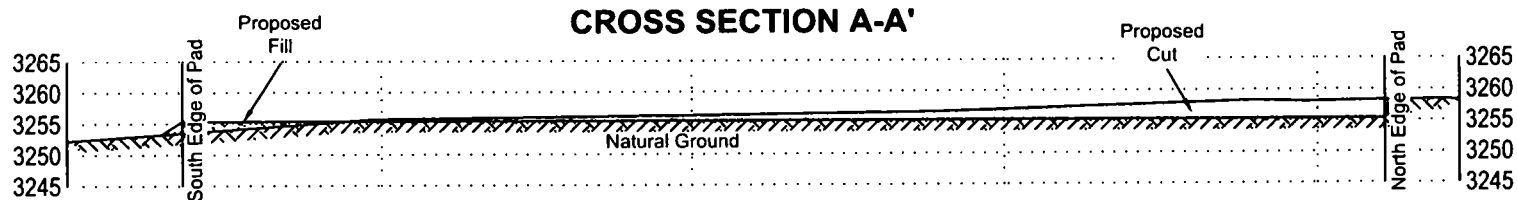
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FENSTERMAKER

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CUT VOLUME = 8,644.22 Cu. Yd.
FILL VOLUME = 8,644.22 Cu. Yd.
NET VOLUME = 0.00 Cu. Yd.



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CUT & FILL PLAT

PAGE 2 OF 3

CHEVRON U.S.A. INC.

PROPOSED PAD

HH SO 17 20 FED 001 NOS. 1H-6H WELLS

SECTION 8, T26S-R27E

EDDY COUNTY, NEW MEXICO

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DATE:

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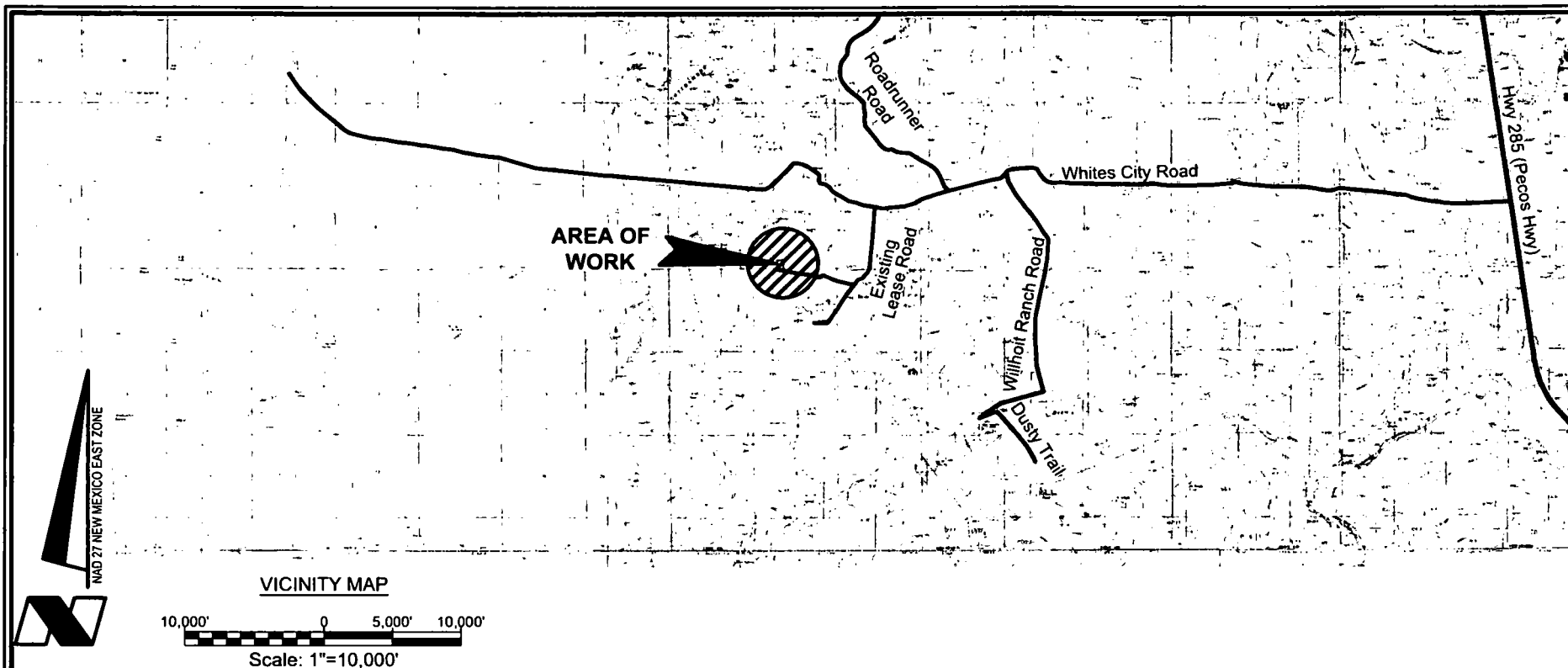
DATE: AUGUST 14, 2017

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DATE:

REVISED BY:

FILENAME: T:\2015\2153440\DWG\HH SO 17 20 FED 001_CutFill.dwg



NOTE:

1. Many states maintain information centers that establish links between those who dig (excavators) and those who own and operate underground facilities (operators). It is advisable and in most states, law, for the contractor to contact the center for assistance in locating and marking underground utilities. For guidance: New Mexico One Call www.nmonccall.org.

2. The design pad elevation recommendation is based solely on a cut and fill (1:1 ratio) balance of the pad and does not include material required for the access roads. A detailed soil test and slope stability analysis shall be performed prior to construction to ensure proper compaction and working performance of the pad under the anticipated loadings. This material balance sheet does not constitute a foundation design and C. H. Fenstermaker & Associates, L.L.C. makes no warranty to the structural integrity of the site layout as shown. Fenstermaker also makes no recommendation or warranty about the layout relative to flood hazards, erosion control, or soil stability issues. Elevations refer to the North American Vertical Datum of 1988.

3. Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards, such as fiber optic cables, PVC pipelines, etc. may exist undetected on site.

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CUT & FILL PLAT

PAGE 3 OF 3

CHEVRON U.S.A. INC.

PROPOSED PAD

HH SO 17 20 FED 001 NOS. 1H-6H WELLS

SECTION 8, T26S-R27E

EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR

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No.

DATE:

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DATE: AUGUST 14, 2017

No.

DATE:

REVISED BY:

FILENAME: T:\2015\2153440\DWG\HH SO 17 20 FED 001_CutFill.dwg



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Robert L. Lastrapes
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PROPOSED PAD		
COURSE	BEARING	DISTANCE
1	S 89° 52' 09" E	380'
2	S 00° 07' 17" W	540'
3	N 89° 51' 50" W	380'
4	N 00° 07' 30" E	540'

R 27 E

NW PAD CORNER		NE PAD CORNER	
X=	536,599 NAD 27	X=	536,979 NAD 27
Y=	382,347	Y=	382,347
ELEVATION +3251' NAVD 88		ELEVATION +3249' NAVD 88	
SW PAD CORNER		SE PAD CORNER	
X=	536,598 NAD 27	X=	536,978 NAD 27
Y=	381,808	Y=	381,807
ELEVATION +3255' NAVD 88		ELEVATION +3261' NAVD 88	

HH SO 17 20 FED 001 , NO. 1H WELL		
X=	536,858	NAD 27
Y=	382,137	
LAT.	32.050553	
LONG.	104.214368	
X=	578,042	NAD83
Y=	382,194	
LAT.	32.050675	
LONG.	104.214862	
ELEVATION +3257' NAVD 88		

T
26
S

Sec. 8

Bureau of Land Management
±4.71 Acres- Proposed Pad

PROPOSED
TEMPORARY
PAD AREA
±3.22 Acres

PROPOSED
PERMANENT
PAD AREA
±1.49 Acres

HH SO 17 20 FED 001
No. 1H Well

HH SO 17 20 FED 001
No. 2H Well

HH SO 17 20 FED 001
No. 3H Well

HH SO 17 20 FED 001
No. 4H Well

HH SO 17 20 FED 001
No. 5H Well

HH SO 17 20 FED 001
No. 6H Well

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24' X ±5,148.76'
±312.04 Rods
±2.84 Acres

Sec. 17

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Proposed Access Road (A)

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PRELIMINARY

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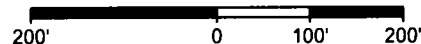
LEGEND

	Proposed Pad
	Section Line
	Centerline Access

PAGE 1 OF 2

WELL PLAT

Scale: 1" = 200'



CHEVRON U.S.A. INC.

INTERIM RECLAMATION
HH SO 17 20 FED 001 NOS. 1H-6H
SECTION 17 T26S-R27E
EDDY COUNTY, NEW MEXICO



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DRAWN BY: AMT		REVISIONS	
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: AUGUST 11, 2017	No.	DATE:	REVISED BY:
FILENAME: T:\2015\2153440\DWG\HH SO 17 20 FED 001 Reclamation.dwg			

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PAGE 2 OF 2

WELL PLAT

CHEVRON U.S.A. INC.
INTERIM RECLAMATION
HH SO 17 20 FED 001 NOS. 1H-6H
SECTION 17 T26S-R27E
EDDY COUNTY, NEW MEXICO



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DATE: AUGUST 11, 2017	No.	DATE:	REVISED BY:
FILENAME: T:\2015\2153440\DWG\HH SO 17 20 FED 001 Reclamation.dwg			

APD Surface Use Plan of Operations

This Surface Use Plan of Operations has been designed to be reviewed in conjunction with Hayhurst Development Area (HDA) Master Development Plan

HDA Master Development Plan Reference Table

The contents referenced below apply to all HDA APD's

Existing Roads	MDP SUPO Page 1
Construction Materials	MDP SUPO Page 6
Methods for Handling Waste	MDP SUPO Page 6
Reclamation Objectives	MDP SUPO Page 6-8
Final Surface Reclamation	MDP SUPO Page 6-8

Driving Directions

- Driving Directions – From Malaga, New Mexico. The location is approximately 11.5 miles from the nearest town, which is Malaga, New Mexico. From Malaga, proceed South on Highway 285 approximately 11.5 miles and turn right (West) onto White City Rd and go approximately 7.5 miles on White City Road until the road reaches an intersection with a permanent sign reading "Chevron Access". Turn left onto this and travel 1 mile, then right and travel for another .5 miles to the well location.

New or Reconstructed Access Roads – (MDP SUPO Pg. 1)

- There will be 107' of new road construction for this proposal.
- Ditches: See MDP; Per BLM Gold Book
- Culverts: See MDP; Per BLM Gold Book
- Road Cuts: See MDP; Per BLM Gold Book

Location of Existing Wells

- 1-Mile radius map submitted

Location of Existing and/or Proposed Production Facilities (MDP SUP Pg. 2).

- Facilities: Existing production facilities are located in the SW corner of Sec. 9, T26S-R27E where oil and gas sales will take place. (Detail Submitted)
 - The facilities and frac pond are in Sec. 9, T26S-R27E
 - Gas purchaser pipeline is in place at the tank battery.
- Pipelines: See Detail
 - Pipelines Include (to be run in existing 80' ROW):
 - 4,943' of Flowlines carrying production (buried)
 - 107' Temporary Water Line (Drilling and Completions)
 - 107' Gas Lift Line carrying pressurized gas (buried)
 - This line to connect to riser in ROW
 - A ROW will be applied for through the State and BLM.
 - All construction activity will be confined to the approved ROW.
 - Pipeline will run parallel to the road and will stay within approved ROW.

Location and Types of Water Supply (MDP SUPO Pg. 5)

- Pond in SW4/SW4 Section 9, T26S-R27E will be utilized for fresh water.
- Fresh water will be obtained from a private water source.
- A temporary surface laid lay-flat line will be utilized for drilling and completions

Construction Materials (MDP SUPO Pg. 6)

- CALICHE WILL BE SOURCED FROM A CHEVRON OPERATED NMSLO PIT IN S2 NW4 SECTION 16 T26S R27E
- AN ALTERNATE PRIVATE PIT IN SECTION 13 T24S R27E, EDDY COUNTY NM.
-

Well Site Layout

- Well Plat
 - Exterior well pad dimensions are 540' x 380'
 - Interior well pad dimensions from point of entry (well head) of the well are N-335', S-205', E-120', W-260'. Total disturbance area needed for construction of well pad will be approximately 4.71 acres
 - Topsoil placement is on the west where interim reclamation is planned to be completed upon completion of well and evaluation of best management practices.
 - Cut and fill: will be minimal.
- Rig Layout submitted

CHEVRON U.S.A. Inc
HH SO 17 20 FED 001 6H
NMNM 118108
SECTION 8, T26S-R27E
SHL 205' FSL & 1872' FWL

SECTION 20, T26S, R27E
BHL 280' FSL & 330' FWL

Plans for Surface Reclamation (MDP SUPA Pg. 8)

Interim Reclamation Procedures

- Reclaimed pad size: 200' x 325'
- See Exhibit for reclaimed pad layout, topsoil location & erosion control features

Surface Ownership

- BLM Surface
 - Surface Tenant – Phillip Stell
- **Nearest Post Office:** Malaga Post Office; 11.4 Miles north

Other Information

- On-site performed by BLM NRS: Paul Murphy 10/18/2016
- Cultural report attached: Yes Participating Agreement attached: N/A

Chevron Representatives

Primary point of contact:
Kevin Dickerson
Kevin.dickerson@chevron.com
M- 432-250-4489

CHEVRON U.S.A. Inc

HH SO 17 20 FED 001 6H

NMNM 118108

SECTION 8, T26S-R27E

SHL 205' FSL & 1872' FWL

SECTION 20, T26S, R27E

BHL 280' FSL & 330' FWL

Chevron Functional Contacts

Project Manager Name: Justin Freeman Address: 1400 Smith Street Houston, TX 77002 Phone: (713) 372-2159 Email: FreemJ@chevron.com	Drilling Engineer Name: Roderick Milligan Address: 1400 Smith Street Houston, TX 77002 Phone: (281) 413-9794 Email: RoderickMilligan@chevron.com
Surface Land Representative Name: Kevin Dickerson Address: 6301 Deauville Blvd Midland, TX 79706 Phone: (432) 687-7104 Email: Kevin.Dickerson@chevron.com	Facility Lead Name: Angel Bermea Address: 6301 Deauville Blvd Midland, TX 79706 Phone: (432) 687-7804 Email: angel.bermea@chevron.com
Geologist Name: Frank Karmanocky Address: 6301 Deauville Blvd Midland, TX 79706 Phone: (432) 687-7361 Email: fkarmanocky@chevron.com	Regulatory Specialist Dorian Fuentes Address: 6301 Deauville Blvd Midland, TX 79706 Office: (432) 687-7631 Email: dorian.k.fuentes@chevron.com



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

PWD Data Report

07/09/2018

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Injection well name:

Injection well API number:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

Bond Info Data Report

07/09/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: CA0329

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: