

Carlsbad Field Office OCD Artesia

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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		8. Lease Name and Well No. HH SO 8 5 FED 003 1H 322146
3b. Phone No. (include area code) (432)687-7866		9. API Well No. 30-015-45115
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface NENW / 629 FNL / 2308 FWL / LAT 32.048034 / LONG -104.213421 At proposed prod. zone NWNE / 280 FNL / 2178 FEL / LAT 32.078224 / LONG -104.210888		10. Field and Pool, or Exploratory PURPLE SAGE / WOLFCAMP, (GAS)
14. Distance in miles and direction from nearest town or post office* 11.5 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 17 / T26S / R27E / NMP
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 9294 feet / 19549 feet	20. BLM/BIA Bond No. on file FED: CA0329
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3267 feet	22. Approximate date work will start* 11/01/2017	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:

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

25. Signature (Electronic Submission)	Name (Printed/Typed) Laura Becerra / Ph: (432)687-7665	Date 07/12/2017
Title Permitting Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 07/13/2018
Title Assistant Field Manager Lands & Minerals		

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: 07/13/2018

NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 17 2018

RECEIVED

RW
7-17-18

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: NENW / 629 FNL / 2308 FWL / TWSP: 26S / RANGE: 27E / SECTION: 17 / LAT: 32.048034 / LONG: -104.213421 (TVD: 0 feet, MD: 0 feet)
PPP: SWSE / 330 FSL / 2178 FEL / TWSP: 26S / RANGE: 27E / SECTION: 8 / LAT: 32.050664 / LONG: -104.21079 (TVD: 9294 feet, MD: 19549 feet)
BHL: NWNE / 280 FNL / 2178 FEL / TWSP: 26S / RANGE: 27E / SECTION: 5 / LAT: 32.078224 / LONG: -104.210888 (TVD: 9294 feet, MD: 19549 feet)

BLM Point of Contact

Name: Judith Yeager

Title: Legal Instruments Examiner

Phone: 5752345936

Email: jyeager@blm.gov

Review and Appeal Rights

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

JUL 17 2018

**PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL**

RECEIVED

OPERATOR'S NAME:	Chevron USA Incorporated
LEASE NO.:	NMNM100549
WELL NAME & NO.:	HH SO 8 5 Fed 003 1H
SURFACE HOLE FOOTAGE:	629'/N & 2308'/W
BOTTOM HOLE FOOTAGE:	280'/N & 2178'/E
LOCATION:	Section 17, T.26 S., R.27 E., NMPM
COUNTY:	Eddy County, 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 casing with fluid while running intermediate casing to maintain collapse safety factor.

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is: Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed 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 9%.**
- 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)

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

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) 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 071218

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

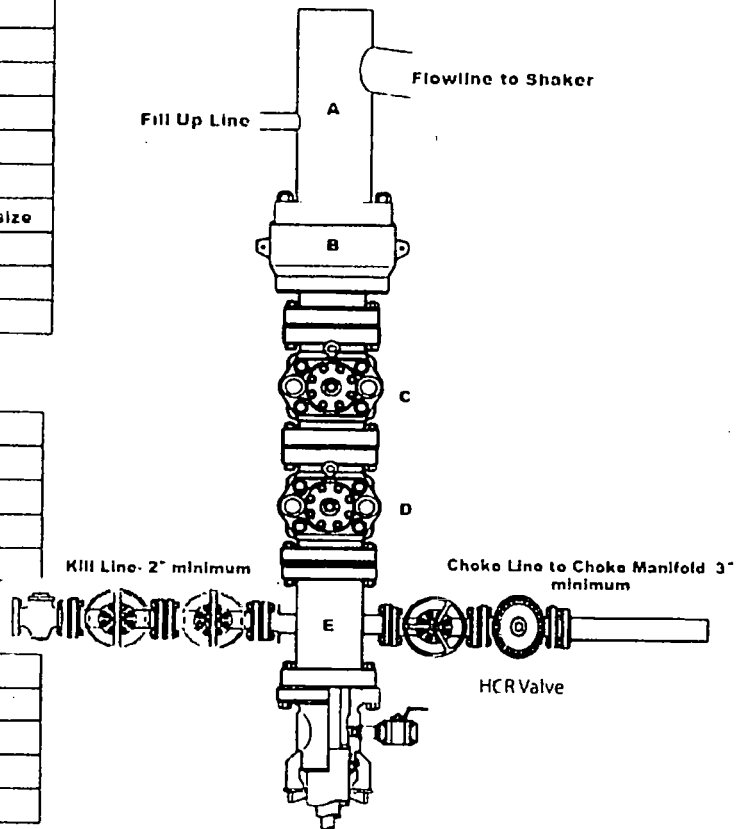
SIZE PRESSURE DESCRIPTION

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: _____

Approval Date: 07/13/2018

BOPE Testing

Minimum Requirements

Closing Unit and Accumulator Checklist

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

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

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

- ☐ Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if used), close all rams, close the annular preventer, and retain a minimum of 200 psi above the maximum acceptable precharge pressure (see table above) on the closing manifold without the use of the closing pumps. This test will be performed with test pressure recorded and kept on location through the end of the well.
- ☐ Accumulator fluid reservoir will be double the usable fluid volume of the accumulator system capacity. Fluid level will be maintained at manufacturer's recommendations. Usable fluid volume will be recorded. 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: _____

Approval Date: 07/13/2018

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 17 2018

RECEIVED

OPERATOR'S NAME:	Chevron USA Incorporated
LEASE NO.:	NMNM100549
WELL NAME & NO.:	HH SO 8 5 Fed 003 1H
SURFACE HOLE FOOTAGE:	629'/N & 2308'/W
BOTTOM HOLE FOOTAGE:	280'/N & 2178'/E
LOCATION:	Section 17, T.26 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

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:

1. The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
2. The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
3. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
4. The topsoil stockpile shall be located outside the bermed well pad.
5. Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
6. No storm drains, tubing or openings shall be placed in the berm.
7. 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.
8. 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.
9. 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.)
10. 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, siting 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.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

VI. CONSTRUCTION

• 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.

• 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.

- **CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

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

- **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.

- **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.

- **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.)

- **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

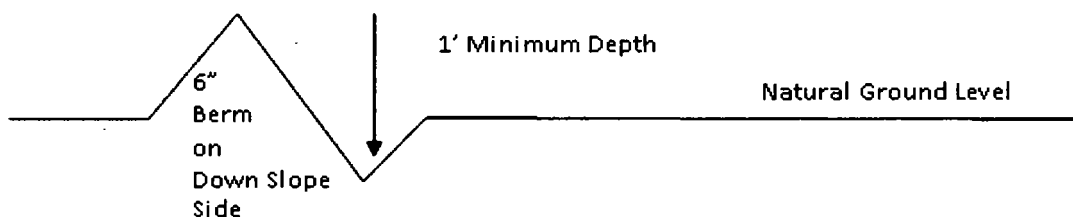
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing and insloping, 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:

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

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

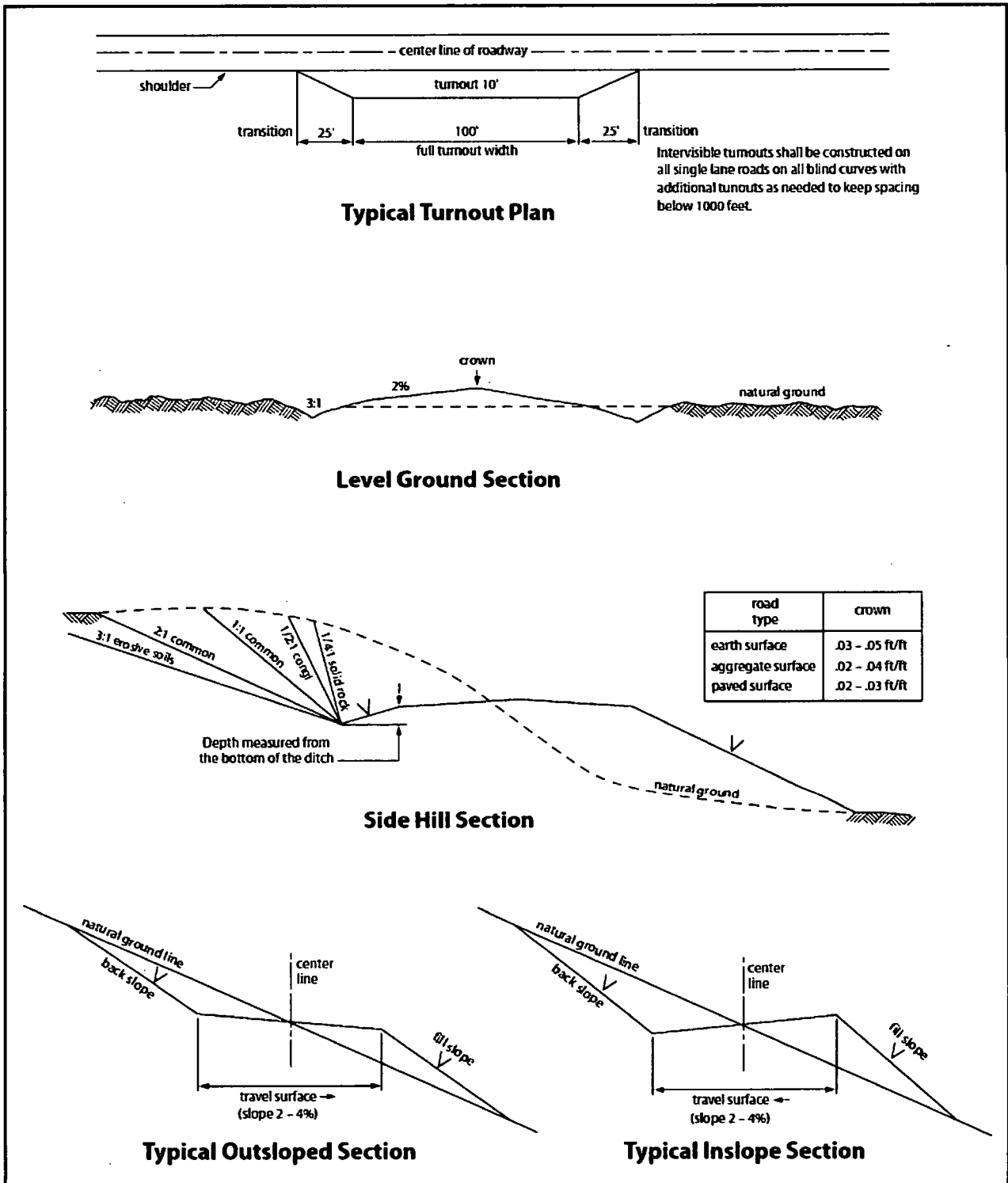


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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:

- Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;
- 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;
- 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:

1. 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.*)
2. 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.)

3. 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:

1. 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.
2. 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

07/16/2018

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: Laura Becerra

Signed on: 06/27/2017

Title: Permitting Specialist

Street Address: 6301 Deauville Blvd., S2211

City: Midland

State: TX

Zip: 79706

Phone: (432)687-7665

Email address: LBecerra@Chevron.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



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

Application Data Report

07/16/2018

APD ID: 10400014948

Submission Date: 07/12/2017

Operator Name: CHEVRON USA INCORPORATED

Highlighted data
reflects the most
recent changes

Well Name: HH SO 8 5 FED 003

Well Number: 1H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400014948

Tie to previous NOS? 10400009705

Submission Date: 07/12/2017

BLM Office: CARLSBAD

User: Laura Becerra

Title: Permitting Specialist

Federal/Indian APD: FED

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

Lease number: NMNMT18108

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 8 5 FED 003

Well Number: 1H

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 8 5 FED 003

Well Number: 1H

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 SONumber: 1H 2H 3H 4H 5H 6H
8 5 FED 003

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_8_5_FED_003_1H_C_102_06-27-2017.pdf

Well work start Date: 11/01/2017

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	629	FNL	230 8	FWL	26S	27E	17	Aliquot NENW 4	32.04803 4	- 104.2134 21	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 100549	326 7	0	0
KOP Leg #1	629	FNL	230 8	FWL	26S	27E	17	Aliquot NENW 4	32.04803 4	- 104.2134 21	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 100549	326 7	0	0
PPP Leg #1	330	FSL	217 8	FEL	26S	27E	8	Aliquot SWSE 4	32.05066 4	- 104.2107 9	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 118108	- 602 7	195 49	929 4

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	330	FNL	217 8	FEL	26S	27E	5	Aliquot NWNE	32.07810 7	- 104.2108 89	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 113399	- 602 7	195 49	929 4
BHL Leg #1	280	FNL	217 8	FEL	26S	27E	5	Aliquot NWNE	32.07822 4	- 104.2108 88	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 113399	- 602 7	195 49	929 4

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

Choke Diagram Attachment:

HH_SO_8_5_FED_003_1H_Choke_Diagram_06-27-2017.pdf

BOP Diagram Attachment:

10K_UHS_Wellhead_schematics_20180713063138.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	-5733	-6183	450	K-55	54.5	STC	5.11	1.82	DRY	3.97	DRY	2.31
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	9015	0	9015	-5733	-14748	9015	L-80	43.5	OTHER - TXP	1.34	2.9	DRY	2.22	DRY	1.79
3	PRODUCTION	8.5	5.5	NEW	API	N	0	19549	0	19549	-5733	-24452	19549	P-110	20	OTHER - TXP	1.66	1.26	DRY	1.31	DRY	2.54

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HH_SO_8_5_FED_003_1H_9pt_plan_06-27-2017.pdf

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

HH_SO_8_5_FED_003_1H_9.625_TXP_06-27-2017.pdf

Casing Design Assumptions and Worksheet(s):

HH_SO_8_5_FED_003_1H_9.625_TXP_06-27-2017.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

HH_SO_8_5_FED_003_1H_P110_TXP_06-27-2017.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	C	50/50 Poz Class C + Antifoam, Extender, Salt, Retarder
INTERMEDIATE	Tail		1100	2100	235	1.33	14.8	6.37	0	C	Class C + Antifoam, Retarder, Viscosifier
INTERMEDIATE	Lead	2100	2100	8015	838	2.43	11.9	13.76	10	H	50/50 Poz Class H + Extender, Antifoam,

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Retarder, Salt, Viscosifier
INTERMEDIATE	Tail		8015	9015	285	1.21	15.6	5.54	10	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	1954 9	2389	1.2	15.6	5.3	10	H	Class 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 mudding up to determine, as applicable density, viscosity, gel strength, diltration, 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

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	8.3	8.7							
450	9015	OIL-BASED MUD	9	9.5							

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

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
9015	1954 9	OIL-BASED MUD	10	13							The mud weight 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 13.0 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

Logs

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

Type: LWD Logs: MWD Gamma Interval: Int. & Prod. Hole Timing: While drilling Vendor: TBD

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

GR,MWD

Coring operation description for the well:

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

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6283

Anticipated Surface Pressure: 4303

Anticipated Bottom Hole Temperature(F): 150

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

HH_SO_8_5_FED_003_1H_H2S_06-27-2017.pdf

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

HH_SO_8_5_FED_003_1H_AC_Report_06-27-2017.pdf

HH_SO_8_5_FED_003_1H_Directional_Plan_06-27-2017.pdf

HH_SO_8_5_FED_003_1H_Rig_Layout_06-27-2017.pdf

Other proposed operations facets description:

The FTP on the Drilling plan attached reflects the FTP on the C-102.

Other proposed operations facets attachment:

Other Variance attachment:

CHOKE MANIFOLD SCHEMATIC

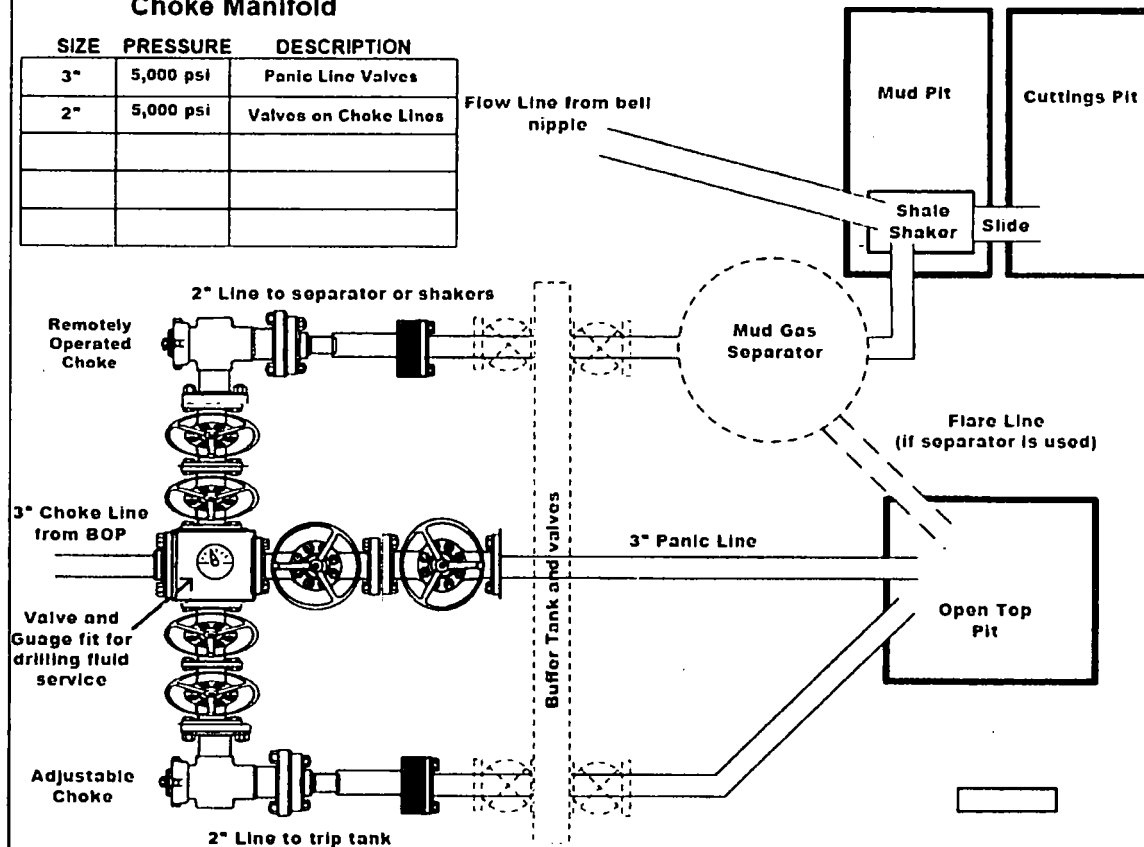
Minimum Requirements

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.

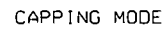
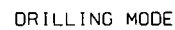
- ☐ The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum 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 toe blocks or are targeted with running tool, 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: _____



6650 PSI UH-S
CHEVRON
20 X 13 3/8 X 9 5/8 X 5 1/2

PRIVATE AND CONFIDENTIAL		DISPOSITION	PAGE NO.	DATE	
THIS DOCUMENT CONTAINS NEITHER RECOMMENDATIONS NOR CONCLUSIONS OF THE NATIONAL BUREAU OF STANDARDS. IT IS THE PROPERTY OF THE NATIONAL BUREAU OF STANDARDS AND IS LOANED TO YOUR ORGANIZATION; IT AND ITS CONTENTS ARE NOT TO BE DISTRIBUTED OUTSIDE YOUR ORGANIZATION. THIS DOCUMENT CONTAINS NEITHER RECOMMENDATIONS NOR CONCLUSIONS OF THE NATIONAL BUREAU OF STANDARDS. IT IS THE PROPERTY OF THE NATIONAL BUREAU OF STANDARDS AND IS LOANED TO YOUR ORGANIZATION; IT AND ITS CONTENTS ARE NOT TO BE DISTRIBUTED OUTSIDE YOUR ORGANIZATION.		SURFACE WELLHEAD LAT/UT, LM-5 25 X 13 5/8 X 5 5/8 X 5 1/2 13 5/8-INCH X 11-INCH X 1 1/16-INCH, DIE-CAST ALUMINUM	1. PHASE REVIEW DESIGN REVIEW DESIGN REVIEW DESIGN REVIEW DESIGN	03-07-17 03-07-17 03-07-17 03-07-17 03-07-17	
THIS DOCUMENT CONTAINS NEITHER RECOMMENDATIONS NOR CONCLUSIONS OF THE NATIONAL BUREAU OF STANDARDS. IT IS THE PROPERTY OF THE NATIONAL BUREAU OF STANDARDS AND IS LOANED TO YOUR ORGANIZATION; IT AND ITS CONTENTS ARE NOT TO BE DISTRIBUTED OUTSIDE YOUR ORGANIZATION. THIS DOCUMENT CONTAINS NEITHER RECOMMENDATIONS NOR CONCLUSIONS OF THE NATIONAL BUREAU OF STANDARDS. IT IS THE PROPERTY OF THE NATIONAL BUREAU OF STANDARDS AND IS LOANED TO YOUR ORGANIZATION; IT AND ITS CONTENTS ARE NOT TO BE DISTRIBUTED OUTSIDE YOUR ORGANIZATION.			APPROVED BY: J. GARZA	03-07-17 03-07-17	1/1 1/2

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

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA TVD	KBTVD	MG
Cenozoic		305	
Laramie		2995	
Bed		2310	
Cherty		2008	
Brachy		4450	
Bone Spring/Avalon		8299	
First Bone Spring Sand		8888	
First Bone Spring Shale		8814	
Second Bone Spring Sand		7821	
Hartley Sand		8123	
Third Bone Spring Sand		8617	
Wolfcamp A		9294	
Laramie TVD Wolfcamp A		9284	882550

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
Desired Expected Base of Fresh Water		
Water	Gravel	450
Water	Cherry Canyon	3208
Oil/Gas	Brachy Canyon	4450
Oil/Gas	Bone Spring Limestone	8888
Oil/Gas	First Bone Spring Shale	8814
Oil/Gas	Second Bone Spring Sand	7821
Oil/Gas	Hartley Sand	8123
Oil/Gas	Wolfcamp A	9294

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

3. BOP EQUIPMENT

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

Chevron requests a variance to use a FMC Technologies LH-2 Mudbox wellhead, which will be run through the rig floor on surface casing. BOPE will be tripped up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC Technologies and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submission.

4. CASING PROGRAM

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	450'	12-1/2"	13-3/8"	84.5 #	K-55	STC	New
Intermediate	0'	9,015'	12-1/4"	9-5/8"	43.5 #	L-80	7XP	New
Production	0'	10,540'	8-1/2"	5-1/2"	20.9 #	P-110	7XP	New

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

Surface Casing: 450'

Intermediate Casing: 9015'

Production Casing: 10540'

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Int-Axial
Surface	1.82	5.11	3.87	2.31
Intermediate	2.8	1.34	1.78	2.22
Production	1.28	1.68	2.54	1.41

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 Case - next section headrest mud in csg			
Displace to Gas - Surf Csg	X		
P external Water			
P internal - Dry Gas from Next Csg Point			
Frac at Shoe - Gas to Surf - Int Csg		X	
P external Water			
P internal - Dry Gas - 15 pop Frac Gradient			
Stimulation (Frac) Pressure - Prod Csg			X
P external Water			
P internal - Maximum pressure at nearest cracked burst			
Tubing loss - Prod Csg (packer at KOP)			X
P external Water			
P internal - Leak After below surf 8.7 pop packer burst			
Collapse Design			
Full Evacuation			
P external Water gradient in cement, mud above TOC	X	X	X
P internal - none			
Cementing - Surf, Int, Prod Csg	X	X	X
P external Wet cement			
P internal - water			
Tension Design			
Load & pressure	X	X	X

5. CEMENTING PROGRAM

Slurry	Type	Cement Top	Cement Bottom	Weight (lbm)	Yield (bbl/ft)	NE excess (bbl/ft)	Backs (bbl/ft)	Water (gal/bbl)
Surface	Class C	0'	450'	14.8	1.33	26'	1.00'	8.37
Intermediate	50-50 Poz. Class C + Antifoam, Extender, Salt, Retarder	0'	1,100'	11.8	2.43	10'	2.00'	14.21
Stage 2 Lead	Class C + Antifoam, Retarder, Viscosifier	1,100'	2,100'	14.8	1.33	0'	2.00'	8.37
Stage 2 Tail								
DV Tool								
Stage 1 Lead	50-50 Poz. Class C + Extender, Antifoam, Retarder, Salt, Viscosifier	2,100'	8,015'	11.8	2.43	10'	1.00'	13.78
Stage 1 Tail	Class H + Retarder, Extender, Dispersant	8,015'	9,015'	15.8	1.21	10'	2.00'	5.54
Production								
Lead	50-50 Poz. Class H + Extender, Antifoam, Dispersant, Retarder	7,015'	8,015'	14.5	1.21	10'	2.00'	5.54
Tail	Class H + Viscosifier, Antifoam, Dispersant, Fluid Loss, Retarder, Expanding Agent	8,015'	19,540'	15.8	1.2	10'	2.00'	5.30

6. MUD PROGRAM

From	To	Type	Weight	F. Vls	Filtrate
0'	450'	Steel Mud	8.3 - 8.7	32 - 34	NC - NC
450'	9015'	OBM	8.8 - 9.3	50 - 100	5.5 - 10
9015'	10540'	OBM	10.0 - 13.0	50 - 100	5.5 - 10

7. TESTING, LOGGING, AND CORING

TYPE	Log	Interval	Interval	Interval
Mudlog	2 min mudlog	Int. Csg to TD	Dr. Hole to Int. Csg	Yarder
LVDT	NWD Gamma	Int. and Prod. Hole	Whole Dr. Hole	TD

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

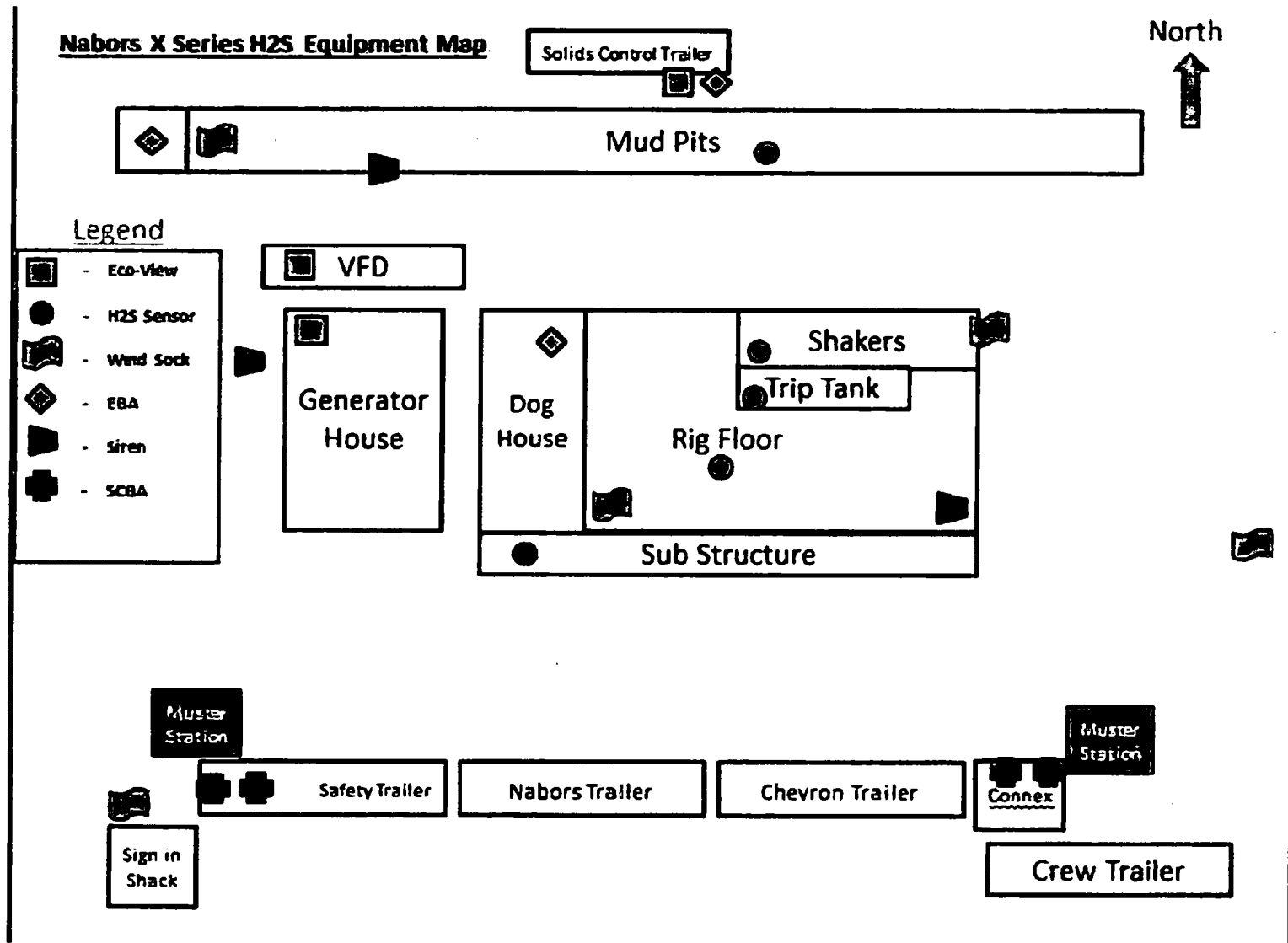
In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

- 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





NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 17 2018

RECEIVED

Chevron

Eddy County, NM (NAD27 NME)

HH SO 8 5 Fed 003

1H

OH

Plan 1 06-16-17

Anticollision Report

16 June, 2017





Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Reference	Plan 1 06-16-17		
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** 6/15/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	19,549.23	Plan 1 06-16-17 (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 8 5 Fed 003						
2H - OH - Plan 1 06-16-17	600.00	600.00	24.74	18.97	4.292	CC
2H - OH - Plan 1 06-16-17	700.00	699.15	25.68	18.85	3.760	ES
2H - OH - Plan 1 06-16-17	19,549.38	19,416.71	949.53	473.44	1.994	SF
3H - OH - Plan 1 06-16-17	600.00	599.00	49.84	44.08	8.654	CC
3H - OH - Plan 1 06-16-17	700.00	697.39	50.67	43.85	7.430	ES
3H - OH - Plan 1 06-16-17	19,549.38	20,040.61	817.29	386.98	1.899	SF
4H - OH - Plan 1 06-16-17	1,902.09	1,894.95	58.17	37.66	2.835	CC
4H - OH - Plan 1 06-16-17	2,300.00	2,292.50	60.58	35.74	2.439	ES
4H - OH - Plan 1 06-16-17	19,549.38	20,144.62	493.35	212.59	1.757	SF
5H - OH - Plan 1 06-16-17	600.00	598.00	99.67	93.92	17.324	CC
5H - OH - Plan 1 06-16-17	700.00	695.71	100.04	93.24	14.697	ES
5H - OH - Plan 1 06-16-17	19,549.38	20,332.46	1,337.18	914.02	3.160	SF
6H - OH - Plan 1 06-16-17	2,042.60	2,031.79	104.93	82.58	4.694	CC
6H - OH - Plan 1 06-16-17	2,300.00	2,288.66	106.21	80.82	4.183	ES
6H - OH - Plan 1 06-16-17	8,800.00	8,751.06	255.58	161.59	2.719	SF
HH SO 8 P2						
14HD - OH / Job #61221 - Plan 3 05-10-17	600.00	580.00	1,385.93	1,380.27	245.007	CC, ES
14HD - OH / Job #61221 - Plan 3 05-10-17	9,400.00	9,127.83	2,022.85	1,923.16	20.292	SF
14HD - ST01 / Job #61221 - Plan 4 06-09-17	600.00	580.00	1,385.93	1,380.27	245.007	CC, ES
14HD - ST01 / Job #61221 - Plan 4 06-09-17	19,549.38	20,425.84	2,094.99	1,641.40	4.619	SF
22HA - OH / Job #61217 - Plan 4 06-09-17	998.68	1,122.63	1,369.43	1,360.68	156.611	CC
22HA - OH / Job #61217 - Plan 4 06-09-17	1,000.00	1,123.79	1,369.43	1,360.67	156.380	ES
22HA - OH / Job #61217 - Plan 4 06-09-17	19,549.38	19,476.26	1,876.53	1,407.32	3.999	SF
22HA - OH / Job #61217 - Surveys (Patterson 815)	998.68	1,122.63	1,369.43	1,360.68	156.611	CC
22HA - OH / Job #61217 - Surveys (Patterson 815)	1,000.00	1,123.79	1,369.43	1,360.67	156.380	ES
22HA - OH / Job #61217 - Surveys (Patterson 815)	9,000.00	8,739.00	1,889.43	1,797.39	20.527	SF
6HC - OH / Job #61219 - Plan 3 06-09-17	600.00	578.00	1,398.65	1,393.00	247.727	CC
6HC - OH / Job #61219 - Plan 3 06-09-17	19,549.38	20,068.49	1,593.23	1,130.41	3.442	ES, SF

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

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 8 P5						
11H - OH - Plan 1 11-01-16	818.35	808.14	1,059.29	1,051.24	131.729	CC
11H - OH - Plan 1 11-01-16	1,300.00	1,284.07	1,061.72	1,048.38	79.566	ES
11H - OH - Plan 1 11-01-16	19,549.38	18,681.04	1,879.28	1,422.50	4.114	SF
19H - OH - Plan 2 11-17-16	600.00	591.00	1,014.22	1,008.51	177.441	CC
19H - OH - Plan 2 11-17-16	1,100.00	1,088.47	1,015.72	1,004.61	91.471	ES
19H - OH - Plan 2 11-17-16	19,549.38	19,347.95	1,581.29	1,129.77	3.502	SF
27H - OH - Plan 2 11-17-16	600.00	591.00	969.61	963.89	169.635	CC
27H - OH - Plan 2 11-17-16	1,000.00	989.70	971.00	961.00	97.046	ES
27H - OH - Plan 2 11-17-16	19,549.38	19,881.64	2,894.64	2,444.76	6.434	SF
28H - OH - Plan 2 11-17-16	600.00	591.00	947.50	941.78	165.768	CC
28H - OH - Plan 2 11-17-16	1,000.00	989.70	949.24	939.24	94.873	ES
28H - OH - Plan 2 11-17-16	19,549.38	19,867.04	2,109.92	1,671.38	4.811	SF

Offset Design													HH SO 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17		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			
0.00	0.00	0.00	0.00	0.00	0.00	0.65	24.74	0.28	24.74							
100.00	100.00	100.00	100.00	0.19	0.19	0.65	24.74	0.28	24.74	24.35	0.39	63.897				
200.00	200.00	200.00	200.00	0.73	0.73	0.65	24.74	0.28	24.74	23.28	1.46	16.914				
300.00	300.00	300.00	300.00	1.27	1.27	0.65	24.74	0.28	24.74	22.20	2.54	9.747				
400.00	400.00	400.00	400.00	1.81	1.81	0.65	24.74	0.28	24.74	21.12	3.61	6.846				
500.00	500.00	500.00	500.00	2.34	2.34	0.65	24.74	0.28	24.74	20.05	4.69	5.276				
600.00	600.00	600.00	600.00	2.88	2.88	0.65	24.74	0.28	24.74	18.97	5.76	4.292	CC			
700.00	699.98	699.15	699.13	3.41	3.42	-68.74	26.34	-0.32	25.68	18.85	6.83	3.760	ES			
800.00	799.84	797.97	797.81	3.94	3.95	-80.96	31.14	-2.12	29.44	21.55	7.89	3.731				
900.00	899.45	896.14	895.61	4.48	4.48	-94.72	39.05	-5.09	37.81	28.85	8.96	4.220				
1,000.00	998.70	994.90	993.84	5.03	5.02	-106.34	48.72	-8.71	50.22	40.18	10.04	5.002				
1,100.00	1,097.47	1,093.27	1,091.66	5.60	5.56	-115.88	58.34	-12.33	65.35	54.23	11.12	5.877				
1,200.00	1,195.78	1,191.21	1,189.07	6.19	6.11	-123.39	67.92	-15.92	83.07	70.87	12.20	6.808				
1,300.00	1,294.07	1,289.12	1,286.44	6.79	6.66	-128.36	77.50	-19.52	101.81	88.52	13.29	7.660				
1,400.00	1,392.36	1,387.03	1,383.82	7.40	7.21	-131.77	87.08	-23.11	121.06	106.67	14.39	8.415				
1,500.00	1,490.65	1,484.95	1,481.20	8.02	7.76	-134.25	96.66	-26.70	140.61	125.13	15.49	9.079				
1,600.00	1,588.93	1,582.86	1,578.57	8.64	8.31	-136.12	106.24	-30.30	160.36	143.77	16.59	9.664				
1,700.00	1,687.22	1,680.77	1,675.95	9.27	8.87	-137.57	115.82	-33.89	180.23	162.53	17.70	10.181				
1,800.00	1,785.51	1,778.69	1,773.33	9.90	9.42	-138.74	125.41	-37.49	200.20	181.38	18.82	10.639				
1,900.00	1,883.80	1,876.60	1,870.71	10.54	9.98	-139.70	134.99	-41.08	220.22	200.29	19.93	11.048				
2,000.00	1,982.09	1,974.51	1,968.08	11.17	10.53	-140.50	144.57	-44.68	240.30	219.25	21.05	11.415				
2,100.00	2,080.37	2,072.43	2,065.46	11.81	11.09	-141.17	154.15	-48.27	260.42	238.25	22.17	11.746				
2,200.00	2,178.66	2,170.34	2,162.84	12.45	11.65	-141.75	163.73	-51.87	280.56	257.27	23.29	12.045				
2,300.00	2,276.95	2,268.25	2,260.21	13.10	12.21	-142.25	173.31	-55.46	300.73	276.32	24.42	12.316				
2,400.00	2,375.24	2,366.17	2,357.59	13.74	12.77	-142.69	182.89	-59.05	320.92	295.38	25.54	12.564				
2,500.00	2,473.52	2,464.08	2,454.97	14.38	13.32	-143.07	192.47	-62.65	341.13	314.46	26.67	12.791				
2,600.00	2,571.81	2,561.99	2,552.35	15.03	13.88	-143.42	202.05	-66.24	361.34	333.55	27.80	13.000				
2,700.00	2,670.10	2,659.91	2,649.72	15.68	14.44	-143.72	211.63	-69.84	381.57	352.65	28.92	13.193				
2,800.00	2,768.39	2,757.82	2,747.10	16.32	15.00	-144.00	221.21	-73.43	401.81	371.76	30.05	13.371				
2,900.00	2,866.67	2,855.73	2,844.48	16.97	15.56	-144.25	230.79	-77.03	422.06	390.88	31.18	13.536				
3,000.00	2,964.96	2,953.65	2,941.85	17.62	16.12	-144.47	240.37	-80.62	442.31	410.00	32.31	13.689				

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17													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)					
3,100.00	3,063.25	3,051.56	3,039.23	18.27	16.68	-144.68	249.95	-84.22	462.57	429.13	33.44	13.832	
3,200.00	3,161.54	3,149.47	3,136.61	18.92	17.24	-144.87	259.53	-87.81	482.83	448.26	34.57	13.966	
3,300.00	3,259.83	3,247.39	3,233.99	19.57	17.80	-145.04	269.11	-91.40	503.10	467.40	35.70	14.091	
3,400.00	3,358.11	3,345.30	3,331.36	20.22	18.36	-145.20	278.69	-95.00	523.38	486.54	36.84	14.208	
3,500.00	3,456.40	3,443.21	3,428.74	20.87	18.92	-145.35	288.27	-98.59	543.65	505.68	37.97	14.318	
3,600.00	3,554.69	3,541.13	3,526.12	21.52	19.48	-145.49	297.85	-102.19	563.93	524.83	39.10	14.422	
3,700.00	3,652.98	3,639.04	3,623.49	22.17	20.04	-145.62	307.43	-105.78	584.22	543.98	40.23	14.520	
3,800.00	3,751.26	3,736.95	3,720.87	22.82	20.60	-145.74	317.01	-109.38	604.50	563.13	41.37	14.613	
3,900.00	3,849.55	3,834.87	3,818.25	23.48	21.16	-145.85	326.59	-112.97	624.79	582.29	42.50	14.700	
4,000.00	3,947.84	3,932.78	3,915.63	24.13	21.73	-145.95	336.17	-116.57	645.08	601.44	43.64	14.783	
4,100.00	4,046.13	4,030.69	4,013.00	24.78	22.29	-146.05	345.75	-120.16	665.37	620.60	44.77	14.862	
4,200.00	4,144.42	4,128.61	4,110.38	25.43	22.85	-146.14	355.33	-123.76	685.67	639.76	45.90	14.937	
4,300.00	4,242.70	4,226.52	4,207.76	26.09	23.41	-146.23	364.91	-127.35	705.96	658.92	47.04	15.008	
4,400.00	4,340.99	4,324.43	4,305.14	26.74	23.97	-146.31	374.50	-130.94	726.26	678.08	48.17	15.076	
4,500.00	4,439.28	4,433.84	4,414.09	27.39	24.58	-146.51	383.77	-134.42	745.92	696.56	49.36	15.112	
4,600.00	4,537.57	4,545.86	4,525.94	28.05	25.19	-146.98	389.26	-136.48	763.83	713.30	50.53	15.116	
4,700.00	4,635.85	4,655.79	4,635.85	28.70	25.76	-147.70	390.71	-137.03	780.05	728.38	51.67	15.098	
4,800.00	4,734.14	4,754.07	4,734.14	29.35	26.26	-148.41	390.71	-137.03	795.76	743.03	52.73	15.091	
4,900.00	4,832.43	4,852.36	4,832.43	30.01	26.77	-149.08	390.71	-137.03	811.58	757.79	53.80	15.086	
5,000.00	4,930.72	4,950.65	4,930.72	30.66	27.27	-149.74	390.71	-137.03	827.52	772.65	54.86	15.083	
5,100.00	5,029.01	5,048.94	5,029.01	31.31	27.77	-150.37	390.71	-137.03	843.55	787.62	55.93	15.082	
5,200.00	5,127.29	5,147.23	5,127.29	31.97	28.28	-150.97	390.71	-137.03	859.68	802.68	57.00	15.083	
5,300.00	5,225.58	5,245.51	5,225.58	32.62	28.78	-151.55	390.71	-137.03	875.90	817.84	58.06	15.085	
5,400.00	5,323.87	5,343.80	5,323.87	33.27	29.29	-152.11	390.71	-137.03	892.21	833.07	59.13	15.088	
5,500.00	5,422.16	5,442.09	5,422.16	33.93	29.80	-152.66	390.71	-137.03	908.59	848.39	60.20	15.093	
5,600.00	5,520.52	5,540.45	5,520.52	34.58	30.31	-153.24	390.71	-137.03	924.68	863.33	61.35	15.071	
5,700.00	5,619.38	5,639.31	5,619.38	35.19	30.82	-153.77	390.71	-137.03	938.15	875.60	62.55	14.998	
5,800.00	5,718.71	5,738.64	5,718.71	35.77	31.33	-154.17	390.71	-137.03	948.55	884.86	63.69	14.894	
5,900.00	5,818.37	5,838.31	5,818.37	36.31	31.85	-154.44	390.71	-137.03	955.83	891.08	64.76	14.760	
6,000.00	5,918.26	5,938.20	5,918.26	36.82	32.37	-154.60	390.71	-137.03	959.98	894.23	65.76	14.599	
6,100.00	6,018.25	6,038.18	6,018.25	37.28	32.89	-90.08	390.71	-137.03	961.04	894.30	66.74	14.399	
6,200.00	6,118.25	6,138.18	6,118.25	37.74	33.41	-90.08	390.71	-137.03	961.04	893.29	67.75	14.185	
6,300.00	6,218.25	6,238.18	6,218.25	38.19	33.93	-90.08	390.71	-137.03	961.04	892.28	68.76	13.976	
6,400.00	6,318.25	6,338.18	6,318.25	38.65	34.45	-90.08	390.71	-137.03	961.04	891.26	69.78	13.773	
6,500.00	6,418.25	6,438.18	6,418.25	39.11	34.97	-90.08	390.71	-137.03	961.04	890.25	70.79	13.576	
6,600.00	6,518.25	6,538.18	6,518.25	39.57	35.50	-90.08	390.71	-137.03	961.04	889.23	71.81	13.384	
6,700.00	6,618.25	6,638.18	6,618.25	40.04	36.02	-90.08	390.71	-137.03	961.04	888.21	72.82	13.197	
6,800.00	6,718.25	6,738.18	6,718.25	40.51	36.54	-90.08	390.71	-137.03	961.04	887.19	73.84	13.014	
6,900.00	6,818.25	6,838.18	6,818.25	40.97	37.07	-90.08	390.71	-137.03	961.04	886.17	74.87	12.837	
7,000.00	6,918.25	6,938.18	6,918.25	41.44	37.59	-90.08	390.71	-137.03	961.04	885.15	75.89	12.664	
7,100.00	7,018.25	7,038.18	7,018.25	41.91	38.12	-90.08	390.71	-137.03	961.04	884.13	76.91	12.495	
7,200.00	7,118.25	7,138.18	7,118.25	42.39	38.64	-90.08	390.71	-137.03	961.04	883.10	77.94	12.331	
7,300.00	7,218.25	7,238.18	7,218.25	42.86	39.17	-90.08	390.71	-137.03	961.04	882.07	78.96	12.170	
7,400.00	7,318.25	7,338.18	7,318.25	43.34	39.69	-90.08	390.71	-137.03	961.04	881.05	79.99	12.014	
7,500.00	7,418.25	7,438.18	7,418.25	43.81	40.22	-90.08	390.71	-137.03	961.04	880.02	81.02	11.861	
7,600.00	7,518.25	7,538.18	7,518.25	44.29	40.75	-90.08	390.71	-137.03	961.04	878.99	82.05	11.712	
7,700.00	7,618.25	7,638.18	7,618.25	44.77	41.27	-90.08	390.71	-137.03	961.04	877.95	83.08	11.567	
7,800.00	7,718.25	7,738.18	7,718.25	45.25	41.80	-90.08	390.71	-137.03	961.04	876.92	84.12	11.425	
7,900.00	7,818.25	7,838.18	7,818.25	45.74	42.33	-90.08	390.71	-137.03	961.04	875.89	85.15	11.286	
8,000.00	7,918.25	7,938.18	7,918.25	46.22	42.85	-90.08	390.71	-137.03	961.04	874.85	86.19	11.151	
8,100.00	8,018.25	8,038.18	8,018.25	46.70	43.38	-90.08	390.71	-137.03	961.04	873.82	87.22	11.018	
8,200.00	8,118.25	8,138.18	8,118.25	47.19	43.91	-90.08	390.71	-137.03	961.04	872.78	88.26	10.889	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDCM													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	
8,300.00	8,218.25	8,238.18	8,218.25	47.68	44.44	-90.08	390.71	-137.03	961.04	871.74	89.30	10.762	
8,400.00	8,318.25	8,338.18	8,318.25	48.17	44.97	-90.08	390.71	-137.03	961.04	870.70	90.33	10.639	
8,500.00	8,418.25	8,438.18	8,418.25	48.66	45.50	-90.08	390.71	-137.03	961.04	869.66	91.37	10.518	
8,600.00	8,518.25	8,538.18	8,518.25	49.15	46.02	-90.08	390.71	-137.03	961.04	868.62	92.41	10.399	
8,700.00	8,618.24	8,636.04	8,615.67	49.64	46.56	-88.67	398.57	-137.10	961.12	867.68	93.44	10.285	
8,800.00	8,717.19	8,731.84	8,708.40	50.16	47.13	-88.01	422.20	-137.34	961.28	866.73	94.55	10.167	
8,900.00	8,812.27	8,826.01	8,794.47	50.70	47.70	-87.41	460.14	-137.71	961.41	865.72	95.68	10.048	
9,000.00	8,900.60	8,918.77	8,872.05	51.24	48.29	-86.89	510.80	-138.22	961.48	864.65	96.84	9.929	
9,100.00	8,979.50	9,010.35	8,939.66	51.77	48.89	-86.46	572.43	-138.83	961.47	863.46	98.00	9.811	
9,200.00	9,046.57	9,100.00	8,995.51	52.30	49.51	-86.13	642.43	-139.52	961.33	862.14	99.19	9.692	
9,300.00	9,099.76	9,190.93	9,040.31	52.84	50.16	-85.90	721.45	-140.30	961.04	860.62	100.42	9.570	
9,400.00	9,137.47	9,280.39	9,071.66	53.42	50.82	-85.79	805.14	-141.13	960.58	858.89	101.70	9.446	
9,500.00	9,158.55	9,369.61	9,089.58	54.06	51.49	-85.80	892.44	-142.00	959.96	856.94	103.03	9.318	
9,600.00	9,163.48	9,461.48	9,094.19	54.74	52.20	-85.85	984.12	-142.91	959.24	854.80	104.44	9.184	
9,700.00	9,164.82	9,561.48	9,094.93	55.50	53.02	-85.81	1,084.11	-143.90	958.58	852.51	106.07	9.037	
9,800.00	9,166.16	9,661.47	9,095.67	56.34	53.92	-85.77	1,184.10	-144.89	957.91	850.08	107.83	8.883	
9,900.00	9,167.50	9,761.47	9,096.41	57.25	54.88	-85.74	1,284.08	-145.88	957.25	847.51	109.74	8.723	
10,000.00	9,168.84	9,861.46	9,097.15	58.24	55.92	-85.70	1,384.07	-146.87	956.59	844.80	111.78	8.558	
10,100.00	9,170.18	9,961.46	9,097.89	59.28	57.01	-85.66	1,484.06	-147.86	955.92	841.97	113.95	8.389	
10,200.00	9,171.52	10,061.45	9,098.63	60.39	58.17	-85.62	1,584.05	-148.85	955.26	839.03	116.24	8.218	
10,300.00	9,172.86	10,161.45	9,099.37	61.56	59.38	-85.58	1,684.04	-149.85	954.60	835.97	118.63	8.047	
10,400.00	9,174.20	10,261.45	9,100.11	62.78	60.65	-85.54	1,784.02	-150.84	953.94	832.80	121.14	7.875	
10,500.00	9,175.54	10,361.44	9,100.85	64.05	61.96	-85.50	1,884.01	-151.83	953.28	829.54	123.74	7.704	
10,600.00	9,176.88	10,461.44	9,101.59	65.37	63.32	-85.46	1,984.00	-152.82	952.62	826.18	126.44	7.534	
10,700.00	9,178.22	10,561.43	9,102.33	66.73	64.72	-85.42	2,083.99	-153.81	951.96	822.74	129.22	7.367	
10,800.00	9,179.56	10,661.43	9,103.07	68.14	66.17	-85.38	2,183.98	-154.80	951.30	819.21	132.09	7.202	
10,900.00	9,180.91	10,761.42	9,103.81	69.58	67.65	-85.34	2,283.97	-155.79	950.64	815.61	135.03	7.040	
11,000.00	9,182.25	10,861.42	9,104.55	71.06	69.17	-85.30	2,383.95	-156.78	949.98	811.94	138.04	6.882	
11,100.00	9,183.59	10,961.42	9,105.29	72.58	70.72	-85.26	2,483.94	-157.77	949.32	808.20	141.12	6.727	
11,200.00	9,184.93	11,061.41	9,106.03	74.13	72.31	-85.22	2,583.93	-158.76	948.67	804.40	144.26	6.576	
11,300.00	9,186.27	11,161.41	9,106.77	75.70	73.92	-85.18	2,683.92	-159.76	948.01	800.55	147.46	6.429	
11,400.00	9,187.61	11,261.40	9,107.51	77.31	75.56	-85.14	2,783.91	-160.75	947.35	796.63	150.72	6.286	
11,500.00	9,188.95	11,361.40	9,108.25	78.94	77.22	-85.10	2,883.89	-161.74	946.69	792.67	154.02	6.146	
11,600.00	9,190.29	11,461.39	9,108.99	80.60	78.91	-85.06	2,983.88	-162.73	946.04	788.66	157.38	6.011	
11,700.00	9,191.63	11,561.39	9,109.73	82.28	80.63	-85.02	3,083.87	-163.72	945.38	784.61	160.78	5.880	
11,800.00	9,192.97	11,661.38	9,110.47	83.99	82.36	-84.98	3,183.86	-164.71	944.73	780.51	164.22	5.753	
11,900.00	9,194.31	11,761.38	9,111.21	85.71	84.11	-84.94	3,283.85	-165.70	944.07	776.38	167.70	5.630	
12,000.00	9,195.65	11,861.38	9,111.95	87.46	85.88	-84.90	3,383.83	-166.69	943.42	772.21	171.21	5.510	
12,100.00	9,196.99	11,961.37	9,112.69	89.22	87.67	-84.86	3,483.82	-167.68	942.77	768.00	174.77	5.394	
12,200.00	9,198.33	12,061.37	9,113.43	91.00	89.48	-84.82	3,583.81	-168.68	942.11	763.76	178.35	5.282	
12,300.00	9,199.68	12,161.36	9,114.17	92.79	91.30	-84.78	3,683.80	-169.67	941.46	759.50	181.97	5.174	
12,400.00	9,201.02	12,261.36	9,114.91	94.61	93.13	-84.74	3,783.79	-170.66	940.81	755.20	185.61	5.069	
12,500.00	9,202.36	12,361.35	9,115.65	96.43	94.98	-84.70	3,883.77	-171.65	940.16	750.88	189.28	4.967	
12,600.00	9,203.70	12,461.35	9,116.39	98.27	96.84	-84.66	3,983.76	-172.64	939.51	746.53	192.98	4.868	
12,700.00	9,205.04	12,561.35	9,117.13	100.12	98.72	-84.62	4,083.75	-173.63	938.86	742.16	196.70	4.773	
12,800.00	9,206.38	12,661.34	9,117.87	101.99	100.60	-84.58	4,183.74	-174.62	938.21	737.76	200.44	4.681	
12,900.00	9,207.72	12,761.34	9,118.61	103.87	102.50	-84.54	4,283.73	-175.61	937.56	733.35	204.21	4.591	
13,000.00	9,209.06	12,861.33	9,119.35	105.75	104.40	-84.50	4,383.71	-176.60	936.91	728.92	207.99	4.505	
13,100.00	9,210.40	12,961.33	9,120.09	107.65	106.32	-84.46	4,483.70	-177.59	936.26	724.46	211.79	4.421	
13,200.00	9,211.74	13,061.32	9,120.83	109.56	108.25	-84.42	4,583.69	-178.59	935.61	719.99	215.62	4.339	
13,300.00	9,213.08	13,161.32	9,121.57	111.48	110.18	-84.38	4,683.68	-179.58	934.96	715.51	219.46	4.260	
13,400.00	9,214.42	13,261.32	9,122.31	113.40	112.12	-84.34	4,783.67	-180.57	934.31	711.00	223.31	4.184	

CC - Min centre to center distance or covergent 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17													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		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	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)										
13,500.00	9,215.76	13,361.31	9,123.05	115.34	114.07	-84.30	4,883.65	-181.56	933.67	706.49	227.18	4.110			
13,600.00	9,217.10	13,461.31	9,123.79	117.28	116.03	-84.25	4,983.64	-182.55	933.02	701.95	231.07	4.038			
13,700.00	9,218.45	13,561.30	9,124.53	119.23	117.99	-84.21	5,083.63	-183.54	932.37	697.41	234.96	3.968			
13,800.00	9,219.79	13,661.30	9,125.27	121.19	119.97	-84.17	5,183.62	-184.53	931.73	692.85	238.88	3.900			
13,900.00	9,221.13	13,761.29	9,126.01	123.15	121.94	-84.13	5,283.61	-185.52	931.08	688.28	242.80	3.835			
14,000.00	9,222.47	13,861.29	9,126.75	125.12	123.93	-84.09	5,383.59	-186.51	930.44	683.70	246.74	3.771			
14,100.00	9,223.81	13,961.29	9,127.49	127.10	125.92	-84.05	5,483.58	-187.51	929.80	679.11	250.68	3.709			
14,200.00	9,225.15	14,061.28	9,128.23	129.08	127.91	-84.01	5,583.57	-188.50	929.15	674.51	254.64	3.649			
14,300.00	9,226.49	14,161.28	9,128.97	131.07	129.91	-83.97	5,683.56	-189.49	928.51	669.90	258.61	3.590			
14,400.00	9,227.83	14,261.27	9,129.71	133.06	131.92	-83.92	5,783.55	-190.48	927.87	665.28	262.58	3.534			
14,500.00	9,229.17	14,361.27	9,130.45	135.06	133.93	-83.88	5,883.53	-191.47	927.22	660.65	266.57	3.478			
14,600.00	9,230.51	14,461.26	9,131.19	137.06	135.94	-83.84	5,983.52	-192.46	926.57	656.03	270.54	3.421			
14,635.27	9,231.55	14,509.75	9,131.89	137.77	136.92	-83.82	6,032.00	-192.22	926.40	654.00	272.40	3.401			
14,700.00	9,233.89	14,574.46	9,132.79	139.07	138.22	-83.75	6,096.71	-191.98	926.88	651.84	275.04	3.370			
14,800.00	9,237.56	14,674.43	9,134.18	141.08	140.24	-83.61	6,196.67	-191.60	927.69	648.70	278.99	3.325			
14,900.00	9,241.22	14,774.41	9,135.57	143.09	142.26	-83.48	6,296.63	-191.23	928.51	645.56	282.95	3.282			
15,000.00	9,244.89	14,874.38	9,136.96	145.11	144.29	-83.34	6,396.60	-190.86	929.33	642.42	286.91	3.239			
15,100.00	9,248.55	14,974.35	9,138.34	147.13	146.31	-83.21	6,496.56	-190.48	930.15	639.28	290.87	3.198			
15,200.00	9,252.22	15,074.32	9,139.73	149.16	148.35	-83.07	6,596.52	-190.11	930.99	636.14	294.84	3.158			
15,300.00	9,255.88	15,174.30	9,141.12	151.18	150.38	-82.94	6,696.48	-189.74	931.82	633.01	298.82	3.118			
15,400.00	9,259.55	15,274.27	9,142.51	153.22	152.42	-82.80	6,796.44	-189.36	932.66	629.87	302.79	3.080			
15,500.00	9,263.21	15,374.24	9,143.89	155.25	154.46	-82.67	6,896.41	-188.99	933.51	626.74	306.78	3.043			
15,600.00	9,266.88	15,474.21	9,145.28	157.29	156.51	-82.54	6,996.37	-188.62	934.36	623.60	310.76	3.007			
15,700.00	9,270.54	15,574.19	9,146.67	159.33	158.56	-82.40	7,096.33	-188.24	935.22	620.47	314.75	2.971			
15,800.00	9,274.21	15,674.16	9,148.06	161.37	160.61	-82.27	7,196.29	-187.87	936.08	617.35	318.74	2.937			
15,900.00	9,277.87	15,774.13	9,149.44	163.42	162.66	-82.13	7,296.25	-187.49	936.95	614.22	322.73	2.903			
16,000.00	9,281.54	15,874.10	9,150.83	165.47	164.72	-82.00	7,396.22	-187.12	937.82	611.10	326.72	2.870			
16,100.00	9,285.20	15,974.08	9,152.22	167.52	166.78	-81.87	7,496.18	-186.75	938.70	607.98	330.72	2.838			
16,200.00	9,288.87	16,074.05	9,153.61	169.57	168.84	-81.74	7,596.14	-186.37	939.58	604.87	334.72	2.807			
16,300.00	9,292.53	16,174.02	9,154.99	171.63	170.90	-81.60	7,696.10	-186.00	940.47	601.76	338.71	2.777			
16,400.00	9,295.57	16,274.00	9,156.38	173.68	172.97	-81.50	7,796.06	-185.63	941.26	598.55	342.71	2.746			
16,500.00	9,295.67	16,373.99	9,157.77	175.74	175.03	-81.58	7,896.05	-185.25	941.56	594.71	346.85	2.715			
16,600.00	9,295.12	16,473.97	9,159.16	177.80	177.10	-81.70	7,996.02	-184.88	941.76	590.72	351.04	2.683			
16,700.00	9,294.57	16,573.95	9,160.54	179.87	179.17	-81.82	8,095.99	-184.51	941.96	586.72	355.24	2.652			
16,800.00	9,294.03	16,673.93	9,161.93	181.93	181.25	-81.94	8,195.96	-184.13	942.17	582.72	359.45	2.621			
16,900.00	9,293.48	16,773.91	9,163.32	184.00	183.32	-82.06	8,295.93	-183.76	942.38	578.73	363.66	2.591			
17,000.00	9,292.93	16,873.89	9,164.71	186.07	185.40	-82.18	8,395.90	-183.38	942.60	574.73	367.87	2.562			
17,100.00	9,292.39	16,973.87	9,166.10	188.14	187.48	-82.30	8,495.87	-183.01	942.82	570.74	372.09	2.534			
17,200.00	9,291.84	17,073.85	9,167.48	190.22	189.56	-82.42	8,595.84	-182.64	943.04	566.74	376.31	2.506			
17,300.00	9,291.30	17,173.83	9,168.87	192.29	191.64	-82.54	8,695.81	-182.26	943.27	562.74	380.53	2.479			
17,400.00	9,290.75	17,273.81	9,170.26	194.37	193.72	-82.66	8,795.78	-181.89	943.51	558.75	384.76	2.452			
17,500.00	9,290.20	17,373.79	9,171.65	196.45	195.81	-82.78	8,895.75	-181.52	943.74	554.76	388.99	2.426			
17,600.00	9,289.66	17,473.77	9,173.03	198.53	197.90	-82.90	8,995.72	-181.14	943.98	550.76	393.22	2.401			
17,700.00	9,289.11	17,573.75	9,174.42	200.61	199.98	-83.02	9,095.69	-180.77	944.23	546.77	397.46	2.376			
17,800.00	9,288.56	17,673.73	9,175.81	202.69	202.07	-83.14	9,195.66	-180.40	944.48	542.78	401.70	2.351			
17,900.00	9,288.02	17,773.71	9,177.20	204.78	204.16	-83.26	9,295.63	-180.02	944.73	538.79	405.94	2.327			
18,000.00	9,287.47	17,873.69	9,178.58	206.86	206.26	-83.38	9,395.60	-179.65	944.99	534.81	410.18	2.304			
18,100.00	9,286.92	17,973.67	9,179.97	208.95	208.35	-83.50	9,495.57	-179.28	945.25	530.82	414.43	2.281			
18,200.00	9,286.38	18,073.65	9,181.36	211.04	210.44	-83.62	9,595.54	-178.90	945.52	526.84	418.68	2.258			
18,300.00	9,285.83	18,173.63	9,182.75	213.13	212.54	-83.74	9,695.51	-178.53	945.79	522.85	422.93	2.236			
18,400.00	9,285.28	18,273.61	9,184.13	215.22	214.64	-83.86	9,795.48	-178.15	946.06	518.87	427.19	2.215			
18,500.00	9,284.74	18,373.59	9,185.52	217.31	216.73	-83.98	9,895.45	-177.78	946.34	514.89	431.44	2.193			

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design													HH SO 8 5 Fed 003 - 2H - OH - Plan 1 06-16-17		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					
18,600.00	9,284.19	18,473.57	9,186.91	219.41	218.83	-84.10	9,995.42	-177.41	946.62	510.92	435.70	2.173						
18,700.00	9,283.64	18,573.55	9,188.30	221.50	220.93	-84.22	10,095.39	-177.03	946.91	506.94	439.96	2.152						
18,800.00	9,283.10	18,673.53	9,189.69	223.60	223.03	-84.34	10,195.36	-176.66	947.20	502.97	444.23	2.132						
18,900.00	9,282.55	18,773.51	9,191.07	225.69	225.13	-84.46	10,295.33	-176.29	947.49	499.00	448.49	2.113						
19,000.00	9,282.00	18,873.49	9,192.46	227.79	227.24	-84.58	10,395.30	-175.91	947.79	495.04	452.76	2.093						
19,100.00	9,281.46	18,973.47	9,193.85	229.89	229.34	-84.70	10,495.27	-175.54	948.09	491.07	457.02	2.075						
19,200.00	9,280.91	19,073.45	9,195.24	231.99	231.45	-84.82	10,595.24	-175.17	948.40	487.11	461.29	2.056						
19,300.00	9,280.36	19,173.43	9,196.62	234.09	233.55	-84.94	10,695.21	-174.79	948.71	483.15	465.56	2.038						
19,400.00	9,279.82	19,273.41	9,198.01	236.19	235.66	-85.05	10,795.18	-174.42	949.03	479.19	469.83	2.020						
19,500.00	9,279.27	19,373.39	9,199.40	238.29	237.76	-85.17	10,895.15	-174.04	949.35	475.24	474.11	2.002						
19,549.38	9,279.00	19,416.71	9,200.00	239.33	238.68	-85.22	10,938.45	-173.88	949.53	473.44	476.08	1.994 SF						

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 3H - OH - Plan 1 06-16-17												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	
0.00	0.00	0.00	1.00	0.00	0.00	0.29	49.84	0.25	49.85				
100.00	100.00	99.00	100.00	0.19	0.19	0.29	49.84	0.25	49.84	49.45	0.39	129.372	
200.00	200.00	199.00	200.00	0.73	0.73	0.29	49.84	0.25	49.84	48.38	1.46	34.200	
300.00	300.00	299.00	300.00	1.27	1.26	0.29	49.84	0.25	49.84	47.30	2.53	19.678	
400.00	400.00	399.00	400.00	1.81	1.80	0.29	49.84	0.25	49.84	46.23	3.61	13.813	
500.00	500.00	499.00	500.00	2.34	2.34	0.29	49.84	0.25	49.84	45.15	4.68	10.641	
600.00	600.00	599.00	600.00	2.88	2.88	0.29	49.84	0.25	49.84	44.08	5.76	8.654 CC	
700.00	699.98	697.39	698.37	3.41	3.41	-65.36	51.39	0.83	50.67	43.85	6.82	7.430 ES	
800.00	799.84	795.67	796.52	3.94	3.94	-68.40	56.10	2.56	53.34	45.46	7.88	6.770	
900.00	899.45	893.75	894.24	4.48	4.47	-72.79	63.95	5.46	58.11	49.16	8.95	6.494	
1,000.00	998.70	993.26	993.20	5.03	5.01	-78.62	73.70	9.05	64.03	53.99	10.04	6.379	
1,100.00	1,097.47	1,092.65	1,092.05	5.60	5.56	-86.21	83.44	12.64	70.23	59.08	11.15	6.299	
1,200.00	1,195.78	1,191.80	1,190.65	6.19	6.11	-94.48	93.16	16.23	77.65	65.37	12.28	6.324	
1,300.00	1,294.07	1,290.93	1,289.24	6.79	6.66	-101.34	102.88	19.81	86.45	73.03	13.42	6.442	
1,400.00	1,392.36	1,390.05	1,387.82	7.40	7.22	-106.88	112.60	23.39	96.25	81.69	14.56	6.610	
1,500.00	1,490.65	1,489.18	1,486.41	8.02	7.78	-111.37	122.31	26.97	106.79	91.08	15.71	6.798	
1,600.00	1,588.93	1,588.31	1,584.99	8.64	8.34	-115.04	132.03	30.55	117.86	101.00	16.85	6.993	
1,700.00	1,687.22	1,687.44	1,683.58	9.27	8.90	-118.08	141.75	34.14	129.32	111.32	18.00	7.185	
1,800.00	1,785.51	1,786.56	1,782.16	9.90	9.46	-120.61	151.46	37.72	141.09	121.94	19.15	7.369	
1,900.00	1,883.80	1,885.69	1,880.75	10.54	10.02	-122.76	161.18	41.30	153.09	132.79	20.30	7.543	
2,000.00	1,982.09	1,984.82	1,979.33	11.17	10.58	-124.59	170.90	44.88	165.27	143.82	21.44	7.707	
2,100.00	2,080.37	2,083.94	2,077.92	11.81	11.15	-126.16	180.61	48.46	177.59	155.00	22.59	7.860	
2,200.00	2,178.66	2,183.07	2,176.50	12.45	11.71	-127.54	190.33	52.05	190.03	166.28	23.74	8.004	
2,300.00	2,276.95	2,282.20	2,275.09	13.10	12.28	-128.74	200.04	55.63	202.56	177.67	24.89	8.137	
2,400.00	2,375.24	2,381.33	2,373.67	13.74	12.84	-129.80	209.76	59.21	215.17	189.13	26.04	8.262	
2,500.00	2,473.52	2,480.45	2,472.26	14.38	13.41	-130.75	219.48	62.79	227.84	200.65	27.19	8.378	
2,600.00	2,571.81	2,579.58	2,570.84	15.03	13.97	-131.59	229.19	66.37	240.57	212.23	28.35	8.487	
2,700.00	2,670.10	2,678.71	2,669.43	15.68	14.54	-132.36	238.91	69.95	253.35	223.85	29.50	8.589	
2,800.00	2,768.39	2,777.83	2,768.01	16.32	15.10	-133.04	248.63	73.54	266.17	235.52	30.65	8.684	
2,900.00	2,866.67	2,876.96	2,866.60	16.97	15.67	-133.67	258.34	77.12	279.02	247.21	31.80	8.773	
3,000.00	2,964.96	2,976.09	2,965.18	17.62	16.23	-134.24	268.06	80.70	291.90	258.94	32.96	8.857	
3,100.00	3,063.25	3,075.22	3,063.76	18.27	16.80	-134.76	277.78	84.28	304.80	270.69	34.11	8.936	
3,200.00	3,161.54	3,174.34	3,162.35	18.92	17.37	-135.24	287.49	87.86	317.73	282.47	35.26	9.010	
3,300.00	3,259.83	3,273.47	3,260.93	19.57	17.93	-135.68	297.21	91.45	330.68	294.26	36.42	9.080	
3,400.00	3,358.11	3,372.60	3,359.52	20.22	18.50	-136.09	306.93	95.03	343.65	306.07	37.57	9.147	
3,500.00	3,456.40	3,471.72	3,458.10	20.87	19.07	-136.47	316.64	98.61	356.63	317.90	38.73	9.209	
3,600.00	3,554.69	3,570.85	3,556.69	21.52	19.63	-136.82	326.36	102.19	369.63	329.75	39.88	9.268	
3,700.00	3,652.98	3,669.98	3,655.27	22.17	20.20	-137.15	336.08	105.77	382.63	341.60	41.03	9.325	
3,800.00	3,751.26	3,769.11	3,753.86	22.82	20.77	-137.45	345.79	109.36	395.66	353.47	42.19	9.378	
3,900.00	3,849.55	3,867.44	3,851.76	23.48	21.32	-137.90	354.38	112.52	408.77	365.44	43.33	9.435	
4,000.00	3,947.84	3,965.23	3,949.37	24.13	21.85	-138.76	359.84	114.53	422.17	377.75	44.42	9.504	
4,100.00	4,046.13	4,062.42	4,046.53	24.78	22.37	-140.00	362.16	115.39	436.01	390.54	45.48	9.588	
4,200.00	4,144.42	4,160.31	4,144.42	25.43	22.87	-141.48	362.26	115.43	450.37	403.86	46.51	9.684	
4,300.00	4,242.70	4,258.60	4,242.70	26.09	23.37	-142.88	362.26	115.43	465.02	417.48	47.54	9.782	
4,400.00	4,340.99	4,356.88	4,340.99	26.74	23.88	-144.20	362.26	115.43	479.93	431.36	48.57	9.881	
4,500.00	4,439.28	4,455.17	4,439.28	27.39	24.38	-145.44	362.26	115.43	495.08	445.47	49.61	9.980	
4,600.00	4,537.57	4,553.46	4,537.57	28.05	24.89	-146.61	362.26	115.43	510.44	459.79	50.65	10.079	
4,700.00	4,635.85	4,651.75	4,635.85	28.70	25.39	-147.71	362.26	115.43	526.00	474.31	51.69	10.177	
4,800.00	4,734.14	4,750.03	4,734.14	29.35	25.90	-148.75	362.26	115.43	541.74	489.01	52.73	10.274	
4,900.00	4,832.43	4,848.32	4,832.43	30.01	26.41	-149.72	362.26	115.43	557.64	503.87	53.77	10.371	
5,000.00	4,930.72	4,946.61	4,930.72	30.66	26.92	-150.65	362.26	115.43	573.70	518.88	54.82	10.466	
5,100.00	5,029.01	5,044.90	5,029.01	31.31	27.43	-151.52	362.26	115.43	589.89	534.03	55.86	10.560	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 3H - OH - Plan 1 06-16-17													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	
5,200.00	5,127.29	5,143.19	5,127.29	31.97	27.94	-152.35	362.26	115.43	606.21	549.30	56.91	10.652	
5,300.00	5,225.58	5,241.47	5,225.58	32.62	28.45	-153.13	362.26	115.43	622.65	564.69	57.96	10.742	
5,400.00	5,323.87	5,339.76	5,323.87	33.27	28.97	-153.88	362.26	115.43	639.20	580.18	59.02	10.831	
5,500.00	5,422.16	5,438.05	5,422.16	33.93	29.48	-154.58	362.26	115.43	655.85	595.77	60.07	10.918	
5,600.00	5,520.52	5,536.41	5,520.52	34.58	29.99	-155.31	362.26	115.43	672.21	611.01	61.19	10.985	
5,700.00	5,619.38	5,635.27	5,619.38	35.19	30.51	-155.94	362.26	115.43	685.91	623.57	62.34	11.002	
5,800.00	5,718.71	5,734.60	5,718.71	35.77	31.03	-156.42	362.26	115.43	696.49	633.06	63.43	10.980	
5,900.00	5,818.37	5,834.27	5,818.37	36.31	31.55	-156.74	362.26	115.43	703.91	639.45	64.46	10.920	
6,000.00	5,918.26	5,934.16	5,918.26	36.82	32.07	-156.92	362.26	115.43	708.14	642.72	65.41	10.825	
6,100.00	6,018.25	6,034.14	6,018.25	37.28	32.60	-92.41	362.26	115.43	709.21	642.83	66.38	10.684	
6,200.00	6,118.25	6,134.14	6,118.25	37.74	33.12	-92.41	362.26	115.43	709.21	641.82	67.39	10.524	
6,300.00	6,218.25	6,234.14	6,218.25	38.19	33.65	-92.41	362.26	115.43	709.21	640.80	68.41	10.367	
6,400.00	6,318.25	6,334.14	6,318.25	38.65	34.18	-92.41	362.26	115.43	709.21	639.78	69.43	10.215	
6,500.00	6,418.25	6,434.14	6,418.25	39.11	34.70	-92.41	362.26	115.43	709.21	638.76	70.45	10.067	
6,600.00	6,518.25	6,534.14	6,518.25	39.57	35.23	-92.41	362.26	115.43	709.21	637.74	71.47	9.923	
6,700.00	6,618.25	6,634.14	6,618.25	40.04	35.76	-92.41	362.26	115.43	709.21	636.72	72.49	9.783	
6,800.00	6,718.25	6,734.14	6,718.25	40.51	36.28	-92.41	362.26	115.43	709.21	635.70	73.52	9.647	
6,900.00	6,818.25	6,834.14	6,818.25	40.97	36.81	-92.41	362.26	115.43	709.21	634.67	74.54	9.514	
7,000.00	6,918.25	6,934.14	6,918.25	41.44	37.34	-92.41	362.26	115.43	709.21	633.64	75.57	9.385	
7,100.00	7,018.25	7,034.14	7,018.25	41.91	37.87	-92.41	362.26	115.43	709.21	632.61	76.60	9.259	
7,200.00	7,118.25	7,134.14	7,118.25	42.39	38.40	-92.41	362.26	115.43	709.21	631.58	77.63	9.136	
7,300.00	7,218.25	7,234.14	7,218.25	42.86	38.92	-92.41	362.26	115.43	709.21	630.55	78.66	9.016	
7,400.00	7,318.25	7,334.14	7,318.25	43.34	39.45	-92.41	362.26	115.43	709.21	629.52	79.69	8.900	
7,500.00	7,418.25	7,434.14	7,418.25	43.81	39.98	-92.41	362.26	115.43	709.21	628.49	80.72	8.786	
7,600.00	7,518.25	7,534.14	7,518.25	44.29	40.51	-92.41	362.26	115.43	709.21	627.45	81.76	8.674	
7,700.00	7,618.25	7,634.14	7,618.25	44.77	41.04	-92.41	362.26	115.43	709.21	626.42	82.79	8.566	
7,800.00	7,718.25	7,734.14	7,718.25	45.25	41.57	-92.41	362.26	115.43	709.21	625.38	83.83	8.460	
7,900.00	7,818.25	7,834.14	7,818.25	45.74	42.10	-92.41	362.26	115.43	709.21	624.34	84.87	8.357	
8,000.00	7,918.25	7,934.14	7,918.25	46.22	42.63	-92.41	362.26	115.43	709.21	623.31	85.91	8.256	
8,100.00	8,018.25	8,034.14	8,018.25	46.70	43.16	-92.41	362.26	115.43	709.21	622.27	86.95	8.157	
8,200.00	8,118.25	8,134.14	8,118.25	47.19	43.69	-92.41	362.26	115.43	709.21	621.23	87.99	8.061	
8,300.00	8,218.25	8,234.14	8,218.25	47.68	44.22	-92.41	362.26	115.43	709.21	620.19	89.03	7.966	
8,400.00	8,318.25	8,334.14	8,318.25	48.17	44.75	-92.41	362.26	115.43	709.21	619.14	90.07	7.874	
8,500.00	8,418.25	8,434.14	8,418.25	48.66	45.28	-92.41	362.26	115.43	709.21	618.10	91.11	7.784	
8,600.00	8,518.25	8,534.14	8,518.25	49.15	45.82	-92.41	362.26	115.43	709.21	617.06	92.15	7.696	
8,648.38	8,566.63	8,582.52	8,566.63	49.38	46.07	-91.48	362.26	115.43	709.23	616.61	92.62	7.657	
8,700.00	8,618.24	8,634.13	8,618.24	49.64	46.35	-91.49	362.26	115.43	709.23	616.07	93.16	7.613	
8,800.00	8,717.19	8,733.08	8,717.19	50.16	46.87	-92.52	362.26	115.43	709.71	615.48	94.23	7.531	
8,900.00	8,812.27	8,828.16	8,812.27	50.70	47.38	-94.65	362.26	115.43	711.75	616.43	95.31	7.467	
9,000.00	8,900.60	8,916.49	8,900.60	51.24	47.85	-97.37	362.26	115.43	717.35	621.01	96.34	7.446	
9,100.00	8,979.50	8,995.39	8,979.50	51.77	48.27	-100.00	362.26	115.43	729.18	632.00	97.18	7.503	
9,200.00	9,046.57	9,062.46	9,046.57	52.30	48.62	-101.77	362.26	115.43	749.94	652.07	97.87	7.663	
9,300.00	9,099.76	9,115.65	9,099.76	52.84	48.91	-101.97	362.26	115.43	781.58	682.93	98.66	7.922	
9,400.00	9,137.47	9,153.55	9,137.47	53.42	49.36	-103.29	365.63	115.39	824.34	724.91	99.42	8.291	
9,500.00	9,158.55	9,174.63	9,158.55	54.06	51.16	-116.75	478.55	114.28	871.32	775.41	95.90	9.085	
9,600.00	9,163.48	9,179.01	9,163.48	54.74	55.13	-126.86	1,007.74	109.05	881.02	788.58	92.44	9.531	
9,700.00	9,164.82	9,179.01	9,164.82	55.50	55.92	-126.61	1,107.50	108.07	877.20	783.07	94.13	9.319	
9,800.00	9,166.16	9,180.37	9,166.16	56.34	56.78	-126.35	1,207.26	107.08	873.40	777.44	95.96	9.102	
9,900.00	9,167.50	9,181.71	9,167.50	57.25	57.70	-126.09	1,307.02	106.10	869.62	771.71	97.91	8.882	
10,000.00	9,168.84	9,183.05	9,168.84	58.24	58.69	-125.83	1,406.79	105.11	865.85	765.88	99.97	8.661	
10,100.00	9,170.18	9,184.39	9,170.18	59.28	59.75	-125.56	1,506.55	104.13	862.11	759.95	102.15	8.439	
10,200.00	9,171.52	9,185.73	9,171.52	60.39	60.86	-125.30	1,606.31	103.14	858.38	753.94	104.44	8.219	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design													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		
10,300.00	9,172.86	10,808.97	9,663.44	61.56	62.02	-125.03	1,706.07	102.16	854.67	747.84	106.83	8.000		
10,400.00	9,174.20	10,908.82	9,659.37	62.78	63.24	-124.76	1,805.83	101.17	850.98	741.66	109.32	7.784		
10,500.00	9,175.54	11,008.67	9,655.29	64.05	64.51	-124.48	1,905.60	100.18	847.31	735.41	111.90	7.572		
10,600.00	9,176.88	11,108.52	9,651.21	65.37	65.82	-124.21	2,005.36	99.20	843.66	729.09	114.57	7.364		
10,700.00	9,178.22	11,208.37	9,647.13	66.73	67.18	-123.93	2,105.12	98.21	840.03	722.71	117.32	7.160		
10,800.00	9,179.56	11,308.22	9,643.05	68.14	68.58	-123.65	2,204.88	97.23	836.41	716.26	120.15	6.961		
10,900.00	9,180.91	11,408.07	9,638.97	69.58	70.02	-123.36	2,304.64	96.24	832.82	709.77	123.06	6.768		
11,000.00	9,182.25	11,507.92	9,634.89	71.06	71.49	-123.08	2,404.41	95.26	829.25	703.22	126.03	6.580		
11,100.00	9,183.59	11,607.77	9,630.82	72.58	73.00	-122.79	2,504.17	94.27	825.70	696.62	129.08	6.397		
11,200.00	9,184.93	11,707.62	9,626.74	74.13	74.54	-122.50	2,603.93	93.29	822.17	689.98	132.19	6.220		
11,300.00	9,186.27	11,807.47	9,622.66	75.70	76.11	-122.21	2,703.69	92.30	818.66	683.30	135.36	6.048		
11,400.00	9,187.61	11,907.32	9,618.58	77.31	77.71	-121.91	2,803.46	91.32	815.18	676.58	138.59	5.882		
11,500.00	9,188.95	12,007.17	9,614.50	78.94	79.33	-121.61	2,903.22	90.33	811.71	669.83	141.88	5.721		
11,600.00	9,190.29	12,107.02	9,610.42	80.60	80.98	-121.31	3,002.98	89.35	808.27	663.05	145.22	5.566		
11,700.00	9,191.63	12,206.87	9,606.34	82.28	82.65	-121.01	3,102.74	88.36	804.85	656.24	148.61	5.416		
11,800.00	9,192.97	12,306.72	9,602.27	83.99	84.35	-120.70	3,202.50	87.38	801.45	649.40	152.06	5.271		
11,900.00	9,194.31	12,400.00	9,598.71	85.71	85.95	-120.43	3,295.71	86.46	798.23	642.84	155.40	5.137		
12,000.00	9,195.65	12,488.67	9,597.62	87.46	87.48	-120.31	3,384.37	85.58	796.34	637.80	158.54	5.023		
12,100.00	9,196.99	12,584.59	9,598.76	89.22	89.15	-120.33	3,480.27	84.62	795.64	633.97	161.68	4.921		
12,200.00	9,198.33	12,684.59	9,600.11	91.00	90.91	-120.35	3,580.26	83.63	795.04	630.14	164.90	4.821		
12,300.00	9,199.68	12,784.59	9,601.45	92.79	92.69	-120.38	3,680.24	82.63	794.43	626.28	168.15	4.725		
12,400.00	9,201.02	12,884.58	9,602.79	94.61	94.49	-120.40	3,780.22	81.63	793.82	622.40	171.43	4.631		
12,500.00	9,202.36	12,984.58	9,604.13	96.43	96.30	-120.43	3,880.21	80.64	793.21	618.49	174.72	4.540		
12,600.00	9,203.70	13,084.58	9,605.47	98.27	98.12	-120.46	3,980.19	79.64	792.61	614.56	178.05	4.452		
12,700.00	9,205.04	13,184.58	9,606.82	100.12	99.96	-120.48	4,080.17	78.65	792.00	610.61	181.39	4.366		
12,800.00	9,206.38	13,284.57	9,608.16	101.99	101.81	-120.51	4,180.16	77.65	791.39	606.64	184.75	4.283		
12,900.00	9,207.72	13,384.57	9,609.50	103.87	103.67	-120.53	4,280.14	76.66	790.79	602.65	188.14	4.203		
13,000.00	9,209.06	13,484.57	9,610.84	105.75	105.54	-120.56	4,380.13	75.66	790.18	598.64	191.54	4.125		
13,100.00	9,210.40	13,584.57	9,612.18	107.65	107.43	-120.59	4,480.11	74.66	789.57	594.62	194.95	4.050		
13,200.00	9,211.74	13,684.56	9,613.53	109.56	109.32	-120.61	4,580.09	73.67	788.97	590.58	198.39	3.977		
13,300.00	9,213.08	13,784.56	9,614.87	111.48	111.23	-120.64	4,680.08	72.67	788.36	586.53	201.83	3.906		
13,400.00	9,214.42	13,884.56	9,616.21	113.40	113.14	-120.66	4,780.06	71.68	787.75	582.46	205.30	3.837		
13,500.00	9,215.76	13,984.56	9,617.55	115.34	115.06	-120.69	4,880.04	70.68	787.15	578.38	208.77	3.770		
13,600.00	9,217.10	14,084.55	9,618.89	117.28	116.99	-120.72	4,980.03	69.69	786.54	574.28	212.26	3.706		
13,700.00	9,218.45	14,184.55	9,620.23	119.23	118.93	-120.74	5,080.01	68.69	785.94	570.18	215.76	3.643		
13,800.00	9,219.79	14,284.55	9,621.58	121.19	120.87	-120.77	5,179.99	67.69	785.33	566.06	219.27	3.582		
13,900.00	9,221.13	14,384.55	9,622.92	123.15	122.83	-120.80	5,279.98	66.70	784.73	561.93	222.79	3.522		
14,000.00	9,222.47	14,484.54	9,624.26	125.12	124.79	-120.82	5,379.96	65.70	784.12	557.80	226.33	3.465		
14,100.00	9,223.81	14,584.54	9,625.60	127.10	126.75	-120.85	5,479.94	64.71	783.52	553.65	229.87	3.409		
14,200.00	9,225.15	14,684.54	9,626.94	129.08	128.72	-120.88	5,579.93	63.71	782.91	549.49	233.42	3.354		
14,300.00	9,226.49	14,784.54	9,628.29	131.07	130.70	-120.90	5,679.91	62.71	782.31	545.33	236.98	3.301		
14,400.00	9,227.83	14,884.53	9,629.63	133.06	132.69	-120.93	5,779.90	61.72	781.70	541.16	240.54	3.250		
14,500.00	9,229.17	14,984.53	9,630.97	135.06	134.68	-120.96	5,879.88	60.72	781.10	536.98	244.12	3.200		
14,600.00	9,230.51	15,080.87	9,632.42	137.06	136.79	-120.97	5,986.20	59.82	780.48	532.59	247.88	3.149		
14,700.00	9,233.89	15,193.02	9,633.96	139.07	138.83	-120.88	6,088.34	60.18	779.65	527.85	251.81	3.096		
14,800.00	9,237.56	15,292.99	9,635.47	141.08	140.83	-120.72	6,188.30	60.56	779.03	523.32	255.71	3.047		
14,900.00	9,241.22	15,392.97	9,636.99	143.09	142.83	-120.57	6,288.26	60.94	778.42	518.79	259.63	2.998		
15,000.00	9,244.89	15,492.94	9,638.50	145.11	144.84	-120.41	6,388.23	61.32	777.81	514.25	263.56	2.951		
15,100.00	9,248.55	15,592.92	9,640.01	147.13	146.85	-120.25	6,488.19	61.70	777.20	509.70	267.50	2.905		
15,200.00	9,252.22	15,692.89	9,641.52	149.16	148.87	-120.09	6,588.15	62.07	776.60	505.14	271.46	2.861		
15,300.00	9,255.88	15,792.87	9,643.04	151.18	150.89	-119.94	6,688.12	62.45	776.01	500.58	275.43	2.817		
15,400.00	9,259.55	15,892.84	9,644.55	153.22	152.91	-119.78	6,788.08	62.83	775.42	496.01	279.41	2.775		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 3H - OH - Plan 1 06-16-17												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)					
15,500.00	9,263.21	15,992.82	9,646.06	155.25	154.94	-119.62	6,888.04	63.21	774.84	491.44	283.41	2.734	
15,600.00	9,266.88	16,092.79	9,647.58	157.29	156.97	-119.46	6,988.01	63.59	774.27	486.86	287.41	2.694	
15,700.00	9,270.54	16,192.77	9,649.09	159.33	159.00	-119.30	7,087.97	63.96	773.70	482.27	291.43	2.655	
15,800.00	9,274.21	16,292.74	9,650.60	161.37	161.04	-119.14	7,187.93	64.34	773.14	477.68	295.46	2.617	
15,900.00	9,277.87	16,392.72	9,652.12	163.42	163.08	-118.98	7,287.90	64.72	772.58	473.08	299.50	2.580	
16,000.00	9,281.54	16,492.69	9,653.63	165.47	165.12	-118.82	7,387.86	65.10	772.03	468.48	303.55	2.543	
16,100.00	9,285.20	16,592.67	9,655.14	167.52	167.16	-118.66	7,487.82	65.48	771.48	463.87	307.61	2.508	
16,200.00	9,288.87	16,692.65	9,656.65	169.57	169.21	-118.50	7,587.78	65.85	770.94	459.26	311.69	2.473	
16,300.00	9,292.53	16,792.62	9,658.17	171.63	171.26	-118.34	7,687.75	66.23	770.41	454.64	315.77	2.440	
16,376.59	9,294.73	16,869.20	9,659.33	173.20	172.83	-118.26	7,764.32	66.52	770.29	451.41	318.87	2.416	
16,400.00	9,295.57	16,892.61	9,659.68	173.68	173.31	-118.22	7,787.72	66.61	770.17	450.32	319.85	2.408	
16,500.00	9,295.67	16,992.59	9,661.19	175.74	175.37	-118.29	7,887.69	66.99	771.28	447.71	323.56	2.384	
16,600.00	9,295.12	17,092.57	9,662.71	177.80	177.43	-118.41	7,987.66	67.37	772.68	445.56	327.12	2.362	
16,700.00	9,294.57	17,192.55	9,664.22	179.87	179.49	-118.52	8,087.62	67.74	774.08	443.41	330.67	2.341	
16,800.00	9,294.03	17,292.52	9,665.73	181.93	181.55	-118.64	8,187.59	68.12	775.49	441.27	334.22	2.320	
16,900.00	9,293.48	17,392.50	9,667.25	184.00	183.61	-118.76	8,287.56	68.50	776.90	439.13	337.77	2.300	
17,000.00	9,292.93	17,492.48	9,668.76	186.07	185.68	-118.87	8,387.52	68.88	778.32	437.00	341.32	2.280	
17,100.00	9,292.39	17,592.46	9,670.27	188.14	187.75	-118.99	8,487.49	69.26	779.73	434.87	344.86	2.261	
17,200.00	9,291.84	17,692.43	9,671.78	190.22	189.82	-119.10	8,587.45	69.63	781.16	432.75	348.41	2.242	
17,300.00	9,291.30	17,791.79	9,673.31	192.29	191.87	-119.22	8,686.80	70.01	782.59	430.66	351.93	2.224	
17,400.00	9,290.75	17,891.77	9,674.94	194.37	193.95	-119.34	8,786.76	70.36	784.10	428.64	355.46	2.206	
17,500.00	9,290.20	17,991.74	9,676.57	196.45	196.02	-119.46	8,886.72	70.71	785.61	426.63	358.98	2.188	
17,600.00	9,289.66	18,091.72	9,678.19	198.53	198.10	-119.58	8,986.68	71.06	787.12	424.62	362.50	2.171	
17,700.00	9,289.11	18,191.69	9,679.82	200.61	200.18	-119.70	9,086.64	71.41	788.64	422.63	366.02	2.155	
17,800.00	9,288.56	18,291.67	9,681.45	202.69	202.26	-119.82	9,186.60	71.76	790.16	420.63	369.53	2.138	
17,900.00	9,288.02	18,391.64	9,683.08	204.78	204.34	-119.93	9,286.56	72.12	791.69	418.65	373.04	2.122	
18,000.00	9,287.47	18,491.62	9,684.71	206.86	206.42	-120.05	9,386.52	72.47	793.21	416.67	376.55	2.107	
18,100.00	9,286.92	18,591.59	9,686.34	208.95	208.51	-120.17	9,486.49	72.82	794.74	414.69	380.05	2.091	
18,200.00	9,286.38	18,691.57	9,687.96	211.04	210.59	-120.29	9,586.45	73.17	796.28	412.73	383.55	2.076	
18,300.00	9,285.83	18,791.54	9,689.59	213.13	212.68	-120.40	9,686.41	73.52	797.81	410.76	387.05	2.061	
18,400.00	9,285.28	18,891.52	9,691.22	215.22	214.77	-120.52	9,786.37	73.87	799.36	408.81	390.54	2.047	
18,500.00	9,284.74	18,991.49	9,692.85	217.31	216.86	-120.63	9,886.33	74.23	800.90	406.86	394.04	2.033	
18,600.00	9,284.19	19,091.47	9,694.48	219.41	218.95	-120.75	9,986.29	74.58	802.45	404.92	397.52	2.019	
18,700.00	9,283.64	19,191.44	9,696.11	221.50	221.04	-120.86	10,086.25	74.93	804.00	402.99	401.01	2.005	
18,800.00	9,283.10	19,291.42	9,697.74	223.60	223.13	-120.98	10,186.21	75.28	805.55	401.06	404.49	1.992	
18,900.00	9,282.55	19,391.39	9,699.36	225.69	225.23	-121.09	10,286.17	75.63	807.11	399.14	407.97	1.978	
19,000.00	9,282.00	19,491.37	9,700.99	227.79	227.32	-121.21	10,386.14	75.98	808.67	397.23	411.44	1.965	
19,100.00	9,281.46	19,591.34	9,702.62	229.89	229.42	-121.32	10,486.10	76.34	810.23	395.32	414.91	1.953	
19,200.00	9,280.91	19,691.32	9,704.25	231.99	231.52	-121.43	10,586.06	76.69	811.80	393.42	418.38	1.940	
19,300.00	9,280.36	19,791.29	9,705.88	234.09	233.62	-121.54	10,686.02	77.04	813.37	391.53	421.84	1.928	
19,400.00	9,279.82	19,891.27	9,707.51	236.19	235.71	-121.65	10,785.98	77.39	814.94	389.64	425.30	1.916	
19,500.00	9,279.27	19,991.24	9,709.13	238.29	237.82	-121.77	10,885.94	77.74	816.51	387.76	428.75	1.904	
19,549.38	9,279.00	20,040.61	9,709.94	239.33	238.73	-121.82	10,935.31	77.92	817.29	386.98	430.31	1.899 SF	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17													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	2.00	0.00	0.00	0.17	74.93	0.23	74.96				
100.00	100.00	98.00	100.00	0.19	0.19	0.17	74.93	0.23	74.94	74.55	0.38	195.511	
200.00	200.00	198.00	200.00	0.73	0.72	0.17	74.93	0.23	74.94	73.48	1.45	51.615	
300.00	300.00	298.00	300.00	1.27	1.26	0.17	74.93	0.23	74.94	72.41	2.53	29.651	
400.00	400.00	398.00	400.00	1.81	1.80	0.17	74.93	0.23	74.94	71.33	3.60	20.800	
500.00	500.00	498.00	500.00	2.34	2.33	0.17	74.93	0.23	74.94	70.26	4.68	16.018	
600.00	600.00	598.00	600.00	2.88	2.87	0.17	74.93	0.23	74.94	69.18	5.75	13.024	
700.00	699.98	697.30	699.28	3.41	3.40	-64.37	75.39	1.82	74.64	67.83	6.81	10.959	
800.00	799.84	796.58	798.42	3.94	3.92	-64.22	76.78	6.71	73.79	65.93	7.86	9.384	
900.00	899.45	895.85	897.33	4.48	4.45	-63.94	79.11	14.91	72.40	63.46	8.93	8.104	
1,000.00	998.70	995.12	995.87	5.03	5.00	-63.50	82.37	26.40	70.46	60.43	10.03	7.028	
1,100.00	1,097.47	1,094.37	1,093.92	5.60	5.56	-62.88	86.56	41.16	67.98	56.83	11.15	6.098	
1,200.00	1,195.78	1,193.60	1,191.36	6.19	6.15	-61.37	91.68	59.17	65.37	53.07	12.31	5.312	
1,300.00	1,294.07	1,293.40	1,288.93	6.79	6.76	-57.99	97.41	79.35	63.54	50.05	13.49	4.709	
1,400.00	1,392.36	1,393.31	1,386.60	7.40	7.39	-54.40	103.16	99.59	61.95	47.27	14.69	4.218	
1,500.00	1,490.65	1,493.22	1,484.27	8.02	8.03	-50.63	108.91	119.82	60.63	44.75	15.88	3.818	
1,600.00	1,588.93	1,593.13	1,581.94	8.64	8.68	-46.72	114.66	140.05	59.57	42.51	17.06	3.492	
1,700.00	1,687.22	1,693.04	1,679.61	9.27	9.33	-42.68	120.41	160.29	58.80	40.58	18.22	3.227	
1,800.00	1,785.51	1,792.95	1,777.28	9.90	9.99	-38.55	126.15	180.52	58.34	38.97	19.37	3.012	
1,900.00	1,883.80	1,892.86	1,874.96	10.54	10.66	-34.39	131.90	200.76	58.17	37.68	20.50	2.838	
1,902.09	1,885.85	1,894.95	1,877.00	10.55	10.67	-34.30	132.02	201.18	58.17	37.66	20.52	2.835 CC	
2,000.00	1,982.09	1,992.77	1,972.63	11.17	11.32	-30.22	137.65	220.99	58.32	36.72	21.60	2.700	
2,100.00	2,080.37	2,092.68	2,070.30	11.81	11.99	-26.09	143.40	241.23	58.78	36.09	22.69	2.590	
2,200.00	2,178.66	2,192.59	2,167.97	12.45	12.67	-22.05	149.15	261.46	59.53	35.77	23.77	2.505	
2,300.00	2,276.95	2,292.50	2,265.64	13.10	13.34	-18.13	154.90	281.69	60.58	35.74	24.83	2.439 ES	
2,400.00	2,375.24	2,392.41	2,363.31	13.74	14.02	-14.35	160.64	301.93	61.89	35.99	25.90	2.390	
2,500.00	2,473.52	2,492.32	2,460.98	14.38	14.69	-10.75	166.39	322.16	63.47	36.50	26.97	2.354	
2,600.00	2,571.81	2,592.23	2,558.65	15.03	15.37	-7.34	172.14	342.40	65.28	37.24	28.04	2.328	
2,700.00	2,670.10	2,692.14	2,656.32	15.68	16.05	-4.12	177.89	362.63	67.31	38.19	29.12	2.311	
2,800.00	2,768.39	2,792.05	2,753.99	16.32	16.74	-1.10	183.64	382.87	69.54	39.33	30.21	2.302	
2,900.00	2,866.67	2,891.96	2,851.66	16.97	17.42	1.73	189.39	403.10	71.96	40.64	31.32	2.297	
3,000.00	2,964.96	2,991.87	2,949.33	17.62	18.10	4.37	195.13	423.33	74.53	42.09	32.44	2.298	
3,100.00	3,063.25	3,091.78	3,047.00	18.27	18.79	6.83	200.88	443.57	77.26	43.68	33.57	2.301	
3,200.00	3,161.54	3,191.69	3,144.67	18.92	19.47	9.11	206.63	463.80	80.11	45.39	34.72	2.307	
3,300.00	3,259.83	3,291.60	3,242.34	19.57	20.16	11.24	212.38	484.04	83.09	47.21	35.88	2.316	
3,400.00	3,358.11	3,391.51	3,340.01	20.22	20.84	13.21	218.13	504.27	86.17	49.12	37.05	2.326	
3,500.00	3,456.40	3,491.42	3,437.68	20.87	21.53	15.05	223.88	524.51	89.35	51.12	38.23	2.337	
3,600.00	3,554.69	3,591.33	3,535.35	21.52	22.21	16.76	229.62	544.74	92.61	53.19	39.42	2.350	
3,700.00	3,652.98	3,691.24	3,633.02	22.17	22.90	18.35	235.37	564.97	95.95	55.34	40.61	2.363	
3,800.00	3,751.26	3,791.15	3,730.69	22.82	23.59	19.84	241.12	585.21	99.36	57.54	41.82	2.376	
3,900.00	3,849.55	3,891.06	3,828.36	23.48	24.28	21.22	246.87	605.44	102.83	59.80	43.03	2.390	
4,000.00	3,947.84	3,990.97	3,926.04	24.13	24.96	22.52	252.62	625.68	106.35	62.11	44.25	2.404	
4,100.00	4,046.13	4,090.88	4,023.71	24.78	25.65	23.73	258.37	645.91	109.93	64.46	45.47	2.418	
4,200.00	4,144.42	4,190.79	4,121.38	25.43	26.34	24.86	264.11	666.15	113.55	66.86	46.70	2.432	
4,300.00	4,242.70	4,290.70	4,219.05	26.09	27.03	25.92	269.86	686.38	117.22	69.29	47.93	2.446	
4,400.00	4,340.99	4,390.61	4,316.72	26.74	27.72	26.92	275.61	706.61	120.92	71.76	49.16	2.460	
4,500.00	4,439.28	4,490.52	4,414.39	27.39	28.41	27.86	281.36	726.85	124.66	74.26	50.40	2.473	
4,600.00	4,537.57	4,590.43	4,512.06	28.05	29.10	28.75	287.11	747.08	128.43	76.78	51.64	2.487	
4,700.00	4,635.85	4,690.34	4,609.73	28.70	29.79	29.58	292.85	767.32	132.22	79.34	52.89	2.500	
4,800.00	4,734.14	4,790.25	4,707.40	29.35	30.48	30.37	298.60	787.55	136.05	81.92	54.13	2.513	
4,900.00	4,832.43	4,890.16	4,805.07	30.01	31.17	31.11	304.35	807.78	139.90	84.52	55.38	2.526	
5,000.00	4,930.72	4,990.07	4,902.74	30.66	31.86	31.81	310.10	828.02	143.77	87.14	56.63	2.539	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17												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)					
5,100.00	5,029.01	5,089.98	5,000.41	31.31	32.55	32.48	315.85	848.25	147.66	89.78	57.88	2.551	
5,200.00	5,127.29	5,189.89	5,098.08	31.97	33.24	33.11	321.60	868.49	151.57	92.43	59.13	2.563	
5,300.00	5,225.58	5,289.80	5,195.75	32.62	33.93	33.71	327.34	888.72	155.50	95.11	60.39	2.575	
5,400.00	5,323.87	5,389.71	5,293.42	33.27	34.62	34.28	333.09	908.96	159.44	97.80	61.64	2.587	
5,500.00	5,422.16	5,489.62	5,391.09	33.93	35.31	34.83	338.84	929.19	163.40	100.50	62.90	2.598	
5,600.00	5,520.52	5,594.59	5,494.04	34.58	36.01	35.54	344.44	948.90	166.31	102.12	64.19	2.591	
5,700.00	5,619.38	5,700.07	5,598.17	35.19	36.67	36.20	349.03	965.05	168.43	103.01	65.42	2.575	
5,800.00	5,718.71	5,805.61	5,702.91	35.77	37.29	36.69	352.57	977.51	170.09	103.55	66.54	2.556	
5,900.00	5,818.37	5,911.19	5,808.09	36.31	37.85	37.02	355.05	986.25	171.27	103.72	67.55	2.536	
6,000.00	5,918.26	6,016.79	5,913.56	36.82	38.37	37.21	356.47	991.25	171.98	103.53	68.45	2.512	
6,100.00	6,018.25	6,121.50	6,018.25	37.28	38.85	101.80	356.85	992.57	172.19	102.78	69.42	2.481	
6,200.00	6,118.25	6,221.50	6,118.25	37.74	39.28	101.80	356.85	992.57	172.19	101.83	70.37	2.447	
6,300.00	6,218.25	6,321.50	6,218.25	38.19	39.72	101.80	356.85	992.57	172.19	100.87	71.32	2.414	
6,400.00	6,318.25	6,421.50	6,318.25	38.65	40.16	101.80	356.85	992.57	172.19	99.91	72.28	2.382	
6,500.00	6,418.25	6,521.50	6,418.25	39.11	40.60	101.80	356.85	992.57	172.19	98.95	73.24	2.351	
6,600.00	6,518.25	6,621.50	6,518.25	39.57	41.04	101.80	356.85	992.57	172.19	97.99	74.21	2.320	
6,700.00	6,618.25	6,721.50	6,618.25	40.04	41.49	101.80	356.85	992.57	172.19	97.02	75.18	2.291	
6,800.00	6,718.25	6,821.50	6,718.25	40.51	41.94	101.80	356.85	992.57	172.19	96.05	76.15	2.261	
6,900.00	6,818.25	6,921.50	6,818.25	40.97	42.39	101.80	356.85	992.57	172.19	95.07	77.12	2.233	
7,000.00	6,918.25	7,021.50	6,918.25	41.44	42.84	101.80	356.85	992.57	172.19	94.10	78.10	2.205	
7,100.00	7,018.25	7,121.50	7,018.25	41.91	43.30	101.80	356.85	992.57	172.19	93.12	79.08	2.178	
7,200.00	7,118.25	7,221.50	7,118.25	42.39	43.75	101.80	356.85	992.57	172.19	92.14	80.06	2.151	
7,300.00	7,218.25	7,321.50	7,218.25	42.86	44.21	101.80	356.85	992.57	172.19	91.15	81.04	2.125	
7,400.00	7,318.25	7,421.50	7,318.25	43.34	44.67	101.80	356.85	992.57	172.19	90.17	82.03	2.099	
7,500.00	7,418.25	7,521.50	7,418.25	43.81	45.14	101.80	356.85	992.57	172.19	89.18	83.02	2.074	
7,600.00	7,518.25	7,621.50	7,518.25	44.29	45.60	101.80	356.85	992.57	172.19	88.19	84.01	2.050	
7,700.00	7,618.25	7,721.50	7,618.25	44.77	46.06	101.80	356.85	992.57	172.19	87.20	85.00	2.026	
7,800.00	7,718.25	7,821.50	7,718.25	45.25	46.53	101.80	356.85	992.57	172.19	86.20	85.99	2.002	
7,900.00	7,818.25	7,921.50	7,818.25	45.74	47.00	101.80	356.85	992.57	172.19	85.20	86.99	1.979	
8,000.00	7,918.25	8,021.50	7,918.25	46.22	47.47	101.80	356.85	992.57	172.19	84.21	87.99	1.957	
8,100.00	8,018.25	8,121.50	8,018.25	46.70	47.94	101.80	356.85	992.57	172.19	83.21	88.99	1.935	
8,200.00	8,118.25	8,221.50	8,118.25	47.19	48.41	101.80	356.85	992.57	172.19	82.20	89.99	1.913	
8,300.00	8,218.25	8,321.50	8,218.25	47.68	48.89	101.80	356.85	992.57	172.19	81.20	90.99	1.892	
8,400.00	8,318.25	8,421.50	8,318.25	48.17	49.36	101.80	356.85	992.57	172.19	80.20	92.00	1.872	
8,500.00	8,418.25	8,521.50	8,418.25	48.66	49.84	101.80	356.85	992.57	172.19	79.19	93.01	1.851	
8,600.00	8,518.25	8,621.50	8,518.25	49.15	50.32	101.80	356.85	992.57	172.19	78.18	94.01	1.832	
8,648.19	8,566.44	8,669.69	8,566.44	49.38	50.55	102.96	356.85	992.57	172.32	77.95	94.37	1.826	
8,700.00	8,618.24	8,721.49	8,618.24	49.64	50.79	102.98	356.85	992.57	172.35	77.50	94.84	1.817	
8,800.00	8,717.19	8,820.44	8,717.19	50.16	51.27	106.91	356.85	992.57	175.90	80.20	95.71	1.838	
8,900.00	8,812.27	8,915.52	8,812.27	50.70	51.73	114.47	356.85	992.57	187.28	91.34	95.95	1.952	
9,000.00	8,900.60	9,003.85	8,900.60	51.24	52.15	122.95	356.85	992.57	212.07	117.85	94.23	2.251	
9,100.00	8,979.50	9,082.75	8,979.50	51.77	52.53	129.80	356.85	992.57	254.14	164.16	89.97	2.825	
9,200.00	9,046.57	9,149.82	9,046.57	52.30	52.86	133.62	356.85	992.57	313.52	229.30	84.22	3.723	
9,300.00	9,099.76	9,203.01	9,099.76	52.84	53.12	133.54	356.85	992.57	387.55	308.01	79.55	4.872	
9,400.00	9,137.47	9,243.40	9,140.16	53.42	53.31	128.39	356.86	992.57	472.60	392.63	79.98	5.909	
9,500.00	9,158.55	9,570.89	9,449.54	54.06	54.93	154.02	449.79	990.98	558.72	507.64	51.08	10.938	
9,600.00	9,163.48	10,231.80	9,705.94	54.74	58.00	162.79	1,021.50	981.21	568.43	526.29	42.14	13.490	
9,700.00	9,164.82	10,331.62	9,701.25	55.50	58.66	162.61	1,121.19	979.51	562.66	519.46	43.20	13.025	
9,800.00	9,166.16	10,431.43	9,696.55	56.34	59.41	162.43	1,220.88	977.81	556.89	512.49	44.39	12.544	
9,900.00	9,167.50	10,531.25	9,691.86	57.25	60.24	162.24	1,320.58	976.10	551.13	505.41	45.72	12.055	
10,000.00	9,168.84	10,631.07	9,687.16	58.24	61.14	162.04	1,420.27	974.40	545.37	498.21	47.16	11.564	
10,100.00	9,170.18	10,730.88	9,682.47	59.28	62.11	161.85	1,519.96	972.70	539.63	490.91	48.72	11.077	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17													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)		
10,200.00	9,171.52	10,830.70	9,677.77	60.39	63.14	161.65	1,619.65	970.99	533.88	483.51	50.38	10.598	
10,300.00	9,172.86	10,930.52	9,673.08	61.56	64.24	161.44	1,719.34	969.29	528.15	476.02	52.13	10.132	
10,400.00	9,174.20	11,030.34	9,668.38	62.78	65.39	161.23	1,819.04	967.59	522.42	468.45	53.97	9.680	
10,500.00	9,175.54	11,130.15	9,663.69	64.05	66.59	161.01	1,918.73	965.88	516.70	460.80	55.90	9.244	
10,600.00	9,176.88	11,229.97	9,658.99	65.37	67.84	160.80	2,018.42	964.18	510.99	453.09	57.90	8.826	
10,700.00	9,178.22	11,329.79	9,654.30	66.73	69.14	160.57	2,118.11	962.48	505.28	445.31	59.97	8.425	
10,800.00	9,179.56	11,429.61	9,649.60	68.14	70.48	160.34	2,217.81	960.77	499.58	437.47	62.12	8.043	
10,900.00	9,180.91	11,529.42	9,644.91	69.58	71.85	160.11	2,317.50	959.07	493.89	429.58	64.32	7.679	
11,000.00	9,182.25	11,618.10	9,641.58	71.06	73.11	159.93	2,406.10	957.56	489.13	422.72	66.41	7.365	
11,100.00	9,183.59	11,707.12	9,640.85	72.58	74.39	159.85	2,495.10	956.06	487.08	418.63	68.45	7.116	
11,200.00	9,184.93	11,807.11	9,640.95	74.13	75.86	159.79	2,595.07	954.38	485.93	415.31	70.62	6.881	
11,300.00	9,186.27	11,907.10	9,641.06	75.70	77.36	159.74	2,695.05	952.69	484.77	411.95	72.82	6.657	
11,400.00	9,187.61	12,007.09	9,641.16	77.31	78.89	159.69	2,795.03	951.01	483.61	408.55	75.06	6.443	
11,500.00	9,188.95	12,107.09	9,641.26	78.94	80.46	159.64	2,895.01	949.33	482.46	405.13	77.33	6.239	
11,600.00	9,190.29	12,207.08	9,641.36	80.60	82.05	159.58	2,994.99	947.64	481.30	401.67	79.63	6.044	
11,700.00	9,191.63	12,307.07	9,641.46	82.28	83.66	159.53	3,094.96	945.96	480.15	398.19	81.96	5.858	
11,800.00	9,192.97	12,407.06	9,641.57	83.99	85.30	159.48	3,194.94	944.28	479.00	394.68	84.32	5.681	
11,900.00	9,194.31	12,507.06	9,641.67	85.71	86.97	159.42	3,294.92	942.59	477.84	391.15	86.70	5.512	
12,000.00	9,195.65	12,607.05	9,641.77	87.46	88.65	159.37	3,394.90	940.91	476.69	387.59	89.10	5.350	
12,100.00	9,196.99	12,707.04	9,641.87	89.22	90.36	159.31	3,494.88	939.23	475.54	384.02	91.52	5.196	
12,200.00	9,198.33	12,807.03	9,641.98	91.00	92.08	159.26	3,594.86	937.54	474.38	380.42	93.96	5.049	
12,286.52	9,199.49	12,887.73	9,642.55	92.55	93.48	159.24	3,675.53	936.18	473.88	377.90	95.99	4.937	
12,300.00	9,199.68	12,901.21	9,642.75	92.79	93.72	159.24	3,689.01	935.95	473.89	377.58	96.31	4.920	
12,400.00	9,201.02	13,001.21	9,644.17	94.61	95.48	159.24	3,788.99	934.24	473.97	375.26	98.72	4.801	
12,500.00	9,202.36	13,101.21	9,645.60	96.43	97.26	159.25	3,888.97	932.53	474.05	372.91	101.13	4.687	
12,600.00	9,203.70	13,201.21	9,647.02	98.27	99.05	159.25	3,988.94	930.83	474.12	370.56	103.56	4.578	
12,700.00	9,205.04	13,301.21	9,648.44	100.12	100.86	159.25	4,088.92	929.12	474.20	368.19	106.00	4.473	
12,800.00	9,206.38	13,401.21	9,649.87	101.99	102.68	159.26	4,188.89	927.41	474.27	365.82	108.46	4.373	
12,900.00	9,207.72	13,501.21	9,651.29	103.87	104.52	159.26	4,288.87	925.71	474.35	363.43	110.92	4.277	
13,000.00	9,209.06	13,601.21	9,652.72	105.75	106.37	159.27	4,388.84	924.00	474.43	361.03	113.39	4.184	
13,100.00	9,210.40	13,701.21	9,654.14	107.65	108.23	159.27	4,488.82	922.29	474.50	358.63	115.87	4.095	
13,200.00	9,211.74	13,801.21	9,655.56	109.56	110.10	159.27	4,588.79	920.59	474.58	356.22	118.36	4.010	
13,300.00	9,213.08	13,901.21	9,656.99	111.48	111.98	159.28	4,688.77	918.88	474.65	353.79	120.86	3.927	
13,400.00	9,214.42	14,001.21	9,658.41	113.40	113.87	159.28	4,788.74	917.17	474.73	351.37	123.36	3.848	
13,500.00	9,215.76	14,101.21	9,659.84	115.34	115.77	159.29	4,888.72	915.47	474.81	348.93	125.87	3.772	
13,600.00	9,217.10	14,201.21	9,661.26	117.28	117.68	159.29	4,988.69	913.76	474.88	346.49	128.39	3.699	
13,700.00	9,218.45	14,301.21	9,662.68	119.23	119.60	159.30	5,088.67	912.05	474.96	344.04	130.92	3.628	
13,800.00	9,219.79	14,401.21	9,664.11	121.19	121.52	159.30	5,188.64	910.35	475.03	341.59	133.44	3.560	
13,900.00	9,221.13	14,501.21	9,665.53	123.15	123.46	159.30	5,288.62	908.64	475.11	339.13	135.98	3.494	
14,000.00	9,222.47	14,601.21	9,666.96	125.12	125.40	159.31	5,388.59	906.93	475.19	336.67	138.52	3.430	
14,100.00	9,223.81	14,701.21	9,668.38	127.10	127.35	159.31	5,488.57	905.23	475.26	334.20	141.06	3.369	
14,200.00	9,225.15	14,801.21	9,669.81	129.08	129.30	159.32	5,588.54	903.52	475.34	331.73	143.61	3.310	
14,300.00	9,226.49	14,901.21	9,671.23	131.07	131.27	159.32	5,688.52	901.81	475.41	329.25	146.16	3.253	
14,400.00	9,227.83	15,001.21	9,672.65	133.06	133.23	159.33	5,788.50	900.11	475.49	326.77	148.72	3.197	
14,500.00	9,229.17	15,101.21	9,674.08	135.06	135.21	159.33	5,888.47	898.40	475.57	324.28	151.28	3.144	
14,600.00	9,230.51	15,198.09	9,675.50	137.06	137.13	159.32	5,988.33	896.92	475.53	321.42	154.12	3.086	
14,700.00	9,233.89	15,293.59	9,677.45	139.07	139.02	159.24	6,080.80	897.45	474.47	317.28	157.19	3.018	
14,800.00	9,237.56	15,393.57	9,679.58	141.08	141.00	159.17	6,180.76	898.39	473.04	313.15	159.89	2.959	
14,900.00	9,241.22	15,493.56	9,681.72	143.09	142.99	159.10	6,280.72	899.33	471.61	309.02	162.59	2.901	
15,000.00	9,244.89	15,593.55	9,683.86	145.11	144.99	159.04	6,380.68	900.27	470.18	304.88	165.31	2.844	
15,100.00	9,248.55	15,693.54	9,686.00	147.13	146.99	158.97	6,480.65	901.21	468.76	300.73	168.02	2.790	
15,200.00	9,252.22	15,793.53	9,688.13	149.16	148.99	158.90	6,580.61	902.15	467.33	296.58	170.75	2.737	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 4H - OH - Plan 1 06-16-17													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		
15,300.00	9,255.88	15,893.52	9,690.27	151.18	151.00	158.83	6,680.57	903.09	465.91	292.42	173.49	2.686		
15,400.00	9,259.55	15,993.50	9,692.41	153.22	153.01	158.77	6,780.53	904.03	464.48	288.26	176.23	2.636		
15,500.00	9,263.21	16,093.49	9,694.54	155.25	155.03	158.70	6,880.49	904.97	463.06	284.08	178.98	2.587		
15,600.00	9,266.88	16,193.48	9,696.68	157.29	157.05	158.63	6,980.45	905.90	461.64	279.91	181.73	2.540		
15,700.00	9,270.54	16,293.47	9,698.82	159.33	159.07	158.56	7,080.41	906.84	460.21	275.72	184.49	2.494		
15,800.00	9,274.21	16,393.46	9,700.95	161.37	161.10	158.49	7,180.37	907.78	458.79	271.53	187.26	2.450		
15,900.00	9,277.87	16,493.45	9,703.09	163.42	163.13	158.42	7,280.33	908.72	457.37	267.33	190.04	2.407		
16,000.00	9,281.54	16,593.43	9,705.23	165.47	165.16	158.35	7,380.30	909.66	455.95	263.13	192.82	2.365		
16,100.00	9,285.20	16,696.45	9,707.36	167.52	167.25	158.27	7,483.28	910.62	454.48	258.81	195.67	2.323		
16,200.00	9,288.87	16,799.65	9,708.15	169.57	169.36	158.14	7,586.47	911.51	451.74	253.11	198.64	2.274		
16,300.00	9,292.53	16,899.60	9,708.83	171.63	171.40	158.01	7,686.42	912.36	448.95	247.37	201.58	2.227		
16,400.00	9,295.57	16,999.57	9,709.52	173.68	173.44	157.91	7,786.39	913.22	446.74	242.73	204.01	2.190		
16,427.16	9,295.92	17,026.73	9,709.71	174.24	173.99	157.91	7,813.55	913.45	446.59	241.97	204.62	2.183		
16,500.00	9,295.67	17,099.57	9,710.21	175.74	175.48	157.94	7,886.38	914.07	447.28	241.17	206.11	2.170		
16,600.00	9,295.12	17,199.56	9,710.89	177.80	177.53	158.00	7,986.36	914.92	448.42	239.80	208.62	2.149		
16,700.00	9,294.57	17,299.55	9,711.58	179.87	179.58	158.06	8,086.35	915.78	449.56	238.43	211.13	2.129		
16,800.00	9,294.03	17,399.55	9,712.27	181.93	181.64	158.12	8,186.34	916.63	450.71	237.07	213.64	2.110		
16,900.00	9,293.48	17,499.54	9,712.95	184.00	183.69	158.18	8,286.32	917.49	451.85	235.71	216.14	2.091		
17,000.00	9,292.93	17,599.53	9,713.64	186.07	185.75	158.24	8,386.31	918.34	452.99	234.34	218.65	2.072		
17,100.00	9,292.39	17,699.52	9,714.33	188.14	187.81	158.30	8,486.30	919.19	454.14	232.98	221.15	2.053		
17,200.00	9,291.84	17,799.52	9,715.01	190.22	189.87	158.35	8,586.28	920.05	455.28	231.62	223.66	2.036		
17,300.00	9,291.30	17,899.51	9,715.70	192.29	191.93	158.41	8,686.27	920.90	456.42	230.26	226.16	2.018		
17,400.00	9,290.75	17,999.50	9,716.38	194.37	194.00	158.47	8,786.26	921.76	457.57	228.91	228.66	2.001		
17,500.00	9,290.20	18,099.49	9,717.07	196.45	196.06	158.53	8,886.24	922.61	458.71	227.55	231.16	1.984		
17,600.00	9,289.66	18,199.49	9,717.76	198.53	198.13	158.58	8,986.23	923.46	459.86	226.19	233.66	1.968		
17,700.00	9,289.11	18,299.48	9,718.44	200.61	200.20	158.64	9,086.22	924.32	461.01	224.84	236.16	1.952		
17,800.00	9,288.56	18,399.47	9,719.13	202.69	202.28	158.70	9,186.20	925.17	462.15	223.49	238.66	1.936		
17,900.00	9,288.02	18,499.46	9,719.82	204.78	204.35	158.75	9,286.19	926.03	463.30	222.14	241.16	1.921		
18,000.00	9,287.47	18,599.45	9,720.50	206.86	206.43	158.81	9,386.17	926.88	464.45	220.79	243.66	1.906		
18,100.00	9,286.92	18,699.45	9,721.19	208.95	208.50	158.86	9,486.16	927.73	465.59	219.44	246.15	1.891		
18,200.00	9,286.38	18,799.44	9,721.88	211.04	210.58	158.92	9,586.15	928.59	466.74	218.10	248.65	1.877		
18,300.00	9,285.83	18,895.51	9,723.12	213.13	212.58	159.00	9,682.21	929.41	468.45	217.43	251.03	1.866		
18,400.00	9,285.28	18,995.49	9,724.70	215.22	214.66	159.09	9,782.17	930.27	470.44	217.03	253.41	1.856		
18,500.00	9,284.74	19,095.47	9,726.28	217.31	216.74	159.18	9,882.13	931.13	472.43	216.63	255.80	1.847		
18,600.00	9,284.19	19,195.45	9,727.86	219.41	218.83	159.27	9,982.09	931.99	474.41	216.23	258.18	1.838		
18,700.00	9,283.64	19,295.42	9,729.44	221.50	220.91	159.36	10,082.05	932.85	476.40	215.84	260.56	1.828		
18,800.00	9,283.10	19,395.40	9,731.02	223.60	223.00	159.45	10,182.02	933.71	478.40	215.45	262.95	1.819		
18,900.00	9,282.55	19,495.38	9,732.60	225.69	225.09	159.54	10,281.98	934.57	480.39	215.06	265.33	1.811		
19,000.00	9,282.00	19,595.36	9,734.18	227.79	227.18	159.63	10,381.94	935.43	482.38	214.68	267.71	1.802		
19,100.00	9,281.46	19,695.33	9,735.76	229.89	229.27	159.72	10,481.90	936.29	484.38	214.29	270.08	1.793		
19,200.00	9,280.91	19,795.31	9,737.34	231.99	231.36	159.81	10,581.86	937.14	486.37	213.91	272.46	1.785		
19,300.00	9,280.36	19,895.29	9,738.92	234.09	233.45	159.89	10,681.82	938.00	488.37	213.53	274.84	1.777		
19,400.00	9,279.82	19,995.27	9,740.50	236.19	235.54	159.98	10,781.78	938.86	490.37	213.15	277.21	1.769		
19,500.00	9,279.27	20,095.24	9,742.08	238.29	237.64	160.06	10,881.74	939.72	492.37	212.78	279.59	1.761		
19,549.38	9,279.00	20,144.62	9,742.86	239.33	238.67	160.10	10,931.11	940.15	493.35	212.59	280.76	1.757 SF		

CC - Min centre to center distance or covergent 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17													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	2.00	0.00	0.00	0.11	99.67	0.20	99.69				
100.00	100.00	98.00	100.00	0.19	0.19	0.11	99.67	0.20	99.67	99.29	0.38	260.048	
200.00	200.00	198.00	200.00	0.73	0.72	0.11	99.67	0.20	99.67	98.22	1.45	68.653	
300.00	300.00	298.00	300.00	1.27	1.26	0.11	99.67	0.20	99.67	97.14	2.53	39.439	
400.00	400.00	398.00	400.00	1.81	1.80	0.11	99.67	0.20	99.67	96.07	3.60	27.666	
500.00	500.00	498.00	500.00	2.34	2.33	0.11	99.67	0.20	99.67	94.99	4.68	21.306	
600.00	600.00	598.00	600.00	2.88	2.87	0.11	99.67	0.20	99.67	93.92	5.75	17.324 CC	
700.00	699.98	695.71	697.69	3.41	3.39	-68.00	100.73	-0.99	100.04	93.24	6.81	14.697 ES	
800.00	799.84	792.90	794.76	3.94	3.91	-70.60	103.99	-4.65	101.71	93.85	7.86	12.947	
900.00	899.45	889.15	890.66	4.48	4.43	-77.75	109.37	-10.69	105.96	97.05	8.91	11.889	
1,000.00	998.70	987.02	988.00	5.03	4.97	-86.48	116.16	-18.31	113.40	103.41	9.99	11.349	
1,100.00	1,097.47	1,084.61	1,085.05	5.60	5.51	-95.49	122.95	-25.93	123.61	112.53	11.08	11.155	
1,200.00	1,195.78	1,181.65	1,181.56	6.19	6.05	-104.12	129.70	-33.51	137.18	125.01	12.17	11.271	
1,300.00	1,294.07	1,278.65	1,278.02	6.79	6.59	-111.23	136.45	-41.09	153.44	140.18	13.26	11.573	
1,400.00	1,392.36	1,375.65	1,374.49	7.40	7.14	-116.95	143.20	-48.66	171.62	157.27	14.35	11.964	
1,500.00	1,490.65	1,472.65	1,470.96	8.02	7.69	-121.56	149.95	-56.23	191.16	175.73	15.43	12.389	
1,600.00	1,588.93	1,569.65	1,567.43	8.64	8.24	-125.32	156.69	-63.81	211.69	195.18	16.52	12.818	
1,700.00	1,687.22	1,666.65	1,663.90	9.27	8.79	-128.41	163.44	-71.38	232.96	215.35	17.60	13.234	
1,800.00	1,785.51	1,763.65	1,760.37	9.90	9.34	-130.98	170.19	-78.96	254.76	236.07	18.69	13.630	
1,900.00	1,883.80	1,860.65	1,856.84	10.54	9.89	-133.15	176.94	-86.53	276.99	257.21	19.78	14.003	
2,000.00	1,982.09	1,957.65	1,953.30	11.17	10.44	-135.00	183.68	-94.10	299.53	278.66	20.87	14.351	
2,100.00	2,080.37	2,054.65	2,049.77	11.81	11.00	-136.58	190.43	-101.68	322.34	300.37	21.97	14.675	
2,200.00	2,178.66	2,151.65	2,146.24	12.45	11.55	-137.96	197.18	-109.25	345.35	322.29	23.06	14.976	
2,300.00	2,276.95	2,248.65	2,242.71	13.10	12.11	-139.17	203.93	-116.83	368.52	344.37	24.16	15.256	
2,400.00	2,375.24	2,345.65	2,339.18	13.74	12.66	-140.24	210.67	-124.40	391.84	366.58	25.25	15.517	
2,500.00	2,473.52	2,442.65	2,435.65	14.38	13.22	-141.18	217.42	-131.98	415.26	388.91	26.35	15.759	
2,600.00	2,571.81	2,539.65	2,532.11	15.03	13.77	-142.03	224.17	-139.55	438.79	411.34	27.45	15.985	
2,700.00	2,670.10	2,636.65	2,628.58	15.68	14.33	-142.79	230.92	-147.12	462.39	433.84	28.55	16.196	
2,800.00	2,768.39	2,733.65	2,725.05	16.32	14.88	-143.47	237.67	-154.70	486.07	456.42	29.65	16.393	
2,900.00	2,866.67	2,830.65	2,821.52	16.97	15.44	-144.09	244.41	-162.27	509.80	479.05	30.75	16.577	
3,000.00	2,964.96	2,927.65	2,917.99	17.62	16.00	-144.66	251.16	-169.85	533.59	501.73	31.86	16.750	
3,100.00	3,063.25	3,024.65	3,014.46	18.27	16.55	-145.18	257.91	-177.42	557.42	524.46	32.96	16.912	
3,200.00	3,161.54	3,121.65	3,110.93	18.92	17.11	-145.65	264.66	-184.99	581.29	547.23	34.06	17.065	
3,300.00	3,259.83	3,218.66	3,207.39	19.57	17.67	-146.09	271.40	-192.57	605.20	570.03	35.17	17.209	
3,400.00	3,358.11	3,315.66	3,303.86	20.22	18.22	-146.50	278.15	-200.14	629.13	592.86	36.27	17.345	
3,500.00	3,456.40	3,412.66	3,400.33	20.87	18.78	-146.87	284.90	-207.72	653.10	615.72	37.38	17.473	
3,600.00	3,554.69	3,509.66	3,496.80	21.52	19.34	-147.22	291.65	-215.29	677.08	638.60	38.48	17.594	
3,700.00	3,652.98	3,606.66	3,593.27	22.17	19.89	-147.55	298.39	-222.87	701.10	661.51	39.59	17.709	
3,800.00	3,751.26	3,703.66	3,689.74	22.82	20.45	-147.85	305.14	-230.44	725.13	684.43	40.70	17.818	
3,900.00	3,849.55	3,800.66	3,786.20	23.48	21.01	-148.13	311.89	-238.01	749.17	707.37	41.80	17.922	
4,000.00	3,947.84	3,897.66	3,882.67	24.13	21.57	-148.40	318.64	-245.59	773.24	730.33	42.91	18.020	
4,100.00	4,046.13	3,994.66	3,979.14	24.78	22.12	-148.65	325.39	-253.16	797.32	753.30	44.02	18.114	
4,200.00	4,144.42	4,091.66	4,075.61	25.43	22.68	-148.89	332.13	-260.74	821.41	776.29	45.13	18.203	
4,300.00	4,242.70	4,188.66	4,172.08	26.09	23.24	-149.11	338.88	-268.31	845.52	799.29	46.23	18.288	
4,400.00	4,340.99	4,285.66	4,268.55	26.74	23.80	-149.32	345.63	-275.88	869.64	822.29	47.34	18.370	
4,500.00	4,439.28	4,382.66	4,365.02	27.39	24.35	-149.52	352.38	-283.46	893.76	845.31	48.45	18.447	
4,600.00	4,537.57	4,479.66	4,461.48	28.05	24.91	-149.71	359.12	-291.03	917.90	868.34	49.56	18.522	
4,700.00	4,635.85	4,601.55	4,582.85	28.70	25.60	-149.99	366.54	-299.36	941.11	890.31	50.79	18.528	
4,800.00	4,734.14	4,734.06	4,715.20	29.35	26.31	-150.49	370.79	-304.13	960.93	908.87	52.06	18.458	
4,900.00	4,832.43	4,851.30	4,832.43	30.01	26.92	-151.09	371.39	-304.80	977.60	924.37	53.23	18.366	
5,000.00	4,930.72	4,949.59	4,930.72	30.66	27.41	-151.61	371.39	-304.80	993.83	939.53	54.30	18.302	
5,100.00	5,029.01	5,047.87	5,029.01	31.31	27.91	-152.10	371.39	-304.80	1,010.14	954.77	55.37	18.242	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17												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
5,200.00	5,127.29	5,146.16	5,127.29	31.97	28.41	-152.58	371.39	-304.80	1,026.52	970.08	56.45	18.186
5,300.00	5,225.58	5,244.45	5,225.58	32.62	28.91	-153.04	371.39	-304.80	1,042.97	985.45	57.52	18.133
5,400.00	5,323.87	5,342.74	5,323.87	33.27	29.41	-153.49	371.39	-304.80	1,059.49	1,000.89	58.59	18.082
5,500.00	5,422.16	5,441.02	5,422.16	33.93	29.92	-153.93	371.39	-304.80	1,076.06	1,016.40	59.67	18.035
5,600.00	5,520.52	5,539.39	5,520.52	34.58	30.42	-154.41	371.39	-304.80	1,092.32	1,031.48	60.84	17.954
5,700.00	5,619.38	5,638.25	5,619.38	35.19	30.93	-154.87	371.39	-304.80	1,105.92	1,043.85	62.07	17.817
5,800.00	5,718.71	5,737.57	5,718.71	35.77	31.44	-155.21	371.39	-304.80	1,116.40	1,053.17	63.24	17.654
5,900.00	5,818.37	5,837.24	5,818.37	36.31	31.95	-155.44	371.39	-304.80	1,123.75	1,059.41	64.34	17.467
6,000.00	5,918.26	5,937.13	5,918.26	36.82	32.47	-155.57	371.39	-304.80	1,127.94	1,062.57	65.36	17.256
6,100.00	6,018.25	6,037.12	6,018.25	37.28	32.98	-91.05	371.39	-304.80	1,129.00	1,062.63	66.36	17.012
6,200.00	6,118.25	6,137.12	6,118.25	37.74	33.50	-91.05	371.39	-304.80	1,129.00	1,061.62	67.37	16.757
6,300.00	6,218.25	6,237.12	6,218.25	38.19	34.02	-91.05	371.39	-304.80	1,129.00	1,060.61	68.39	16.509
6,400.00	6,318.25	6,337.12	6,318.25	38.65	34.54	-91.05	371.39	-304.80	1,129.00	1,059.60	69.40	16.268
6,500.00	6,418.25	6,437.12	6,418.25	39.11	35.05	-91.05	371.39	-304.80	1,129.00	1,058.58	70.42	16.033
6,600.00	6,518.25	6,537.12	6,518.25	39.57	35.57	-91.05	371.39	-304.80	1,129.00	1,057.56	71.43	15.805
6,700.00	6,618.25	6,637.12	6,618.25	40.04	36.09	-91.05	371.39	-304.80	1,129.00	1,056.54	72.45	15.582
6,800.00	6,718.25	6,737.12	6,718.25	40.51	36.61	-91.05	371.39	-304.80	1,129.00	1,055.52	73.47	15.366
6,900.00	6,818.25	6,837.12	6,818.25	40.97	37.14	-91.05	371.39	-304.80	1,129.00	1,054.50	74.50	15.155
7,000.00	6,918.25	6,937.12	6,918.25	41.44	37.66	-91.05	371.39	-304.80	1,129.00	1,053.48	75.52	14.950
7,100.00	7,018.25	7,037.12	7,018.25	41.91	38.18	-91.05	371.39	-304.80	1,129.00	1,052.45	76.55	14.749
7,200.00	7,118.25	7,137.12	7,118.25	42.39	38.70	-91.05	371.39	-304.80	1,129.00	1,051.43	77.57	14.554
7,300.00	7,218.25	7,237.12	7,218.25	42.86	39.22	-91.05	371.39	-304.80	1,129.00	1,050.40	78.60	14.364
7,400.00	7,318.25	7,337.12	7,318.25	43.34	39.75	-91.05	371.39	-304.80	1,129.00	1,049.37	79.63	14.178
7,500.00	7,418.25	7,437.12	7,418.25	43.81	40.27	-91.05	371.39	-304.80	1,129.00	1,048.34	80.66	13.997
7,600.00	7,518.25	7,537.12	7,518.25	44.29	40.79	-91.05	371.39	-304.80	1,129.00	1,047.31	81.69	13.821
7,700.00	7,618.25	7,637.12	7,618.25	44.77	41.32	-91.05	371.39	-304.80	1,129.00	1,046.28	82.72	13.648
7,800.00	7,718.25	7,737.12	7,718.25	45.25	41.84	-91.05	371.39	-304.80	1,129.00	1,045.24	83.76	13.480
7,900.00	7,818.25	7,837.12	7,818.25	45.74	42.37	-91.05	371.39	-304.80	1,129.00	1,044.21	84.79	13.315
8,000.00	7,918.25	7,937.12	7,918.25	46.22	42.89	-91.05	371.39	-304.80	1,129.00	1,043.17	85.83	13.155
8,100.00	8,018.25	8,037.12	8,018.25	46.70	43.42	-91.05	371.39	-304.80	1,129.00	1,042.14	86.86	12.998
8,200.00	8,118.25	8,137.12	8,118.25	47.19	43.94	-91.05	371.39	-304.80	1,129.00	1,041.10	87.90	12.844
8,300.00	8,218.25	8,237.12	8,218.25	47.68	44.47	-91.05	371.39	-304.80	1,129.00	1,040.06	88.94	12.694
8,400.00	8,318.25	8,337.12	8,318.25	48.17	45.00	-91.05	371.39	-304.80	1,129.00	1,039.02	89.98	12.548
8,500.00	8,418.25	8,437.12	8,418.25	48.66	45.52	-91.05	371.39	-304.80	1,129.00	1,037.98	91.02	12.404
8,600.00	8,518.25	8,537.12	8,518.25	49.15	46.05	-91.05	371.39	-304.80	1,129.00	1,036.94	92.06	12.264
8,650.78	8,569.03	8,587.90	8,569.03	49.40	46.32	-90.11	371.39	-304.80	1,129.00	1,036.44	92.56	12.197
8,700.00	8,618.24	8,637.11	8,618.24	49.64	46.58	-90.11	371.39	-304.80	1,129.00	1,035.92	93.07	12.130
8,800.00	8,717.19	8,736.05	8,717.19	50.16	47.10	-90.78	371.39	-304.80	1,129.11	1,034.97	94.13	11.995
8,900.00	8,812.27	8,831.14	8,812.27	50.70	47.60	-92.16	371.39	-304.80	1,129.95	1,034.74	95.21	11.868
9,000.00	8,900.60	8,919.47	8,900.60	51.24	48.07	-93.96	371.39	-304.80	1,132.81	1,036.56	96.26	11.769
9,100.00	8,979.50	8,998.37	8,979.50	51.77	48.48	-95.72	371.39	-304.80	1,139.47	1,042.25	97.22	11.720
9,200.00	9,046.57	9,065.43	9,046.57	52.30	48.84	-96.96	371.39	-304.80	1,151.82	1,053.71	98.11	11.740
9,300.00	9,099.76	9,118.63	9,099.76	52.84	49.12	-97.21	371.39	-304.80	1,171.49	1,072.49	99.00	11.833
9,400.00	9,137.47	9,156.34	9,137.47	53.42	49.32	-96.05	371.39	-304.80	1,199.49	1,099.45	100.04	11.990
9,500.00	9,158.55	9,177.42	9,158.55	54.06	49.43	-93.19	371.39	-304.80	1,235.89	1,134.76	101.12	12.222
9,600.00	9,163.48	9,182.34	9,163.48	54.74	49.46	-90.41	371.39	-304.80	1,279.74	1,177.85	101.90	12.559
9,700.00	9,164.82	9,183.68	9,164.82	55.50	49.46	-90.48	371.39	-304.80	1,329.76	1,227.03	102.72	12.945
9,800.00	9,166.16	9,185.02	9,166.16	56.34	49.47	-90.55	371.39	-304.80	1,385.19	1,281.57	103.62	13.368
9,900.00	9,167.50	10,696.70	9,981.79	57.25	58.78	-125.95	1,303.77	-313.97	1,386.91	1,289.52	97.40	14.240
10,000.00	9,168.84	10,796.62	9,979.12	58.24	59.72	-125.83	1,403.64	-314.95	1,383.98	1,284.72	99.26	13.943
10,100.00	9,170.18	10,896.54	9,976.44	59.28	60.72	-125.71	1,503.52	-315.93	1,381.05	1,279.81	101.24	13.641
10,200.00	9,171.52	10,996.45	9,973.77	60.39	61.77	-125.59	1,603.40	-316.91	1,378.12	1,274.80	103.33	13.338

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis 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	9,172.86	11,096.37	9,971.10	61.56	62.88	-125.48	1,703.27	-317.90	1,375.21	1,269.69	105.51	13.033	
10,400.00	9,174.20	11,196.29	9,968.43	62.78	64.05	-125.36	1,803.15	-318.88	1,372.29	1,264.50	107.80	12.730	
10,500.00	9,175.54	11,296.20	9,965.76	64.05	65.27	-125.24	1,903.02	-319.86	1,369.39	1,259.22	110.17	12.430	
10,600.00	9,176.88	11,396.12	9,963.08	65.37	66.53	-125.12	2,002.90	-320.84	1,366.49	1,253.86	112.63	12.132	
10,700.00	9,178.22	11,496.04	9,960.41	66.73	67.84	-125.00	2,102.78	-321.82	1,363.59	1,248.42	115.17	11.839	
10,800.00	9,179.56	11,595.96	9,957.74	68.14	69.19	-124.88	2,202.65	-322.81	1,360.70	1,242.91	117.79	11.552	
10,900.00	9,180.91	11,695.87	9,955.07	69.58	70.59	-124.75	2,302.53	-323.79	1,357.82	1,237.34	120.48	11.270	
11,000.00	9,182.25	11,804.03	9,952.01	71.06	72.13	-124.62	2,410.64	-324.85	1,354.88	1,231.52	123.36	10.983	
11,100.00	9,183.59	11,904.21	9,948.20	72.58	73.61	-124.45	2,510.74	-325.85	1,351.38	1,225.14	126.24	10.705	
11,200.00	9,184.93	12,004.08	9,944.41	74.13	75.11	-124.29	2,610.53	-326.83	1,347.89	1,218.72	129.17	10.435	
11,300.00	9,186.27	12,103.94	9,940.62	75.70	76.65	-124.13	2,710.32	-327.82	1,344.42	1,212.26	132.16	10.173	
11,400.00	9,187.61	12,203.81	9,936.83	77.31	78.22	-123.96	2,810.11	-328.81	1,340.95	1,205.75	135.20	9.918	
11,500.00	9,188.95	12,303.68	9,933.04	78.94	79.81	-123.80	2,909.90	-329.80	1,337.50	1,199.19	138.30	9.671	
11,600.00	9,190.29	12,403.54	9,929.25	80.60	81.43	-123.63	3,009.69	-330.79	1,334.05	1,192.60	141.45	9.431	
11,700.00	9,191.63	12,503.41	9,925.46	82.28	83.07	-123.46	3,109.48	-331.78	1,330.62	1,185.97	144.65	9.199	
11,800.00	9,192.97	12,603.27	9,921.67	83.99	84.74	-123.30	3,209.26	-332.76	1,327.20	1,179.31	147.89	8.974	
11,900.00	9,194.31	12,703.14	9,917.88	85.71	86.43	-123.13	3,309.05	-333.75	1,323.79	1,172.62	151.18	8.757	
12,000.00	9,195.65	12,803.00	9,914.09	87.46	88.14	-122.96	3,408.84	-334.74	1,320.39	1,165.89	154.50	8.546	
12,100.00	9,196.99	12,902.87	9,910.30	89.22	89.86	-122.79	3,508.63	-335.73	1,317.01	1,159.14	157.87	8.343	
12,200.00	9,198.33	13,002.73	9,906.51	91.00	91.61	-122.62	3,608.42	-336.72	1,313.63	1,152.37	161.27	8.146	
12,300.00	9,199.68	13,102.60	9,902.72	92.79	93.37	-122.44	3,708.21	-337.71	1,310.27	1,145.56	164.71	7.955	
12,400.00	9,201.02	13,202.47	9,898.93	94.61	95.15	-122.27	3,808.00	-338.69	1,306.92	1,138.74	168.18	7.771	
12,500.00	9,202.36	13,302.33	9,895.14	96.43	96.95	-122.10	3,907.79	-339.68	1,303.58	1,131.90	171.68	7.593	
12,600.00	9,203.70	13,393.78	9,891.89	98.27	98.60	-121.94	3,999.17	-340.59	1,300.40	1,125.35	175.05	7.429	
12,700.00	9,205.04	13,474.38	9,890.94	100.12	100.07	-121.88	4,079.76	-341.39	1,298.47	1,120.32	178.14	7.289	
12,800.00	9,206.38	13,570.85	9,891.63	101.99	101.83	-121.87	4,176.22	-342.35	1,297.53	1,116.09	181.45	7.151	
12,900.00	9,207.72	13,670.85	9,892.38	103.87	103.67	-121.87	4,276.21	-343.35	1,296.62	1,111.80	184.82	7.015	
13,000.00	9,209.06	13,770.84	9,893.13	105.75	105.53	-121.86	4,376.20	-344.34	1,295.71	1,107.49	188.22	6.884	
13,100.00	9,210.40	13,870.84	9,893.88	107.65	107.39	-121.86	4,476.19	-345.34	1,294.80	1,103.16	191.64	6.757	
13,200.00	9,211.74	13,970.83	9,894.63	109.56	109.26	-121.85	4,576.18	-346.33	1,293.89	1,098.82	195.07	6.633	
13,300.00	9,213.08	14,070.83	9,895.38	111.48	111.15	-121.85	4,676.16	-347.33	1,292.98	1,094.46	198.52	6.513	
13,400.00	9,214.42	14,170.83	9,896.13	113.40	113.04	-121.84	4,776.15	-348.33	1,292.07	1,090.08	201.99	6.397	
13,500.00	9,215.76	14,270.82	9,896.88	115.34	114.95	-121.83	4,876.14	-349.32	1,291.16	1,085.69	205.47	6.284	
13,600.00	9,217.10	14,370.82	9,897.63	117.28	116.86	-121.83	4,976.13	-350.32	1,290.25	1,081.28	208.97	6.174	
13,700.00	9,218.45	14,470.81	9,898.38	119.23	118.78	-121.82	5,076.12	-351.31	1,289.34	1,076.86	212.48	6.068	
13,800.00	9,219.79	14,570.81	9,899.13	121.19	120.71	-121.82	5,176.10	-352.31	1,288.43	1,072.42	216.01	5.965	
13,900.00	9,221.13	14,670.80	9,899.88	123.15	122.65	-121.81	5,276.09	-353.31	1,287.52	1,067.98	219.54	5.865	
14,000.00	9,222.47	14,770.80	9,900.63	125.12	124.59	-121.81	5,376.08	-354.30	1,286.61	1,063.52	223.09	5.767	
14,100.00	9,223.81	14,870.80	9,901.38	127.10	126.54	-121.80	5,476.07	-355.30	1,285.70	1,059.05	226.65	5.673	
14,200.00	9,225.15	14,970.79	9,902.13	129.08	128.50	-121.79	5,576.06	-356.29	1,284.79	1,054.57	230.22	5.581	
14,300.00	9,226.49	15,070.79	9,902.88	131.07	130.47	-121.79	5,676.04	-357.29	1,283.88	1,050.07	233.80	5.491	
14,400.00	9,227.83	15,170.78	9,903.63	133.06	132.44	-121.78	5,776.03	-358.29	1,282.97	1,045.57	237.40	5.404	
14,500.00	9,229.17	15,270.78	9,904.38	135.06	134.41	-121.78	5,876.02	-359.28	1,282.06	1,041.06	241.00	5.320	
14,600.00	9,230.68	15,368.79	9,905.16	137.06	136.35	-121.77	5,974.02	-360.25	1,281.24	1,036.63	244.61	5.238	
14,700.00	9,232.22	15,468.90	9,905.94	139.07	138.12	-121.77	6,072.02	-361.24	1,280.42	1,032.20	248.24	5.167	
14,800.00	9,233.89	15,570.00	9,906.72	141.08	139.97	-121.76	6,170.02	-362.23	1,279.60	1,027.77	251.90	5.103	
14,900.00	9,235.56	15,671.10	9,907.50	143.09	141.96	-121.75	6,268.02	-363.22	1,278.78	1,023.34	255.63	5.040	
15,000.00	9,237.22	15,772.20	9,908.28	145.11	143.96	-121.74	6,366.02	-364.21	1,277.96	1,018.91	259.40	4.979	
15,100.00	9,238.89	15,873.30	9,909.06	147.13	145.96	-121.73	6,464.02	-365.20	1,277.14	1,014.48	263.24	4.919	
15,200.00	9,240.56	15,974.40	9,909.84	149.16	147.97	-121.72	6,562.02	-366.19	1,276.32	1,009.95	267.14	4.861	
15,300.00	9,242.22	16,075.50	9,910.62	151.18	149.98	-121.71	6,660.02	-367.18	1,275.50	1,005.42	271.10	4.804	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 5H - OH - Plan 1 06-16-17													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	
15,400.00	9,259.55	16,150.66	9,948.99	153.22	151.99	-122.29	6,754.61	-357.64	1,293.27	1,020.94	272.33	4.749	
15,500.00	9,263.21	16,250.63	9,955.02	155.25	154.00	-122.36	6,854.40	-357.19	1,294.95	1,019.14	275.81	4.695	
15,600.00	9,266.88	16,350.60	9,961.06	157.29	156.02	-122.44	6,954.19	-356.74	1,296.63	1,017.33	279.30	4.642	
15,700.00	9,270.54	16,450.58	9,967.09	159.33	158.05	-122.52	7,053.97	-356.29	1,298.31	1,015.52	282.79	4.591	
15,800.00	9,274.21	16,550.55	9,973.13	161.37	160.07	-122.59	7,153.76	-355.84	1,300.00	1,013.72	286.28	4.541	
15,900.00	9,277.87	16,650.52	9,979.16	163.42	162.10	-122.67	7,253.55	-355.39	1,301.69	1,011.92	289.77	4.492	
16,000.00	9,281.54	16,761.92	9,985.49	165.47	164.37	-122.74	7,364.77	-354.89	1,303.22	1,009.73	293.49	4.440	
16,100.00	9,285.20	16,888.27	9,988.27	167.52	166.94	-122.66	7,491.07	-354.41	1,302.86	1,005.05	297.81	4.375	
16,200.00	9,288.87	16,988.21	9,988.79	169.57	168.97	-122.53	7,591.02	-354.06	1,301.66	999.90	301.76	4.314	
16,300.00	9,292.53	17,088.16	9,989.30	171.63	171.01	-122.39	7,690.97	-353.71	1,300.46	994.75	305.72	4.254	
16,400.00	9,295.57	17,188.13	9,989.82	173.68	173.06	-122.29	7,790.93	-353.35	1,299.60	989.99	309.61	4.198	
16,409.29	9,295.71	17,197.42	9,989.87	173.88	173.25	-122.29	7,800.22	-353.32	1,299.60	989.63	309.96	4.193	
16,500.00	9,295.67	17,288.12	9,990.34	175.74	175.10	-122.29	7,890.92	-353.00	1,300.26	986.98	313.28	4.150	
16,600.00	9,295.12	17,388.12	9,990.86	177.80	177.15	-122.32	7,990.91	-352.65	1,301.26	984.35	316.91	4.106	
16,700.00	9,294.57	17,488.11	9,991.37	179.87	179.20	-122.35	8,090.91	-352.30	1,302.26	981.72	320.54	4.063	
16,800.00	9,294.03	17,588.10	9,991.89	181.93	181.25	-122.37	8,190.90	-351.95	1,303.26	979.09	324.17	4.020	
16,900.00	9,293.48	17,688.09	9,992.41	184.00	183.31	-122.40	8,290.89	-351.60	1,304.26	976.46	327.80	3.979	
17,000.00	9,292.93	17,788.09	9,992.93	186.07	185.37	-122.43	8,390.88	-351.25	1,305.26	973.82	331.44	3.938	
17,100.00	9,292.39	17,888.08	9,993.45	188.14	187.43	-122.46	8,490.87	-350.90	1,306.26	971.18	335.08	3.898	
17,200.00	9,291.84	17,988.07	9,993.96	190.22	189.49	-122.48	8,590.86	-350.54	1,307.26	968.54	338.71	3.859	
17,300.00	9,291.30	18,088.07	9,994.48	192.29	191.55	-122.51	8,690.85	-350.19	1,308.26	965.90	342.36	3.821	
17,400.00	9,290.75	18,188.06	9,995.00	194.37	193.62	-122.54	8,790.84	-349.84	1,309.26	963.26	346.00	3.784	
17,500.00	9,290.20	18,288.05	9,995.52	196.45	195.68	-122.57	8,890.83	-349.49	1,310.26	960.62	349.64	3.747	
17,600.00	9,289.66	18,388.05	9,996.03	198.53	197.75	-122.59	8,990.83	-349.14	1,311.26	957.97	353.29	3.712	
17,700.00	9,289.11	18,488.04	9,996.55	200.61	199.83	-122.62	9,090.82	-348.79	1,312.26	955.33	356.94	3.676	
17,800.00	9,288.56	18,588.04	9,997.08	202.69	201.84	-122.65	9,188.19	-348.44	1,313.28	952.74	360.54	3.643	
17,900.00	9,288.02	18,683.35	9,998.24	204.78	203.88	-122.70	9,286.12	-348.09	1,314.63	950.54	364.09	3.611	
18,000.00	9,287.47	18,783.34	9,999.43	206.86	205.95	-122.75	9,386.10	-347.72	1,315.99	948.31	367.67	3.579	
18,100.00	9,286.92	18,883.32	10,000.63	208.95	208.03	-122.80	9,486.07	-347.36	1,317.35	946.09	371.26	3.548	
18,200.00	9,286.38	18,983.30	10,001.82	211.04	210.11	-122.86	9,586.05	-346.99	1,318.71	943.87	374.84	3.518	
18,300.00	9,285.83	19,083.29	10,003.02	213.13	212.19	-122.91	9,686.02	-346.63	1,320.07	941.64	378.42	3.488	
18,400.00	9,285.28	19,183.27	10,004.22	215.22	214.27	-122.96	9,786.00	-346.27	1,321.43	939.42	382.01	3.459	
18,500.00	9,284.74	19,283.25	10,005.41	217.31	216.36	-123.01	9,885.98	-345.90	1,322.80	937.21	385.59	3.431	
18,600.00	9,284.19	19,383.24	10,006.61	219.41	218.44	-123.06	9,985.95	-345.54	1,324.16	934.99	389.17	3.402	
18,700.00	9,283.64	19,483.22	10,007.80	221.50	220.53	-123.11	10,085.93	-345.17	1,325.53	932.77	392.76	3.375	
18,800.00	9,283.10	19,583.20	10,009.00	223.60	222.62	-123.17	10,185.90	-344.81	1,326.90	930.56	396.34	3.348	
18,900.00	9,282.55	19,683.19	10,010.20	225.69	224.71	-123.22	10,285.88	-344.44	1,328.26	928.35	399.92	3.321	
19,000.00	9,282.00	19,783.17	10,011.39	227.79	226.80	-123.27	10,385.85	-344.08	1,329.63	926.14	403.50	3.295	
19,100.00	9,281.46	19,883.16	10,012.59	229.89	228.89	-123.32	10,485.83	-343.72	1,331.00	923.93	407.08	3.270	
19,200.00	9,280.91	19,983.14	10,013.78	231.99	230.98	-123.37	10,585.81	-343.35	1,332.38	921.72	410.66	3.245	
19,300.00	9,280.36	20,083.12	10,014.98	234.09	233.08	-123.42	10,685.78	-342.99	1,333.75	919.51	414.23	3.220	
19,400.00	9,279.82	20,183.11	10,016.18	236.19	235.17	-123.47	10,785.76	-342.62	1,335.12	917.31	417.81	3.196	
19,500.00	9,279.27	20,283.09	10,017.37	238.29	237.27	-123.52	10,885.73	-342.26	1,336.50	915.11	421.39	3.172	
19,549.38	9,279.00	20,332.46	10,017.96	239.33	238.30	-123.55	10,935.10	-342.08	1,337.18	914.02	423.15	3.160 SF	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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	3.00	0.00	0.00	0.22	124.77	0.48	124.81				
100.00	100.00	97.00	100.00	0.19	0.19	0.22	124.77	0.48	124.77	124.39	0.38	327.189	
200.00	200.00	197.00	200.00	0.73	0.72	0.22	124.77	0.48	124.77	123.32	1.45	86.261	
300.00	300.00	297.00	300.00	1.27	1.25	0.22	124.77	0.48	124.77	122.25	2.52	49.476	
400.00	400.00	397.00	400.00	1.81	1.79	0.22	124.77	0.48	124.77	121.17	3.60	34.685	
500.00	500.00	497.00	500.00	2.34	2.33	0.22	124.77	0.48	124.77	120.10	4.67	26.702	
600.00	600.00	597.00	600.00	2.88	2.87	0.22	124.77	0.48	124.77	119.02	5.75	21.707	
700.00	699.98	695.40	698.38	3.41	3.39	-64.37	125.38	1.95	124.64	117.83	6.80	18.323	
800.00	799.84	793.76	796.61	3.94	3.91	-64.41	127.27	6.54	124.31	116.46	7.85	15.831	
900.00	899.45	892.12	894.62	4.48	4.44	-64.44	130.45	14.24	123.80	114.88	8.92	13.883	
1,000.00	998.70	991.17	993.00	5.03	4.98	-64.59	134.82	24.85	122.98	112.97	10.01	12.290	
1,100.00	1,097.47	1,091.11	1,092.19	5.60	5.54	-66.01	139.46	36.08	120.92	109.79	11.13	10.868	
1,200.00	1,195.78	1,190.91	1,191.25	6.19	6.10	-68.64	144.09	47.29	117.94	105.66	12.27	9.610	
1,300.00	1,294.07	1,290.71	1,290.31	6.79	6.66	-71.47	148.71	58.51	115.16	101.72	13.44	8.569	
1,400.00	1,392.36	1,390.50	1,389.36	7.40	7.23	-74.43	153.34	69.72	112.68	98.05	14.62	7.706	
1,500.00	1,490.65	1,490.30	1,488.42	8.02	7.81	-77.51	157.97	80.94	110.51	94.69	15.82	6.986	
1,600.00	1,588.93	1,590.09	1,587.48	8.64	8.38	-80.70	162.60	92.15	108.68	91.65	17.02	6.385	
1,700.00	1,687.22	1,689.89	1,686.53	9.27	8.96	-84.00	167.23	103.37	107.19	88.96	18.23	5.880	
1,800.00	1,785.51	1,789.69	1,785.59	9.90	9.54	-87.37	171.85	114.58	106.07	86.63	19.44	5.457	
1,900.00	1,883.80	1,889.48	1,884.64	10.54	10.12	-90.80	176.48	125.80	105.33	84.68	20.64	5.102	
2,000.00	1,982.09	1,989.28	1,983.70	11.17	10.70	-94.27	181.11	137.01	104.97	83.12	21.85	4.805	
2,042.60	2,023.96	2,031.79	2,025.89	11.45	10.95	-95.76	183.08	141.79	104.93	82.58	22.35	4.694 CC	
2,100.00	2,080.37	2,089.07	2,082.75	11.81	11.28	-97.75	185.74	148.23	105.00	81.96	23.04	4.557	
2,200.00	2,178.66	2,188.87	2,181.81	12.45	11.86	-101.22	190.37	159.44	105.41	81.19	24.22	4.352	
2,300.00	2,276.95	2,288.66	2,280.86	13.10	12.45	-104.65	194.99	170.66	106.21	80.82	25.39	4.183 ES	
2,400.00	2,375.24	2,388.46	2,379.92	13.74	13.03	-108.01	199.62	181.87	107.39	80.83	26.55	4.044	
2,500.00	2,473.52	2,488.25	2,478.97	14.38	13.61	-111.29	204.25	193.09	108.93	81.23	27.70	3.932	
2,600.00	2,571.81	2,588.05	2,578.03	15.03	14.20	-114.47	208.88	204.31	110.81	81.98	28.83	3.843	
2,700.00	2,670.10	2,687.85	2,677.09	15.68	14.78	-117.53	213.50	215.52	113.03	83.07	29.96	3.773	
2,800.00	2,768.39	2,787.64	2,776.14	16.32	15.37	-120.47	218.13	226.74	115.55	84.49	31.07	3.719	
2,900.00	2,866.67	2,887.44	2,875.20	16.97	15.95	-123.28	222.76	237.95	118.37	86.20	32.17	3.680	
3,000.00	2,964.96	2,987.23	2,974.25	17.62	16.54	-125.95	227.39	249.17	121.46	88.20	33.26	3.651	
3,100.00	3,063.25	3,087.03	3,073.31	18.27	17.12	-128.48	232.02	260.38	124.80	90.45	34.35	3.633	
3,200.00	3,161.54	3,186.82	3,172.36	18.92	17.71	-130.87	236.64	271.60	128.37	92.94	35.43	3.623	
3,300.00	3,259.83	3,286.62	3,271.42	19.57	18.30	-133.14	241.27	282.81	132.15	95.64	36.51	3.619	
3,400.00	3,358.11	3,386.42	3,370.47	20.22	18.88	-135.27	245.90	294.03	136.13	98.54	37.59	3.622	
3,500.00	3,456.40	3,486.21	3,469.53	20.87	19.47	-137.28	250.53	305.24	140.29	101.63	38.66	3.628	
3,600.00	3,554.69	3,586.01	3,568.58	21.52	20.06	-139.18	255.15	316.46	144.61	104.87	39.74	3.639	
3,700.00	3,652.98	3,685.80	3,667.64	22.17	20.64	-140.96	259.78	327.67	149.08	108.27	40.81	3.653	
3,800.00	3,751.26	3,785.60	3,766.70	22.82	21.23	-142.64	264.41	338.89	153.68	111.80	41.89	3.669	
3,900.00	3,849.55	3,885.39	3,865.75	23.48	21.82	-144.21	269.04	350.10	158.41	115.45	42.96	3.687	
4,000.00	3,947.84	3,985.19	3,964.81	24.13	22.40	-145.70	273.67	361.32	163.25	119.21	44.04	3.707	
4,100.00	4,046.13	4,084.99	4,063.86	24.78	22.99	-147.10	278.29	372.53	168.20	123.08	45.11	3.728	
4,200.00	4,144.42	4,184.78	4,162.92	25.43	23.58	-148.42	282.92	383.75	173.23	127.04	46.19	3.750	
4,300.00	4,242.70	4,284.58	4,261.97	26.09	24.17	-149.66	287.55	394.96	178.36	131.09	47.27	3.773	
4,400.00	4,340.99	4,384.37	4,361.03	26.74	24.75	-150.84	292.18	406.18	183.56	135.21	48.36	3.796	
4,500.00	4,439.28	4,484.17	4,460.08	27.39	25.34	-151.95	296.81	417.39	188.84	139.40	49.44	3.820	
4,600.00	4,537.57	4,583.96	4,559.14	28.05	25.93	-153.00	301.43	428.61	194.19	143.66	50.52	3.843	
4,700.00	4,635.85	4,683.76	4,658.20	28.70	26.52	-153.99	306.06	439.82	199.59	147.98	51.61	3.867	
4,800.00	4,734.14	4,783.56	4,757.25	29.35	27.10	-154.93	310.69	451.04	205.06	152.35	52.70	3.891	
4,900.00	4,832.43	4,883.35	4,856.31	30.01	27.69	-155.82	315.32	462.25	210.57	156.78	53.79	3.915	
5,000.00	4,930.72	4,983.15	4,955.36	30.66	28.28	-156.66	319.94	473.47	216.13	161.25	54.88	3.938	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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)					
5,100.00	5,029.01	5,082.94	5,054.42	31.31	28.87	-157.46	324.57	484.68	221.74	165.76	55.98	3.961	
5,200.00	5,127.29	5,182.74	5,153.47	31.97	29.45	-158.23	329.20	495.90	227.39	170.32	57.07	3.984	
5,300.00	5,225.58	5,282.53	5,252.53	32.62	30.04	-158.95	333.83	507.11	233.08	174.91	58.17	4.007	
5,400.00	5,323.87	5,382.33	5,351.58	33.27	30.63	-159.64	338.46	518.33	238.80	179.53	59.27	4.029	
5,500.00	5,422.16	5,482.13	5,450.64	33.93	31.22	-160.30	343.08	529.54	244.55	184.19	60.36	4.051	
5,600.00	5,520.52	5,581.95	5,549.72	34.58	31.81	-160.92	347.71	540.76	249.94	188.44	61.50	4.064	
5,700.00	5,619.38	5,681.90	5,648.93	35.19	32.40	-161.28	352.35	551.99	252.48	189.84	62.64	4.031	
5,800.00	5,718.71	5,774.52	5,741.01	35.77	32.93	-161.46	356.14	561.20	253.09	189.43	63.66	3.976	
5,900.00	5,818.37	5,866.66	5,832.89	36.31	33.44	-161.57	358.79	567.62	253.48	188.89	64.59	3.924	
6,000.00	5,918.26	5,958.80	5,924.93	36.82	33.93	-161.64	360.32	571.31	253.67	188.23	65.44	3.876	
6,100.00	6,018.25	6,052.13	6,018.25	37.28	34.40	-97.10	360.72	572.29	253.66	187.37	66.29	3.826	
6,200.00	6,118.25	6,152.13	6,118.25	37.74	34.89	-97.10	360.72	572.29	253.66	186.37	67.29	3.769	
6,300.00	6,218.25	6,252.13	6,218.25	38.19	35.38	-97.10	360.72	572.29	253.66	185.36	68.30	3.714	
6,400.00	6,318.25	6,352.13	6,318.25	38.65	35.87	-97.10	360.72	572.29	253.66	184.36	69.30	3.660	
6,500.00	6,418.25	6,452.13	6,418.25	39.11	36.36	-97.10	360.72	572.29	253.66	183.35	70.31	3.608	
6,600.00	6,518.25	6,552.13	6,518.25	39.57	36.86	-97.10	360.72	572.29	253.66	182.34	71.32	3.557	
6,700.00	6,618.25	6,652.13	6,618.25	40.04	37.36	-97.10	360.72	572.29	253.66	181.33	72.33	3.507	
6,800.00	6,718.25	6,752.13	6,718.25	40.51	37.85	-97.10	360.72	572.29	253.66	180.32	73.34	3.459	
6,900.00	6,818.25	6,852.13	6,818.25	40.97	38.35	-97.10	360.72	572.29	253.66	179.31	74.35	3.412	
7,000.00	6,918.25	6,952.13	6,918.25	41.44	38.85	-97.10	360.72	572.29	253.66	178.29	75.37	3.366	
7,100.00	7,018.25	7,052.13	7,018.25	41.91	39.35	-97.10	360.72	572.29	253.66	177.27	76.39	3.321	
7,200.00	7,118.25	7,152.13	7,118.25	42.39	39.85	-97.10	360.72	572.29	253.66	176.25	77.41	3.277	
7,300.00	7,218.25	7,252.13	7,218.25	42.86	40.35	-97.10	360.72	572.29	253.66	175.23	78.43	3.234	
7,400.00	7,318.25	7,352.13	7,318.25	43.34	40.86	-97.10	360.72	572.29	253.66	174.21	79.45	3.193	
7,500.00	7,418.25	7,452.13	7,418.25	43.81	41.36	-97.10	360.72	572.29	253.66	173.19	80.47	3.152	
7,600.00	7,518.25	7,552.13	7,518.25	44.29	41.87	-97.10	360.72	572.29	253.66	172.16	81.50	3.112	
7,700.00	7,618.25	7,652.13	7,618.25	44.77	42.37	-97.10	360.72	572.29	253.66	171.14	82.52	3.074	
7,800.00	7,718.25	7,752.13	7,718.25	45.25	42.88	-97.10	360.72	572.29	253.66	170.11	83.55	3.036	
7,900.00	7,818.25	7,852.13	7,818.25	45.74	43.39	-97.10	360.72	572.29	253.66	169.08	84.58	2.999	
8,000.00	7,918.25	7,952.13	7,918.25	46.22	43.89	-97.10	360.72	572.29	253.66	168.05	85.61	2.963	
8,100.00	8,018.25	8,052.13	8,018.25	46.70	44.40	-97.10	360.72	572.29	253.66	167.02	86.64	2.928	
8,200.00	8,118.25	8,152.13	8,118.25	47.19	44.91	-97.10	360.72	572.29	253.66	165.99	87.67	2.893	
8,300.00	8,218.25	8,252.13	8,218.25	47.68	45.42	-97.10	360.72	572.29	253.66	164.96	88.71	2.860	
8,400.00	8,318.25	8,352.13	8,318.25	48.17	45.93	-97.10	360.72	572.29	253.66	163.92	89.74	2.827	
8,500.00	8,418.25	8,452.13	8,418.25	48.66	46.44	-97.10	360.72	572.29	253.66	162.89	90.77	2.794	
8,600.00	8,518.25	8,552.13	8,518.25	49.15	46.96	-97.10	360.72	572.29	253.66	161.85	91.81	2.763	
8,648.26	8,566.51	8,600.39	8,566.51	49.38	47.20	-96.25	360.72	572.29	253.72	161.44	92.29	2.749	
8,700.00	8,618.24	8,652.12	8,618.24	49.64	47.47	-96.27	360.72	572.29	253.74	160.89	92.84	2.733	
8,800.00	8,717.19	8,751.06	8,717.19	50.16	47.97	-99.08	360.72	572.29	255.58	161.59	93.98	2.719 SF	
8,900.00	8,812.27	8,846.15	8,812.27	50.70	48.46	-104.72	360.72	572.29	262.26	167.21	95.05	2.759	
9,000.00	8,900.60	8,934.48	8,900.60	51.24	48.92	-111.54	360.72	572.29	278.66	183.17	95.49	2.918	
9,100.00	8,979.50	9,013.38	8,979.50	51.77	49.32	-117.60	360.72	572.29	309.70	215.00	94.70	3.270	
9,200.00	9,046.57	9,080.44	9,046.57	52.30	49.67	-121.30	360.72	572.29	357.76	264.71	93.05	3.845	
9,300.00	9,099.76	9,133.64	9,099.76	52.84	49.94	-121.50	360.72	572.29	421.93	329.72	92.21	4.576	
9,400.00	9,137.47	9,171.35	9,137.47	53.42	50.14	-116.77	360.72	572.29	499.14	404.69	94.46	5.284	
9,500.00	9,158.55	9,192.42	9,158.55	54.06	50.25	-104.68	360.72	572.29	585.47	485.50	99.97	5.856	
9,600.00	9,163.48	9,197.35	9,163.48	54.74	50.27	-91.91	360.72	572.29	676.91	574.86	102.05	6.633	
9,700.00	9,164.82	9,198.69	9,164.82	55.50	50.28	-92.22	360.72	572.29	770.60	667.70	102.90	7.489	
9,800.00	9,166.16	9,200.03	9,166.16	56.34	50.28	-92.52	360.72	572.29	865.70	761.89	103.82	8.339	
9,900.00	9,167.50	10,783.71	10,015.54	57.25	59.35	-163.43	1,324.49	555.99	885.45	828.18	57.27	15.461	
10,000.00	9,168.84	10,883.55	10,011.34	58.24	60.27	-163.33	1,424.24	554.31	880.13	821.38	58.74	14.982	
10,100.00	9,170.18	10,983.40	10,007.13	59.28	61.26	-163.23	1,523.98	552.62	874.81	814.51	60.30	14.507	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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)					
10,200.00	9,171.52	11,083.25	10,002.93	60.39	62.31	-163.12	1,623.72	550.93	869.49	807.55	61.94	14.038	
10,300.00	9,172.86	11,183.09	9,998.72	61.56	63.41	-163.02	1,723.46	549.25	864.18	800.53	63.65	13.578	
10,400.00	9,174.20	11,282.94	9,994.52	62.78	64.57	-162.91	1,823.21	547.56	858.87	793.45	65.42	13.128	
10,500.00	9,175.54	11,382.78	9,990.31	64.05	65.78	-162.80	1,922.95	545.87	853.56	786.30	67.26	12.690	
10,600.00	9,176.88	11,482.63	9,986.11	65.37	67.04	-162.69	2,022.69	544.18	848.26	779.10	69.16	12.265	
10,700.00	9,178.22	11,582.48	9,981.91	66.73	68.34	-162.58	2,122.44	542.50	842.96	771.84	71.12	11.853	
10,800.00	9,179.56	11,682.32	9,977.70	68.14	69.68	-162.46	2,222.18	540.81	837.66	764.54	73.12	11.456	
10,900.00	9,180.91	11,782.17	9,973.50	69.58	71.06	-162.35	2,321.92	539.12	832.37	757.19	75.18	11.072	
11,000.00	9,182.25	11,882.01	9,969.29	71.06	72.49	-162.23	2,421.67	537.44	827.08	749.80	77.28	10.703	
11,100.00	9,183.59	11,981.86	9,965.09	72.58	73.94	-162.12	2,521.41	535.75	821.79	742.37	79.42	10.347	
11,200.00	9,184.93	12,081.70	9,960.89	74.13	75.43	-162.00	2,621.15	534.06	816.50	734.90	81.60	10.006	
11,300.00	9,186.27	12,169.86	9,957.50	75.70	76.77	-161.90	2,709.23	532.57	811.62	727.95	83.68	9.700	
11,400.00	9,187.61	12,254.94	9,956.32	77.31	78.08	-161.85	2,794.29	531.13	808.97	723.29	85.68	9.442	
11,500.00	9,188.95	12,354.92	9,955.55	78.94	79.65	-161.80	2,894.25	529.43	806.97	719.11	87.86	9.185	
11,600.00	9,190.29	12,454.90	9,954.78	80.60	81.24	-161.75	2,994.21	527.73	804.97	714.90	90.07	8.937	
11,700.00	9,191.63	12,554.87	9,954.01	82.28	82.86	-161.71	3,094.17	526.04	802.96	710.66	92.30	8.699	
11,800.00	9,192.97	12,654.85	9,953.25	83.99	84.50	-161.66	3,194.13	524.34	800.96	706.40	94.56	8.470	
11,900.00	9,194.31	12,754.83	9,952.48	85.71	86.16	-161.61	3,294.09	522.64	798.96	702.12	96.84	8.250	
12,000.00	9,195.65	12,854.81	9,951.71	87.46	87.85	-161.57	3,394.05	520.94	796.96	697.81	99.15	8.038	
12,100.00	9,196.99	12,954.79	9,950.95	89.22	89.56	-161.52	3,494.01	519.25	794.96	693.49	101.47	7.834	
12,200.00	9,198.33	13,054.76	9,950.18	91.00	91.28	-161.47	3,593.97	517.55	792.96	689.14	103.82	7.638	
12,300.00	9,199.68	13,154.74	9,949.41	92.79	93.03	-161.42	3,693.93	515.85	790.96	684.78	106.18	7.449	
12,400.00	9,201.02	13,254.72	9,948.64	94.61	94.79	-161.37	3,793.89	514.15	788.96	680.40	108.56	7.268	
12,500.00	9,202.36	13,354.70	9,947.88	96.43	96.57	-161.32	3,893.85	512.46	786.96	676.01	110.95	7.093	
12,600.00	9,203.70	13,454.67	9,947.11	98.27	98.36	-161.28	3,993.81	510.76	784.96	671.60	113.37	6.924	
12,700.00	9,205.04	13,554.65	9,946.34	100.12	100.17	-161.23	4,093.77	509.06	782.97	667.17	115.79	6.762	
12,800.00	9,206.38	13,654.63	9,945.58	101.99	101.99	-161.18	4,193.73	507.36	780.97	662.74	118.24	6.605	
12,900.00	9,207.72	13,754.61	9,944.81	103.87	103.83	-161.13	4,293.69	505.67	778.97	658.28	120.69	6.454	
13,000.00	9,209.06	13,854.59	9,944.04	105.75	105.68	-161.08	4,393.65	503.97	776.98	653.82	123.16	6.309	
13,100.00	9,210.40	13,954.56	9,943.27	107.65	107.54	-161.03	4,493.61	502.27	774.98	649.34	125.64	6.168	
13,200.00	9,211.74	14,054.54	9,942.51	109.56	109.41	-160.98	4,593.57	500.57	772.99	644.86	128.13	6.033	
13,300.00	9,213.08	14,154.52	9,941.74	111.48	111.16	-160.93	4,693.53	498.89	771.15	640.61	130.54	5.907	
13,400.00	9,214.42	14,254.50	9,940.98	113.40	112.90	-160.92	4,793.49	497.41	770.84	637.95	132.89	5.801	
13,500.00	9,215.76	14,354.48	9,940.22	115.34	114.81	-160.92	4,893.45	495.93	770.71	635.38	135.33	5.695	
13,600.00	9,217.10	14,454.46	9,939.46	117.28	116.71	-160.91	4,993.41	494.45	770.59	632.80	137.78	5.593	
13,700.00	9,218.45	14,554.44	9,938.70	119.23	118.63	-160.91	5,093.37	492.97	770.46	630.22	140.24	5.494	
13,800.00	9,219.79	14,654.42	9,937.94	121.19	120.56	-160.91	5,193.33	491.49	770.33	627.63	142.70	5.398	
13,900.00	9,221.13	14,754.40	9,937.18	123.15	122.49	-160.90	5,293.29	489.99	770.20	625.03	145.17	5.305	
14,000.00	9,222.47	14,854.38	9,936.42	125.12	124.44	-160.90	5,393.25	488.49	770.08	622.43	147.65	5.216	
14,100.00	9,223.81	14,954.36	9,935.66	127.10	126.38	-160.89	5,493.21	486.99	769.95	619.82	150.13	5.129	
14,200.00	9,225.15	15,054.34	9,934.90	129.08	128.34	-160.89	5,593.17	485.49	769.82	617.20	152.62	5.044	
14,300.00	9,226.49	15,154.32	9,934.14	131.07	130.30	-160.88	5,693.13	483.99	769.69	614.58	155.11	4.962	
14,400.00	9,227.83	15,254.30	9,933.38	133.06	132.27	-160.88	5,793.09	482.49	769.57	611.96	157.61	4.883	
14,500.00	9,229.17	15,354.28	9,932.62	135.06	134.25	-160.87	5,893.05	480.99	769.44	609.32	160.11	4.806	
14,600.00	9,230.51	15,454.26	9,931.86	137.06	136.23	-160.87	5,993.01	479.49	769.31	606.58	162.63	4.730	
14,700.00	9,231.85	15,554.24	9,931.10	139.07	138.21	-160.85	6,092.97	477.99	769.18	603.79	165.21	4.649	
14,800.00	9,233.19	15,654.22	9,930.34	141.08	140.19	-160.81	6,192.93	476.49	769.05	601.00	167.80	4.568	
14,900.00	9,234.53	15,754.20	9,929.58	143.09	142.18	-160.77	6,292.89	474.99	768.92	598.21	170.39	4.490	
15,000.00	9,235.87	15,854.18	9,928.82	145.11	144.17	-160.73	6,392.85	473.49	768.79	595.42	172.99	4.414	
15,100.00	9,237.21	15,954.16	9,928.06	147.13	146.17	-160.69	6,492.81	471.99	768.66	592.63	175.60	4.340	
15,200.00	9,238.55	16,054.14	9,927.30	149.16	148.17	-160.65	6,592.77	470.49	768.53	589.84	178.21	4.268	
15,300.00	9,239.89	16,154.12	9,926.54	151.18	150.18	-160.61	6,692.73	468.99	768.40	587.05	180.83	4.198	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 5 Fed 003 - 6H - OH - Plan 1 06-16-17													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
15,400.00	9,259.55	16,240.13	9,973.94	153.22	152.19	-160.57	6,778.67	483.72	757.71	574.25	183.46	4.130	
15,500.00	9,263.21	16,340.12	9,976.04	155.25	154.20	-160.53	6,878.63	484.63	756.24	570.15	186.09	4.064	
15,600.00	9,266.88	16,440.11	9,978.14	157.29	156.22	-160.48	6,978.59	485.55	754.77	566.05	188.72	3.999	
15,700.00	9,270.54	16,540.10	9,980.24	159.33	158.24	-160.44	7,078.55	486.46	753.30	561.94	191.36	3.936	
15,800.00	9,274.21	16,640.09	9,982.34	161.37	160.27	-160.40	7,178.51	487.37	751.83	557.82	194.01	3.875	
15,900.00	9,277.87	16,740.07	9,984.43	163.42	162.29	-160.36	7,278.47	488.29	750.36	553.70	196.66	3.816	
16,000.00	9,281.54	16,840.06	9,986.53	165.47	164.32	-160.32	7,378.44	489.20	748.90	549.58	199.32	3.757	
16,100.00	9,285.20	16,940.05	9,988.63	167.52	166.36	-160.28	7,478.40	490.12	747.43	545.45	201.98	3.701	
16,200.00	9,288.87	17,040.04	9,990.73	169.57	168.39	-160.23	7,578.36	491.03	745.96	541.32	204.64	3.645	
16,300.00	9,292.53	17,140.02	9,992.83	171.63	170.43	-160.19	7,678.32	491.94	744.50	537.19	207.31	3.591	
16,387.83	9,294.94	17,227.85	9,994.67	173.43	172.23	-160.18	7,766.12	492.75	743.96	534.32	209.64	3.549	
16,400.00	9,295.57	17,240.02	9,994.93	173.68	172.48	-160.17	7,778.29	492.86	743.62	533.63	209.98	3.541	
16,500.00	9,295.67	17,339.99	9,997.03	175.74	174.52	-160.22	7,878.24	493.77	745.49	533.05	212.44	3.509	
16,600.00	9,295.12	17,439.96	9,999.13	177.80	176.57	-160.29	7,978.18	494.68	747.96	533.14	214.82	3.482	
16,700.00	9,294.57	17,539.92	10,001.22	179.87	178.62	-160.36	8,078.12	495.60	750.43	533.23	217.20	3.455	
16,800.00	9,294.03	17,639.89	10,003.32	181.93	180.67	-160.43	8,178.05	496.51	752.91	533.32	219.58	3.429	
16,900.00	9,293.48	17,746.32	10,005.43	184.00	182.85	-160.50	8,284.46	497.48	755.29	533.25	222.04	3.402	
17,000.00	9,292.93	17,847.52	10,006.45	186.07	184.93	-160.54	8,385.65	498.35	756.76	532.24	224.52	3.371	
17,100.00	9,292.39	17,947.51	10,007.45	188.14	186.99	-160.58	8,485.63	499.20	758.22	531.23	226.99	3.340	
17,200.00	9,291.84	18,047.50	10,008.45	190.22	189.05	-160.62	8,585.61	500.06	759.68	530.22	229.45	3.311	
17,300.00	9,291.30	18,147.49	10,009.45	192.29	191.11	-160.66	8,685.59	500.92	761.14	529.22	231.92	3.282	
17,400.00	9,290.75	18,247.48	10,010.45	194.37	193.18	-160.70	8,785.57	501.77	762.60	528.21	234.39	3.254	
17,500.00	9,290.20	18,347.46	10,011.45	196.45	195.24	-160.74	8,885.55	502.63	764.06	527.21	236.85	3.226	
17,600.00	9,289.66	18,447.45	10,012.45	198.53	197.31	-160.77	8,985.53	503.49	765.52	526.20	239.32	3.199	
17,700.00	9,289.11	18,547.44	10,013.45	200.61	199.38	-160.81	9,085.51	504.34	766.98	525.20	241.79	3.172	
17,800.00	9,288.56	18,647.43	10,014.45	202.69	201.45	-160.85	9,185.49	505.20	768.44	524.19	244.25	3.146	
17,900.00	9,288.02	18,747.42	10,015.45	204.78	203.53	-160.89	9,285.47	506.05	769.91	523.19	246.72	3.121	
18,000.00	9,287.47	18,847.40	10,016.45	206.86	205.60	-160.92	9,385.45	506.91	771.37	522.18	249.19	3.096	
18,100.00	9,286.92	18,947.39	10,017.45	208.95	207.68	-160.96	9,485.43	507.77	772.83	521.18	251.65	3.071	
18,200.00	9,286.38	19,047.38	10,018.45	211.04	209.75	-161.00	9,585.41	508.62	774.29	520.18	254.12	3.047	
18,300.00	9,285.83	19,147.37	10,019.45	213.13	211.83	-161.04	9,685.39	509.48	775.76	519.17	256.58	3.023	
18,400.00	9,285.28	19,247.36	10,020.45	215.22	213.91	-161.07	9,785.37	510.34	777.22	518.17	259.05	3.000	
18,500.00	9,284.74	19,347.34	10,021.45	217.31	216.00	-161.11	9,885.34	511.19	778.69	517.17	261.52	2.978	
18,600.00	9,284.19	19,447.33	10,022.45	219.41	218.08	-161.15	9,985.32	512.05	780.15	516.17	263.98	2.955	
18,700.00	9,283.64	19,547.32	10,023.45	221.50	220.16	-161.18	10,085.30	512.91	781.62	515.17	266.45	2.933	
18,800.00	9,283.10	19,647.31	10,024.45	223.60	222.25	-161.22	10,185.28	513.76	783.08	514.17	268.91	2.912	
18,900.00	9,282.55	19,747.30	10,025.45	225.69	224.34	-161.26	10,285.26	514.62	784.55	513.17	271.38	2.891	
19,000.00	9,282.00	19,847.28	10,026.45	227.79	226.43	-161.29	10,385.24	515.48	786.01	512.17	273.84	2.870	
19,100.00	9,281.46	19,947.27	10,027.45	229.89	228.52	-161.33	10,485.22	516.33	787.48	511.18	276.30	2.850	
19,200.00	9,280.91	20,047.26	10,028.45	231.99	230.61	-161.36	10,585.20	517.19	788.95	510.18	278.77	2.830	
19,300.00	9,280.36	20,147.25	10,029.46	234.09	232.70	-161.40	10,685.18	518.05	790.41	509.18	281.23	2.811	
19,400.00	9,279.82	20,247.24	10,030.46	236.19	234.79	-161.43	10,785.16	518.90	791.88	508.19	283.69	2.791	
19,500.00	9,279.27	20,347.22	10,031.46	238.29	236.88	-161.47	10,885.14	519.76	793.35	507.19	286.15	2.772	
19,549.38	9,279.00	20,396.60	10,031.95	239.33	237.92	-161.49	10,934.51	520.18	794.07	506.70	287.37	2.763	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17													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	20.00	0.00	0.00	-77.41	302.10	-1,352.60	1,386.07				
100.00	100.00	80.00	100.00	0.19	0.15	-77.41	302.10	-1,352.60	1,385.93	1,385.58	0.35	3,977.585	
200.00	200.00	180.00	200.00	0.73	0.62	-77.41	302.10	-1,352.60	1,385.93	1,384.57	1.36	1,022.809	
300.00	300.00	280.00	300.00	1.27	1.16	-77.41	302.10	-1,352.60	1,385.93	1,383.50	2.43	570.239	
400.00	400.00	380.00	400.00	1.81	1.70	-77.41	302.10	-1,352.60	1,385.93	1,382.42	3.51	395.319	
500.00	500.00	480.00	500.00	2.34	2.24	-77.41	302.10	-1,352.60	1,385.93	1,381.35	4.58	302.521	
600.00	600.00	580.00	600.00	2.88	2.77	-77.41	302.10	-1,352.60	1,385.93	1,380.27	5.66	245.007 CC, ES	
700.00	699.98	679.98	699.98	3.41	3.31	-141.99	302.10	-1,352.60	1,387.30	1,380.58	6.73	206.187	
800.00	799.84	779.84	799.84	3.94	3.85	-142.07	302.10	-1,352.60	1,391.43	1,383.64	7.80	178.452	
900.00	899.45	879.45	899.45	4.48	4.38	-142.21	302.10	-1,352.60	1,398.32	1,389.46	8.87	157.724	
1,000.00	998.70	978.70	998.70	5.03	4.92	-142.39	302.10	-1,352.60	1,407.99	1,398.06	9.93	141.777	
1,100.00	1,097.47	1,077.47	1,097.47	5.60	5.45	-142.62	302.10	-1,352.60	1,420.46	1,409.47	10.99	129.223	
1,200.00	1,195.78	1,175.78	1,195.78	6.19	5.98	-143.01	302.10	-1,352.60	1,435.10	1,423.04	12.06	119.004	
1,300.00	1,294.07	1,274.07	1,294.07	6.79	6.51	-143.45	302.10	-1,352.60	1,449.95	1,436.81	13.14	110.371	
1,400.00	1,392.36	1,372.36	1,392.36	7.40	7.04	-143.87	302.10	-1,352.60	1,464.88	1,450.66	14.22	103.009	
1,500.00	1,490.65	1,470.65	1,490.65	8.02	7.56	-144.29	302.10	-1,352.60	1,479.89	1,464.58	15.31	96.667	
1,600.00	1,588.93	1,568.93	1,588.93	8.64	8.09	-144.70	302.10	-1,352.60	1,494.98	1,478.58	16.40	91.152	
1,700.00	1,687.22	1,667.22	1,687.22	9.27	8.62	-145.10	302.10	-1,352.60	1,510.14	1,492.64	17.50	86.318	
1,800.00	1,785.51	1,765.51	1,785.51	9.90	9.15	-145.50	302.10	-1,352.60	1,525.37	1,506.78	18.59	82.049	
1,900.00	1,883.80	1,863.80	1,883.80	10.54	9.68	-145.88	302.10	-1,352.60	1,540.67	1,520.99	19.69	78.252	
2,000.00	1,982.09	1,962.09	1,982.09	11.17	10.21	-146.26	302.10	-1,352.60	1,556.04	1,535.26	20.79	74.857	
2,100.00	2,080.37	2,060.37	2,080.37	11.81	10.73	-146.63	302.10	-1,352.60	1,571.48	1,549.59	21.89	71.802	
2,200.00	2,178.66	2,158.66	2,178.66	12.45	11.26	-147.00	302.10	-1,352.60	1,586.98	1,563.99	22.99	69.041	
2,300.00	2,276.95	2,256.95	2,276.95	13.10	11.84	-147.38	302.10	-1,352.56	1,602.52	1,578.39	24.13	66.414	
2,400.00	2,375.24	2,489.33	2,509.06	13.74	12.99	-148.13	302.10	-1,342.61	1,613.79	1,587.96	25.84	62.465	
2,500.00	2,473.52	2,622.78	2,641.84	14.38	13.69	-148.54	302.10	-1,329.30	1,619.45	1,592.35	27.10	59.768	
2,600.00	2,571.81	2,722.27	2,740.78	15.03	14.21	-148.84	302.10	-1,318.90	1,624.86	1,596.87	28.19	57.641	
2,700.00	2,670.10	2,821.76	2,839.72	15.68	14.74	-149.14	302.10	-1,308.50	1,630.32	1,601.04	29.29	55.670	
2,800.00	2,768.39	2,921.25	2,938.67	16.32	15.27	-149.44	302.10	-1,298.10	1,635.83	1,605.45	30.38	53.840	
2,900.00	2,866.67	3,020.74	3,037.61	16.97	15.81	-149.73	302.10	-1,287.70	1,641.38	1,609.89	31.48	52.136	
3,000.00	2,964.96	3,120.23	3,136.56	17.62	16.35	-150.02	302.10	-1,277.30	1,646.97	1,614.39	32.58	50.547	
3,100.00	3,063.25	3,219.72	3,235.50	18.27	16.89	-150.31	302.10	-1,266.90	1,652.60	1,618.92	33.69	49.060	
3,200.00	3,161.54	3,319.20	3,334.44	18.92	17.43	-150.60	302.10	-1,256.51	1,658.28	1,623.49	34.79	47.668	
3,300.00	3,259.83	3,418.69	3,433.39	19.57	17.98	-150.89	302.10	-1,246.11	1,664.00	1,628.11	35.89	46.361	
3,400.00	3,358.11	3,518.18	3,532.33	20.22	18.52	-151.17	302.10	-1,235.71	1,669.76	1,632.76	37.00	45.132	
3,500.00	3,456.40	3,617.67	3,631.27	20.87	19.07	-151.46	302.10	-1,225.31	1,675.56	1,637.46	38.10	43.974	
3,600.00	3,554.69	3,717.16	3,730.22	21.52	19.62	-151.74	302.10	-1,214.91	1,681.41	1,642.20	39.21	42.883	
3,700.00	3,652.98	3,816.65	3,829.16	22.17	20.17	-152.02	302.10	-1,204.51	1,687.29	1,646.97	40.32	41.851	
3,800.00	3,751.26	3,916.14	3,928.10	22.82	20.72	-152.29	302.10	-1,194.11	1,693.21	1,651.79	41.42	40.876	
3,900.00	3,849.55	4,015.62	4,027.05	23.48	21.28	-152.57	302.10	-1,183.71	1,699.17	1,656.64	42.53	39.951	
4,000.00	3,947.84	4,115.11	4,125.99	24.13	21.83	-152.84	302.10	-1,173.31	1,705.17	1,661.53	43.64	39.074	
4,100.00	4,046.13	4,214.60	4,224.93	24.78	22.39	-153.11	302.10	-1,162.91	1,711.21	1,666.47	44.75	38.241	
4,200.00	4,144.42	4,286.32	4,296.30	25.43	22.79	-153.31	302.10	-1,155.79	1,717.89	1,672.18	45.71	37.582	
4,300.00	4,242.70	4,348.33	4,358.12	26.09	23.13	-153.48	302.10	-1,150.97	1,726.69	1,680.07	46.62	37.038	
4,400.00	4,340.99	4,400.00	4,409.70	26.74	23.41	-153.62	302.10	-1,147.98	1,737.71	1,690.24	47.47	36.603	
4,500.00	4,439.28	4,471.49	4,481.14	27.39	23.79	-153.81	302.10	-1,145.38	1,750.81	1,702.38	48.43	36.151	
4,600.00	4,537.57	4,540.00	4,549.65	28.05	24.15	-153.99	302.10	-1,144.56	1,766.12	1,716.75	49.37	35.774	
4,700.00	4,635.85	4,626.21	4,635.85	28.70	24.60	-154.22	302.10	-1,144.56	1,782.71	1,732.32	50.39	35.376	
4,800.00	4,734.14	4,724.50	4,734.14	29.35	25.12	-154.47	302.10	-1,144.56	1,799.37	1,747.89	51.48	34.953	
4,900.00	4,832.43	4,822.78	4,832.43	30.01	25.63	-154.72	302.10	-1,144.56	1,816.07	1,763.50	52.57	34.549	
5,000.00	4,930.72	4,921.07	4,930.72	30.66	26.15	-154.97	302.10	-1,144.56	1,832.80	1,779.15	53.65	34.161	
5,100.00	5,029.01	5,019.36	5,029.01	31.31	26.67	-155.21	302.10	-1,144.56	1,849.56	1,794.82	54.74	33.789	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17												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
5,200.00	5,127.29	5,117.65	5,127.29	31.97	27.18	-155.45	302.10	-1,144.56	1,866.36	1,810.53	55.82	33.432
5,300.00	5,225.58	5,215.93	5,225.58	32.62	27.70	-155.68	302.10	-1,144.56	1,883.18	1,826.27	56.91	33.090
5,400.00	5,323.87	5,314.22	5,323.87	33.27	28.22	-155.91	302.10	-1,144.56	1,900.03	1,842.04	58.00	32.760
5,500.00	5,422.16	5,412.51	5,422.16	33.93	28.74	-156.13	302.10	-1,144.56	1,916.92	1,857.83	59.09	32.443
5,600.00	5,520.52	5,510.87	5,520.52	34.58	29.25	-156.41	302.10	-1,144.56	1,933.45	1,873.22	60.23	32.101
5,700.00	5,619.38	5,609.73	5,619.38	35.19	29.78	-156.70	302.10	-1,144.56	1,947.24	1,885.86	61.39	31.719
5,800.00	5,718.71	5,709.06	5,718.71	35.77	30.30	-156.91	302.10	-1,144.56	1,957.88	1,895.39	62.48	31.334
5,900.00	5,818.37	5,808.73	5,818.37	36.31	30.83	-157.07	302.10	-1,144.56	1,965.32	1,901.81	63.51	30.945
6,000.00	5,918.26	5,908.62	5,918.26	36.82	31.36	-157.15	302.10	-1,144.56	1,969.55	1,905.09	64.46	30.553
6,100.00	6,018.25	6,008.61	6,018.25	37.28	31.88	-92.62	302.10	-1,144.56	1,970.63	1,905.21	65.42	30.125
6,200.00	6,118.25	6,108.61	6,118.25	37.74	32.41	-92.62	302.10	-1,144.56	1,970.63	1,904.19	66.44	29.662
6,300.00	6,218.25	6,208.61	6,218.25	38.19	32.94	-92.62	302.10	-1,144.56	1,970.63	1,903.17	67.46	29.212
6,400.00	6,318.25	6,308.61	6,318.25	38.65	33.47	-92.62	302.10	-1,144.56	1,970.63	1,902.14	68.48	28.775
6,500.00	6,418.25	6,408.61	6,418.25	39.11	34.00	-92.62	302.10	-1,144.56	1,970.63	1,901.12	69.51	28.350
6,600.00	6,518.25	6,508.61	6,518.25	39.57	34.53	-92.62	302.10	-1,144.56	1,970.63	1,900.09	70.54	27.938
6,700.00	6,618.25	6,608.61	6,618.25	40.04	35.07	-92.62	302.10	-1,144.56	1,970.63	1,899.06	71.57	27.536
6,800.00	6,718.25	6,708.61	6,718.25	40.51	35.60	-92.62	302.10	-1,144.56	1,970.63	1,898.03	72.59	27.146
6,900.00	6,818.25	6,808.61	6,818.25	40.97	36.13	-92.62	302.10	-1,144.56	1,970.63	1,897.00	73.63	26.765
7,000.00	6,918.25	6,908.61	6,918.25	41.44	36.66	-92.62	302.10	-1,144.56	1,970.63	1,895.97	74.66	26.395
7,100.00	7,018.25	7,008.61	7,018.25	41.91	37.19	-92.62	302.10	-1,144.56	1,970.63	1,894.94	75.69	26.035
7,200.00	7,118.25	7,108.61	7,118.25	42.39	37.72	-92.62	302.10	-1,144.56	1,970.63	1,893.90	76.73	25.684
7,300.00	7,218.25	7,208.61	7,218.25	42.86	38.25	-92.62	302.10	-1,144.56	1,970.63	1,892.87	77.76	25.342
7,400.00	7,318.25	7,308.61	7,318.25	43.34	38.78	-92.62	302.10	-1,144.56	1,970.63	1,891.83	78.80	25.008
7,500.00	7,418.25	7,408.61	7,418.25	43.81	39.32	-92.62	302.10	-1,144.56	1,970.63	1,890.79	79.84	24.683
7,600.00	7,518.25	7,508.61	7,518.25	44.29	39.85	-92.62	302.10	-1,144.56	1,970.63	1,889.75	80.87	24.366
7,700.00	7,618.25	7,608.61	7,618.25	44.77	40.38	-92.62	302.10	-1,144.56	1,970.63	1,888.71	81.91	24.057
7,800.00	7,718.25	7,708.61	7,718.25	45.25	40.91	-92.62	302.10	-1,144.56	1,970.63	1,887.67	82.95	23.755
7,900.00	7,818.25	7,808.61	7,818.25	45.74	41.45	-92.62	302.10	-1,144.56	1,970.63	1,886.63	84.00	23.461
8,000.00	7,918.25	7,908.61	7,918.25	46.22	41.98	-92.62	302.10	-1,144.56	1,970.63	1,885.59	85.04	23.173
8,100.00	8,018.25	8,008.61	8,018.25	46.70	42.51	-92.62	302.10	-1,144.56	1,970.63	1,884.55	86.08	22.893
8,200.00	8,118.25	8,108.61	8,118.25	47.19	43.05	-92.62	302.10	-1,144.56	1,970.63	1,883.50	87.12	22.618
8,300.00	8,218.25	8,208.61	8,218.25	47.68	43.58	-92.62	302.10	-1,144.56	1,970.63	1,882.46	88.17	22.351
8,400.00	8,318.25	8,308.61	8,318.25	48.17	44.11	-92.62	302.10	-1,144.56	1,970.63	1,881.41	89.21	22.089
8,500.00	8,418.25	8,408.61	8,418.25	48.66	44.65	-92.62	302.10	-1,144.56	1,970.63	1,880.37	90.26	21.833
8,600.00	8,518.25	8,508.61	8,518.25	49.15	45.18	-92.62	302.10	-1,144.56	1,970.63	1,879.32	91.31	21.583
8,648.15	8,566.40	8,556.75	8,566.40	49.38	45.44	-91.66	302.10	-1,144.56	1,970.64	1,878.86	91.78	21.471
8,700.00	8,618.24	8,608.59	8,618.24	49.64	45.71	-91.66	302.10	-1,144.56	1,970.65	1,878.32	92.33	21.344
8,800.00	8,717.19	8,707.54	8,717.19	50.16	46.24	-92.01	302.10	-1,144.56	1,971.09	1,877.67	93.42	21.099
8,900.00	8,812.27	8,802.62	8,812.27	50.70	46.75	-92.71	302.10	-1,144.56	1,972.42	1,877.89	94.53	20.865
9,000.00	8,900.60	8,890.96	8,900.60	51.24	47.22	-93.61	302.10	-1,144.56	1,975.36	1,879.73	95.63	20.656
9,100.00	8,979.50	8,969.85	8,979.50	51.77	47.64	-94.45	302.10	-1,144.56	1,980.89	1,884.19	96.70	20.486
9,200.00	9,046.57	9,036.92	9,046.57	52.30	48.00	-94.96	302.10	-1,144.56	1,990.06	1,892.35	97.72	20.366
9,300.00	9,099.76	9,090.12	9,099.76	52.84	48.28	-94.87	302.10	-1,144.56	2,003.84	1,905.13	98.71	20.300
9,400.00	9,137.47	9,127.83	9,137.47	53.42	48.48	-93.95	302.10	-1,144.56	2,022.85	1,923.16	99.69	20.292 SF
9,500.00	9,158.55	9,148.90	9,158.55	54.06	48.60	-92.03	302.10	-1,144.56	2,047.26	1,946.71	100.56	20.359
9,600.00	9,163.48	9,153.83	9,163.48	54.74	48.62	-90.26	302.10	-1,144.56	2,076.68	1,975.45	101.23	20.515
9,700.00	9,164.82	9,155.17	9,164.82	55.50	48.63	-90.30	302.10	-1,144.56	2,110.47	2,008.42	102.05	20.680
9,800.00	9,166.16	9,156.51	9,166.16	56.34	48.64	-90.33	302.10	-1,144.56	2,148.39	2,045.44	102.95	20.867
9,900.00	9,167.50	9,157.85	9,167.50	57.25	48.64	-90.37	302.10	-1,144.56	2,190.23	2,086.30	103.92	21.075
10,000.00	9,168.84	9,159.19	9,168.84	58.24	48.65	-90.41	302.10	-1,144.56	2,235.75	2,130.79	104.96	21.301
10,100.00	9,170.18	9,160.53	9,170.18	59.28	48.66	-90.45	302.10	-1,144.56	2,284.75	2,178.69	106.06	21.542
10,200.00	9,171.52	9,161.87	9,171.52	60.39	48.67	-90.49	302.10	-1,144.56	2,337.00	2,229.78	107.22	21.796

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17													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	
10,300.00	9,172.86	9,163.21	9,172.86	61.56	48.67	-90.53	302.10	-1,144.56	2,392.29	2,283.85	108.44	22.062	
10,400.00	9,174.20	9,164.56	9,174.20	62.78	48.68	-90.57	302.10	-1,144.56	2,450.41	2,340.71	109.70	22.337	
10,500.00	9,175.54	9,165.90	9,175.54	64.05	48.69	-90.61	302.10	-1,144.56	2,511.17	2,400.15	111.02	22.619	
10,600.00	9,176.88	9,167.24	9,176.88	65.37	48.69	-90.65	302.10	-1,144.56	2,574.38	2,462.00	112.38	22.907	
10,700.00	9,178.22	9,168.58	9,178.22	66.73	48.70	-90.69	302.10	-1,144.56	2,639.87	2,526.08	113.79	23.199	
10,800.00	9,179.56	9,169.92	9,179.56	68.14	48.71	-90.72	302.10	-1,144.56	2,707.47	2,592.23	115.24	23.494	
10,900.00	9,180.91	9,171.26	9,180.91	69.58	48.72	-90.76	302.10	-1,144.56	2,777.02	2,660.29	116.73	23.790	
11,000.00	9,182.25	9,172.60	9,182.25	71.06	48.72	-90.80	302.10	-1,144.56	2,848.39	2,730.13	118.25	24.088	
11,100.00	9,183.59	9,173.94	9,183.59	72.58	48.73	-90.84	302.10	-1,144.56	2,921.43	2,801.62	119.81	24.384	
11,200.00	9,184.93	9,175.28	9,184.93	74.13	48.74	-90.88	302.10	-1,144.56	2,996.03	2,874.64	121.39	24.680	
11,300.00	9,186.27	9,176.62	9,186.27	75.70	48.74	-90.92	302.10	-1,144.56	3,072.07	2,949.06	123.01	24.974	
11,400.00	9,187.61	9,177.96	9,187.61	77.31	48.75	-90.96	302.10	-1,144.56	3,149.46	3,024.80	124.66	25.265	
11,500.00	9,188.95	9,179.30	9,188.95	78.94	48.76	-91.00	302.10	-1,144.56	3,228.08	3,101.76	126.33	25.553	
11,600.00	9,190.29	9,180.64	9,190.29	80.60	48.77	-91.04	302.10	-1,144.56	3,307.86	3,179.84	128.02	25.838	
11,700.00	9,191.63	9,181.99	9,191.63	82.28	48.77	-91.08	302.10	-1,144.56	3,388.71	3,258.98	129.74	26.120	
11,800.00	9,192.97	9,183.33	9,192.97	83.99	48.78	-91.11	302.10	-1,144.56	3,470.56	3,339.09	131.48	26.397	
11,900.00	9,194.31	9,184.67	9,194.31	85.71	48.79	-91.15	302.10	-1,144.56	3,553.34	3,420.11	133.24	26.670	
12,000.00	9,195.65	9,186.01	9,195.65	87.46	48.80	-91.19	302.10	-1,144.56	3,636.98	3,501.97	135.01	26.938	
12,100.00	9,196.99	9,187.35	9,196.99	89.22	48.80	-91.23	302.10	-1,144.56	3,721.43	3,584.63	136.81	27.202	
12,200.00	9,198.33	9,188.69	9,198.33	91.00	48.81	-91.27	302.10	-1,144.56	3,806.64	3,668.02	138.62	27.461	
12,300.00	9,199.68	9,190.03	9,199.68	92.79	48.82	-91.31	302.10	-1,144.56	3,892.54	3,752.10	140.44	27.716	
12,400.00	9,201.02	9,191.37	9,201.02	94.61	48.82	-91.35	302.10	-1,144.56	3,979.11	3,836.82	142.29	27.966	
12,500.00	9,202.36	9,192.71	9,202.36	96.43	48.83	-91.39	302.10	-1,144.56	4,066.29	3,922.15	144.14	28.210	
12,600.00	9,203.70	9,194.05	9,203.70	98.27	48.84	-91.43	302.10	-1,144.56	4,154.05	4,008.04	146.01	28.451	
12,700.00	9,205.04	9,195.39	9,205.04	100.12	48.85	-91.46	302.10	-1,144.56	4,242.34	4,094.46	147.89	28.686	
12,800.00	9,206.38	9,196.73	9,206.38	101.99	48.85	-91.50	302.10	-1,144.56	4,331.15	4,181.37	149.78	28.916	
12,900.00	9,207.72	9,198.07	9,207.72	103.87	48.86	-91.54	302.10	-1,144.56	4,420.44	4,268.75	151.68	29.142	
13,000.00	9,209.06	9,199.41	9,209.06	105.75	48.87	-91.58	302.10	-1,144.56	4,510.17	4,356.57	153.60	29.364	
13,100.00	9,210.40	9,200.76	9,210.40	107.65	48.87	-91.62	302.10	-1,144.56	4,600.33	4,444.81	155.52	29.580	
13,200.00	9,211.74	9,202.10	9,211.74	109.56	48.88	-91.66	302.10	-1,144.56	4,690.89	4,533.43	157.45	29.792	
13,300.00	9,213.08	9,203.44	9,213.08	111.48	48.89	-91.70	302.10	-1,144.56	4,781.82	4,622.42	159.39	30.000	
13,400.00	9,214.42	9,204.78	9,214.42	113.40	48.90	-91.74	302.10	-1,144.56	4,873.10	4,711.76	161.34	30.204	
13,500.00	9,215.76	9,206.12	9,215.76	115.34	48.90	-91.78	302.10	-1,144.56	4,964.73	4,801.43	163.30	30.403	
13,600.00	9,217.10	9,207.46	9,217.10	117.28	48.91	-91.82	302.10	-1,144.56	5,056.67	4,891.40	165.26	30.598	
13,700.00	9,218.45	9,208.80	9,218.45	119.23	48.92	-91.85	302.10	-1,144.56	5,148.91	4,981.67	167.24	30.788	
13,800.00	9,219.79	9,210.14	9,219.79	121.19	48.92	-91.89	302.10	-1,144.56	5,241.43	5,072.22	169.21	30.975	
13,900.00	9,221.13	9,211.48	9,221.13	123.15	48.93	-91.93	302.10	-1,144.56	5,334.22	5,163.03	171.20	31.158	
14,000.00	9,222.47	9,212.82	9,222.47	125.12	48.94	-91.97	302.10	-1,144.56	5,427.27	5,254.08	173.19	31.337	
14,100.00	9,223.81	9,214.16	9,223.81	127.10	48.95	-92.01	302.10	-1,144.56	5,520.56	5,345.38	175.19	31.513	
14,200.00	9,225.15	9,215.50	9,225.15	129.08	48.95	-92.05	302.10	-1,144.56	5,614.09	5,436.90	177.19	31.684	
14,300.00	9,226.49	9,216.84	9,226.49	131.07	48.96	-92.09	302.10	-1,144.56	5,707.83	5,528.63	179.19	31.853	
14,400.00	9,227.83	9,218.18	9,227.83	133.06	48.97	-92.13	302.10	-1,144.56	5,801.78	5,620.57	181.21	32.017	
14,500.00	9,229.17	9,219.53	9,229.17	135.06	48.97	-92.17	302.10	-1,144.56	5,895.93	5,712.70	183.22	32.179	
14,600.00	9,230.51	9,220.87	9,230.51	137.06	48.98	-92.21	302.10	-1,144.56	5,990.33	5,804.99	185.24	32.321	
14,700.00	9,231.85	9,222.21	9,231.85	139.07	49.00	-92.25	302.10	-1,144.56	6,085.47	5,898.28	187.19	32.510	
14,800.00	9,233.19	9,223.55	9,233.19	141.08	49.02	-92.29	302.10	-1,144.56	6,180.90	5,991.71	189.19	32.670	
14,900.00	9,234.53	9,224.89	9,234.53	143.09	49.04	-92.33	302.10	-1,144.56	6,276.47	6,085.28	191.20	32.827	
15,000.00	9,235.87	9,226.23	9,235.87	145.11	49.06	-92.37	302.10	-1,144.56	6,372.18	6,178.98	193.21	32.981	
15,100.00	9,237.21	9,227.57	9,237.21	147.13	49.08	-92.41	302.10	-1,144.56	6,468.02	6,272.80	195.22	33.133	
15,200.00	9,238.55	9,228.91	9,238.55	149.16	49.10	-92.45	302.10	-1,144.56	6,563.97	6,366.75	197.23	33.281	
15,300.00	9,239.89	9,229.25	9,239.89	151.18	49.12	-92.49	302.10	-1,144.56	6,660.05	6,460.80	199.24	33.427	
15,400.00	9,241.23	9,230.59	9,241.23	153.22	49.14	-92.53	302.10	-1,144.56	6,756.23	6,554.97	201.26	33.570	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 14HD - OH / Job #61221 - Plan 3 05-10-17													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						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
15,500.00	9,263.21	9,253.57	9,263.21	155.25	49.16	-97.58	302.10	-1,144.56	6,852.53	6,649.25	203.28	33.710		
15,600.00	9,266.88	9,257.23	9,266.88	157.29	49.18	-97.69	302.10	-1,144.56	6,948.92	6,743.63	205.30	33.848		
15,700.00	9,270.54	9,260.90	9,270.54	159.33	49.20	-97.81	302.10	-1,144.56	7,045.42	6,838.10	207.32	33.983		
15,800.00	9,274.21	9,264.56	9,274.21	161.37	49.21	-97.92	302.10	-1,144.56	7,142.01	6,932.67	209.34	34.116		
15,900.00	9,277.87	9,268.23	9,277.87	163.42	49.23	-98.03	302.10	-1,144.56	7,238.69	7,027.32	211.37	34.247		
16,000.00	9,281.54	9,271.89	9,281.54	165.47	49.25	-98.15	302.10	-1,144.56	7,335.45	7,122.06	213.39	34.376		
16,100.00	9,285.20	9,275.56	9,285.20	167.52	49.27	-98.26	302.10	-1,144.56	7,432.31	7,216.89	215.42	34.502		
16,200.00	9,288.87	9,279.22	9,288.87	169.57	49.29	-98.37	302.10	-1,144.56	7,529.24	7,311.79	217.44	34.626		
16,300.00	9,292.53	9,282.89	9,292.53	171.63	49.31	-98.48	302.10	-1,144.56	7,626.25	7,406.77	219.47	34.748		
16,400.00	9,295.57	9,285.92	9,295.57	173.68	49.33	-93.71	302.10	-1,144.56	7,723.34	7,500.84	222.51	34.711		
16,500.00	9,295.67	9,286.02	9,295.67	175.74	49.33	-88.70	302.10	-1,144.56	7,820.55	7,596.27	224.28	34.869		
16,600.00	9,295.12	9,285.48	9,295.12	177.80	49.33	-88.68	302.10	-1,144.56	7,917.82	7,691.48	226.34	34.982		
16,700.00	9,294.57	9,284.93	9,294.57	179.87	49.32	-88.66	302.10	-1,144.56	8,015.16	7,786.75	228.40	35.092		
16,800.00	9,294.03	9,284.38	9,294.03	181.93	49.32	-88.64	302.10	-1,144.56	8,112.56	7,882.09	230.46	35.201		
16,900.00	9,293.48	9,283.84	9,293.48	184.00	49.32	-88.63	302.10	-1,144.56	8,210.02	7,977.50	232.53	35.308		
17,000.00	9,292.93	9,283.29	9,292.93	186.07	49.31	-88.61	302.10	-1,144.56	8,307.55	8,072.95	234.59	35.412		
17,100.00	9,292.39	9,282.74	9,292.39	188.14	49.31	-88.59	302.10	-1,144.56	8,405.13	8,168.47	236.66	35.515		
17,200.00	9,291.84	9,282.20	9,291.84	190.22	49.31	-88.58	302.10	-1,144.56	8,502.77	8,264.04	238.73	35.616		
17,300.00	9,291.30	9,281.65	9,291.30	192.29	49.31	-88.56	302.10	-1,144.56	8,600.47	8,359.66	240.80	35.716		
17,400.00	9,290.75	9,281.10	9,290.75	194.37	49.30	-88.54	302.10	-1,144.56	8,698.21	8,455.33	242.88	35.813		
17,500.00	9,290.20	9,280.56	9,290.20	196.45	49.30	-88.52	302.10	-1,144.56	8,796.01	8,551.06	244.95	35.909		
17,600.00	9,289.66	9,280.01	9,289.66	198.53	49.30	-88.51	302.10	-1,144.56	8,893.85	8,646.83	247.03	36.003		
17,700.00	9,289.11	9,279.46	9,289.11	200.61	49.29	-88.49	302.10	-1,144.56	8,991.75	8,742.64	249.11	36.096		
17,800.00	9,288.56	9,278.92	9,288.56	202.69	49.29	-88.47	302.10	-1,144.56	9,089.69	8,838.50	251.19	36.187		
17,900.00	9,288.02	9,278.37	9,288.02	204.78	49.29	-88.46	302.10	-1,144.56	9,187.67	8,934.40	253.27	36.277		
18,000.00	9,287.47	9,277.82	9,287.47	206.86	49.29	-88.44	302.10	-1,144.56	9,285.70	9,030.35	255.35	36.365		
18,100.00	9,286.92	9,277.28	9,286.92	208.95	49.28	-88.42	302.10	-1,144.56	9,383.76	9,126.33	257.43	36.452		
18,200.00	9,286.38	9,276.73	9,286.38	211.04	49.28	-88.40	302.10	-1,144.56	9,481.87	9,222.36	259.51	36.537		
18,300.00	9,285.83	9,276.18	9,285.83	213.13	49.28	-88.39	302.10	-1,144.56	9,580.02	9,318.42	261.60	36.621		
18,400.00	9,285.28	9,275.64	9,285.28	215.22	49.27	-88.37	302.10	-1,144.56	9,678.20	9,414.52	263.69	36.704		
18,500.00	9,284.74	9,275.09	9,284.74	217.31	49.27	-88.35	302.10	-1,144.56	9,776.43	9,510.65	265.77	36.785		
18,600.00	9,284.19	9,274.54	9,284.19	219.41	49.27	-88.34	302.10	-1,144.56	9,874.68	9,606.82	267.86	36.865		
18,700.00	9,283.64	9,274.00	9,283.64	221.50	49.27	-88.32	302.10	-1,144.56	9,972.98	9,703.02	269.95	36.944		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM, 9445-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	20.00	0.00	0.00	-77.41	302.10	-1,352.60	1,386.07				
100.00	100.00	80.00	100.00	0.19	0.15	-77.41	302.10	-1,352.60	1,385.93	1,385.58	0.35	3,977.585	
200.00	200.00	180.00	200.00	0.73	0.62	-77.41	302.10	-1,352.60	1,385.93	1,384.57	1.36	1,022.809	
300.00	300.00	280.00	300.00	1.27	1.16	-77.41	302.10	-1,352.60	1,385.93	1,383.50	2.43	570.239	
400.00	400.00	380.00	400.00	1.81	1.70	-77.41	302.10	-1,352.60	1,385.93	1,382.42	3.51	395.319	
500.00	500.00	480.00	500.00	2.34	2.24	-77.41	302.10	-1,352.60	1,385.93	1,381.35	4.58	302.521	
600.00	600.00	580.00	600.00	2.88	2.77	-77.41	302.10	-1,352.60	1,385.93	1,380.27	5.66	245.007 CC, ES	
700.00	699.98	679.98	699.98	3.41	3.31	-141.99	302.10	-1,352.60	1,387.30	1,380.58	6.73	206.187	
800.00	799.84	779.84	799.84	3.94	3.85	-142.07	302.10	-1,352.60	1,391.43	1,383.64	7.80	178.452	
900.00	899.45	879.45	899.45	4.48	4.38	-142.21	302.10	-1,352.60	1,398.32	1,389.46	8.87	157.724	
1,000.00	998.70	978.70	998.70	5.03	4.92	-142.39	302.10	-1,352.60	1,407.99	1,398.06	9.93	141.777	
1,100.00	1,097.47	1,077.47	1,097.47	5.60	5.45	-142.62	302.10	-1,352.60	1,420.46	1,409.47	10.99	129.223	
1,200.00	1,195.78	1,175.78	1,195.78	6.19	5.98	-143.01	302.10	-1,352.60	1,435.10	1,423.04	12.06	119.004	
1,300.00	1,294.07	1,274.07	1,294.07	6.79	6.51	-143.45	302.10	-1,352.60	1,449.95	1,436.81	13.14	110.371	
1,400.00	1,392.36	1,372.36	1,392.36	7.40	7.04	-143.87	302.10	-1,352.60	1,464.88	1,450.66	14.22	103.009	
1,500.00	1,490.65	1,470.65	1,490.65	8.02	7.56	-144.29	302.10	-1,352.60	1,479.89	1,464.58	15.31	96.667	
1,600.00	1,588.93	1,568.93	1,588.93	8.64	8.09	-144.70	302.10	-1,352.60	1,494.98	1,478.58	16.40	91.152	
1,700.00	1,687.22	1,667.22	1,687.22	9.27	8.62	-145.10	302.10	-1,352.60	1,510.14	1,492.64	17.50	86.318	
1,800.00	1,785.51	1,765.51	1,785.51	9.90	9.15	-145.50	302.10	-1,352.60	1,525.37	1,506.78	18.59	82.049	
1,900.00	1,883.80	1,863.80	1,883.80	10.54	9.68	-145.88	302.10	-1,352.60	1,540.67	1,520.99	19.69	78.252	
2,000.00	1,982.09	1,962.09	1,982.09	11.17	10.21	-146.26	302.10	-1,352.60	1,556.04	1,535.26	20.79	74.857	
2,100.00	2,080.37	2,060.37	2,080.37	11.81	10.73	-146.63	302.10	-1,352.60	1,571.48	1,549.59	21.89	71.802	
2,200.00	2,178.66	2,158.66	2,178.66	12.45	11.26	-147.00	302.10	-1,352.60	1,586.98	1,563.99	22.99	69.041	
2,300.00	2,276.95	2,256.95	2,276.95	13.10	11.84	-147.38	302.10	-1,352.56	1,602.52	1,578.39	24.13	66.414	
2,400.00	2,375.24	2,489.33	2,509.06	13.74	12.99	-148.13	302.10	-1,342.61	1,613.79	1,587.96	25.84	62.465	
2,500.00	2,473.52	2,622.78	2,641.84	14.38	13.69	-148.54	302.10	-1,329.30	1,619.45	1,592.35	27.10	59.768	
2,600.00	2,571.81	2,722.27	2,740.78	15.03	14.21	-148.84	302.10	-1,318.90	1,624.86	1,596.67	28.19	57.641	
2,700.00	2,670.10	2,821.76	2,839.72	15.68	14.74	-149.14	302.10	-1,308.50	1,630.32	1,601.04	29.29	55.670	
2,800.00	2,768.39	2,921.25	2,938.67	16.32	15.27	-149.44	302.10	-1,298.10	1,635.83	1,605.45	30.38	53.840	
2,900.00	2,866.67	3,020.74	3,037.61	16.97	15.81	-149.73	302.10	-1,287.70	1,641.38	1,609.89	31.48	52.136	
3,000.00	2,964.96	3,120.23	3,136.56	17.62	16.35	-150.02	302.10	-1,277.30	1,646.97	1,614.39	32.58	50.547	
3,100.00	3,063.25	3,219.72	3,235.50	18.27	16.89	-150.31	302.10	-1,266.90	1,652.60	1,618.92	33.69	49.060	
3,200.00	3,161.54	3,319.20	3,334.44	18.92	17.43	-150.60	302.10	-1,256.51	1,658.28	1,623.49	34.79	47.668	
3,300.00	3,259.83	3,418.69	3,433.39	19.57	17.98	-150.89	302.10	-1,246.11	1,664.00	1,628.11	35.89	46.361	
3,400.00	3,358.11	3,518.18	3,532.33	20.22	18.52	-151.17	302.10	-1,235.71	1,669.76	1,632.76	37.00	45.132	
3,500.00	3,456.40	3,617.67	3,631.27	20.87	19.07	-151.46	302.10	-1,225.31	1,675.56	1,637.46	38.10	43.974	
3,600.00	3,554.69	3,717.16	3,730.22	21.52	19.62	-151.74	302.10	-1,214.91	1,681.41	1,642.20	39.21	42.883	
3,700.00	3,652.98	3,816.65	3,829.16	22.17	20.17	-152.02	302.10	-1,204.51	1,687.29	1,646.97	40.32	41.851	
3,800.00	3,751.26	3,916.14	3,928.10	22.82	20.72	-152.29	302.10	-1,194.11	1,693.21	1,651.79	41.42	40.876	
3,900.00	3,849.55	4,015.62	4,027.05	23.48	21.28	-152.57	302.10	-1,183.71	1,699.17	1,656.64	42.53	39.951	
4,000.00	3,947.84	4,115.11	4,125.99	24.13	21.83	-152.84	302.10	-1,173.31	1,705.17	1,661.53	43.64	39.074	
4,100.00	4,046.13	4,214.60	4,224.93	24.78	22.39	-153.11	302.10	-1,162.91	1,711.21	1,666.47	44.75	38.241	
4,200.00	4,144.42	4,286.32	4,296.30	25.43	22.79	-153.31	302.10	-1,155.79	1,717.89	1,672.18	45.71	37.582	
4,300.00	4,242.70	4,348.33	4,358.12	26.09	23.13	-153.48	302.10	-1,150.97	1,726.69	1,680.07	46.62	37.038	
4,400.00	4,340.99	4,400.00	4,409.70	26.74	23.41	-153.62	302.10	-1,147.98	1,737.71	1,690.24	47.47	36.603	
4,500.00	4,439.28	4,471.49	4,481.14	27.39	23.79	-153.81	302.10	-1,145.38	1,750.81	1,702.38	48.43	36.151	
4,600.00	4,537.57	4,540.00	4,549.65	28.05	24.15	-153.99	302.10	-1,144.56	1,766.12	1,716.75	49.37	35.774	
4,700.00	4,635.85	4,626.21	4,635.85	28.70	24.60	-154.22	302.10	-1,144.56	1,782.71	1,732.32	50.39	35.376	
4,800.00	4,734.14	4,724.50	4,734.14	29.35	25.12	-154.47	302.10	-1,144.56	1,799.37	1,747.89	51.48	34.953	
4,900.00	4,832.43	4,822.78	4,832.43	30.01	25.63	-154.72	302.10	-1,144.56	1,816.07	1,763.50	52.57	34.549	
5,000.00	4,930.72	4,921.07	4,930.72	30.66	26.15	-154.97	302.10	-1,144.56	1,832.80	1,779.15	53.65	34.161	
5,100.00	5,029.01	5,019.36	5,029.01	31.31	26.67	-155.21	302.10	-1,144.56	1,849.56	1,794.82	54.74	33.789	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDGM, 9445-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 Tooface (")	Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,200.00	5,127.29	5,117.65	5,127.29	31.97	27.18	-155.45	302.10	-1,144.56	1,866.36	1,810.53	55.82	33.432	
5,300.00	5,225.58	5,215.93	5,225.58	32.62	27.70	-155.68	302.10	-1,144.56	1,883.18	1,826.27	56.91	33.090	
5,400.00	5,323.87	5,314.22	5,323.87	33.27	28.22	-155.91	302.10	-1,144.56	1,900.03	1,842.04	58.00	32.760	
5,500.00	5,422.16	5,412.51	5,422.16	33.93	28.74	-156.13	302.10	-1,144.56	1,916.92	1,857.83	59.09	32.443	
5,600.00	5,520.52	5,510.87	5,520.52	34.58	29.25	-156.41	302.10	-1,144.56	1,933.45	1,873.22	60.23	32.101	
5,700.00	5,619.38	5,609.73	5,619.38	35.19	29.78	-156.70	302.10	-1,144.56	1,947.24	1,885.86	61.39	31.719	
5,800.00	5,718.71	5,709.06	5,718.71	35.77	30.30	-156.91	302.10	-1,144.56	1,957.88	1,895.39	62.48	31.334	
5,900.00	5,818.37	5,808.73	5,818.37	36.31	30.83	-157.07	302.10	-1,144.56	1,965.32	1,901.81	63.51	30.945	
6,000.00	5,918.26	5,908.62	5,918.26	36.82	31.36	-157.15	302.10	-1,144.56	1,969.55	1,905.09	64.46	30.553	
6,100.00	6,018.25	6,008.61	6,018.25	37.28	31.88	-92.62	302.10	-1,144.56	1,970.63	1,905.21	65.42	30.125	
6,200.00	6,118.25	6,108.61	6,118.25	37.74	32.41	-92.62	302.10	-1,144.56	1,970.63	1,904.19	66.44	29.662	
6,300.00	6,218.25	6,208.61	6,218.25	38.19	32.94	-92.62	302.10	-1,144.56	1,970.63	1,903.17	67.46	29.212	
6,400.00	6,318.25	6,308.61	6,318.25	38.65	33.47	-92.62	302.10	-1,144.56	1,970.63	1,902.14	68.48	28.775	
6,500.00	6,418.25	6,408.61	6,418.25	39.11	34.00	-92.62	302.10	-1,144.56	1,970.63	1,901.12	69.51	28.350	
6,600.00	6,518.25	6,508.61	6,518.25	39.57	34.53	-92.62	302.10	-1,144.56	1,970.63	1,900.09	70.54	27.938	
6,700.00	6,618.25	6,608.61	6,618.25	40.04	35.07	-92.62	302.10	-1,144.56	1,970.63	1,899.06	71.57	27.536	
6,800.00	6,718.25	6,708.61	6,718.25	40.51	35.60	-92.62	302.10	-1,144.56	1,970.63	1,898.03	72.59	27.146	
6,900.00	6,818.25	6,808.61	6,818.25	40.97	36.13	-92.62	302.10	-1,144.56	1,970.63	1,897.00	73.63	26.765	
7,000.00	6,918.25	6,908.61	6,918.25	41.44	36.66	-92.62	302.10	-1,144.56	1,970.63	1,895.97	74.66	26.395	
7,100.00	7,018.25	7,008.61	7,018.25	41.91	37.19	-92.62	302.10	-1,144.56	1,970.63	1,894.94	75.69	26.035	
7,200.00	7,118.25	7,108.61	7,118.25	42.39	37.72	-92.62	302.10	-1,144.56	1,970.63	1,893.90	76.73	25.684	
7,300.00	7,218.25	7,208.61	7,218.25	42.86	38.25	-92.62	302.10	-1,144.56	1,970.63	1,892.87	77.76	25.342	
7,400.00	7,318.25	7,308.61	7,318.25	43.34	38.78	-92.62	302.10	-1,144.56	1,970.63	1,891.83	78.80	25.008	
7,500.00	7,418.25	7,408.61	7,418.25	43.81	39.32	-92.62	302.10	-1,144.56	1,970.63	1,890.79	79.84	24.683	
7,600.00	7,518.25	7,508.61	7,518.25	44.29	39.85	-92.62	302.10	-1,144.56	1,970.63	1,889.75	80.87	24.366	
7,700.00	7,618.25	7,608.61	7,618.25	44.77	40.38	-92.62	302.10	-1,144.56	1,970.63	1,888.71	81.91	24.057	
7,800.00	7,718.25	7,708.61	7,718.25	45.25	40.91	-92.62	302.10	-1,144.56	1,970.63	1,887.67	82.95	23.755	
7,900.00	7,818.25	7,808.61	7,818.25	45.74	41.45	-92.62	302.10	-1,144.56	1,970.63	1,886.63	84.00	23.461	
8,000.00	7,918.25	7,908.61	7,918.25	46.22	41.98	-92.62	302.10	-1,144.56	1,970.63	1,885.59	85.04	23.173	
8,100.00	8,018.25	8,008.61	8,018.25	46.70	42.51	-92.62	302.10	-1,144.56	1,970.63	1,884.55	86.08	22.893	
8,200.00	8,118.25	8,108.61	8,118.25	47.19	43.05	-92.62	302.10	-1,144.56	1,970.63	1,883.50	87.12	22.618	
8,300.00	8,218.25	8,208.61	8,218.25	47.68	43.58	-92.62	302.10	-1,144.56	1,970.63	1,882.46	88.17	22.351	
8,400.00	8,318.25	8,308.61	8,318.25	48.17	44.11	-92.62	302.10	-1,144.56	1,970.63	1,881.41	89.21	22.089	
8,500.00	8,418.25	8,408.61	8,418.25	48.66	44.65	-92.62	302.10	-1,144.56	1,970.63	1,880.37	90.26	21.833	
8,600.00	8,518.25	8,508.61	8,518.25	49.15	45.18	-92.62	302.10	-1,144.56	1,970.63	1,879.32	91.31	21.583	
8,648.15	8,566.40	8,556.75	8,566.40	49.38	45.44	-91.66	302.10	-1,144.56	1,970.64	1,878.86	91.78	21.471	
8,700.00	8,618.24	8,608.59	8,618.24	49.64	45.71	-91.66	302.10	-1,144.56	1,970.65	1,878.32	92.33	21.344	
8,800.00	8,717.19	8,707.54	8,717.19	50.16	46.24	-92.01	302.10	-1,144.56	1,971.09	1,877.67	93.42	21.099	
8,900.00	8,812.27	8,802.62	8,812.27	50.70	46.75	-92.71	302.10	-1,144.56	1,972.42	1,877.89	94.53	20.865	
9,000.00	8,900.60	8,890.96	8,900.60	51.24	47.22	-93.61	302.10	-1,144.56	1,975.36	1,879.73	95.63	20.656	
9,100.00	8,979.50	8,969.85	8,979.50	51.77	47.64	-94.45	302.10	-1,144.56	1,980.89	1,884.19	96.70	20.486	
9,200.00	9,046.57	9,036.92	9,046.57	52.30	48.00	-94.96	302.10	-1,144.56	1,990.06	1,892.35	97.72	20.366	
9,300.00	9,099.76	9,090.12	9,099.76	52.84	48.28	-94.87	302.10	-1,144.56	2,003.84	1,905.13	98.71	20.300	
9,400.00	9,137.47	9,127.83	9,137.47	53.42	48.48	-93.95	302.10	-1,144.56	2,022.85	1,923.16	99.69	20.292	
9,500.00	9,158.55	9,148.90	9,158.55	54.06	48.60	-92.03	302.10	-1,144.56	2,047.26	1,946.71	100.56	20.359	
9,600.00	9,163.48	9,153.83	9,163.48	54.74	48.62	-90.26	302.10	-1,144.56	2,076.68	1,975.45	101.23	20.515	
9,700.00	9,164.82	9,155.17	9,164.82	55.50	48.63	-90.30	302.10	-1,144.56	2,110.47	2,008.42	102.05	20.680	
9,800.00	9,166.16	10,672.13	10,016.72	56.34	53.68	-113.41	1,202.26	-1,153.35	2,140.04	2,037.16	102.88	20.800	
9,900.00	9,167.50	10,772.02	10,013.38	57.25	54.49	-113.30	1,302.09	-1,154.32	2,137.52	2,032.86	104.65	20.425	
10,000.00	9,168.84	10,871.91	10,010.05	58.24	55.37	-113.19	1,401.92	-1,155.29	2,135.01	2,028.45	106.55	20.037	
10,100.00	9,170.18	10,971.79	10,006.72	59.28	56.32	-113.09	1,501.74	-1,156.27	2,132.50	2,023.92	108.58	19.640	
10,200.00	9,171.52	11,071.68	10,003.39	60.39	57.34	-112.98	1,601.57	-1,157.24	2,130.00	2,019.28	110.72	19.238	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design													Offset Site Error: 0.00 usft	
HH SO 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17													Offset Well Error: 0.00 usft	
Survey Program: 0-MWD+HDGM, 9445-MWD+HDGM														
Reference		Offset		Semi Major Axis		Highside Toolface (")	Distance						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)	Minimum Separation (usft)	Separation Factor		
10,300.00	9,172.86	11,171.57	10,000.06	61.56	58.41	-112.87	1,701.40	-1,158.22	2,127.51	2,014.54	112.97	18.833		
10,400.00	9,174.20	11,271.46	9,996.73	62.78	59.55	-112.76	1,801.23	-1,159.19	2,125.03	2,009.70	115.33	18.426		
10,500.00	9,175.54	11,371.35	9,993.40	64.05	60.74	-112.65	1,901.06	-1,160.16	2,122.56	2,004.77	117.78	18.021		
10,600.00	9,176.88	11,471.23	9,990.07	65.37	61.99	-112.54	2,000.88	-1,161.14	2,120.09	1,999.75	120.33	17.618		
10,700.00	9,178.22	11,571.12	9,986.74	66.73	63.28	-112.43	2,100.71	-1,162.11	2,117.63	1,994.66	122.97	17.220		
10,800.00	9,179.56	11,671.01	9,983.41	68.14	64.62	-112.32	2,200.54	-1,163.09	2,115.18	1,989.48	125.69	16.828		
10,900.00	9,180.91	11,770.90	9,980.08	69.58	66.01	-112.22	2,300.37	-1,164.06	2,112.73	1,984.24	128.49	16.442		
11,000.00	9,182.25	11,870.79	9,976.75	71.06	67.43	-112.11	2,400.19	-1,165.03	2,110.30	1,978.93	131.37	16.064		
11,100.00	9,183.59	11,970.67	9,973.42	72.58	68.89	-111.99	2,500.02	-1,166.01	2,107.87	1,973.56	134.31	15.694		
11,200.00	9,184.93	12,070.56	9,970.09	74.13	70.39	-111.88	2,599.85	-1,166.98	2,105.45	1,968.13	137.32	15.333		
11,300.00	9,186.27	12,168.87	9,966.81	75.70	71.90	-111.78	2,698.10	-1,167.94	2,103.04	1,962.68	140.36	14.984		
11,400.00	9,187.61	12,259.77	9,964.82	77.31	73.32	-111.70	2,788.97	-1,168.83	2,101.04	1,957.72	143.33	14.659		
11,500.00	9,188.95	12,359.71	9,962.84	78.94	74.91	-111.62	2,888.89	-1,169.81	2,099.15	1,952.66	146.48	14.330		
11,600.00	9,190.29	12,459.65	9,960.86	80.60	76.53	-111.55	2,988.81	-1,170.79	2,097.25	1,947.56	149.69	14.011		
11,700.00	9,191.63	12,559.60	9,958.87	82.28	78.18	-111.47	3,088.72	-1,171.77	2,095.36	1,942.42	152.94	13.700		
11,800.00	9,192.97	12,659.54	9,956.89	83.99	79.85	-111.39	3,188.64	-1,172.75	2,093.47	1,937.23	156.24	13.399		
11,900.00	9,194.31	12,759.48	9,954.91	85.71	81.54	-111.31	3,288.56	-1,173.72	2,091.59	1,932.01	159.58	13.107		
12,000.00	9,195.65	12,859.42	9,952.92	87.46	83.25	-111.24	3,388.48	-1,174.70	2,089.71	1,926.75	162.96	12.823		
12,100.00	9,196.99	12,959.37	9,950.94	89.22	84.99	-111.16	3,488.39	-1,175.68	2,087.84	1,921.45	166.38	12.548		
12,200.00	9,198.33	13,059.31	9,948.96	91.00	86.74	-111.08	3,588.31	-1,176.66	2,085.96	1,916.13	169.84	12.282		
12,300.00	9,199.68	13,159.25	9,946.98	92.79	88.51	-111.00	3,688.23	-1,177.64	2,084.10	1,910.77	173.33	12.024		
12,400.00	9,201.02	13,259.19	9,944.99	94.61	90.30	-110.92	3,788.15	-1,178.62	2,082.23	1,905.39	176.85	11.774		
12,500.00	9,202.36	13,359.13	9,943.01	96.43	92.11	-110.85	3,888.07	-1,179.60	2,080.37	1,899.97	180.40	11.532		
12,600.00	9,203.70	13,459.08	9,941.03	98.27	93.93	-110.77	3,987.98	-1,180.58	2,078.52	1,894.54	183.98	11.298		
12,700.00	9,205.04	13,559.02	9,939.04	100.12	95.76	-110.69	4,087.90	-1,181.55	2,076.66	1,889.08	187.58	11.071		
12,800.00	9,206.38	13,658.96	9,937.06	101.99	97.61	-110.61	4,187.82	-1,182.53	2,074.82	1,883.60	191.22	10.851		
12,900.00	9,207.72	13,758.90	9,935.08	103.87	99.47	-110.53	4,287.74	-1,183.51	2,072.97	1,878.10	194.87	10.638		
13,000.00	9,209.06	13,858.84	9,933.10	105.75	101.34	-110.45	4,387.65	-1,184.49	2,071.13	1,872.58	198.55	10.431		
13,100.00	9,210.40	13,958.79	9,931.11	107.65	103.22	-110.37	4,487.57	-1,185.47	2,069.30	1,867.04	202.26	10.231		
13,200.00	9,211.74	14,058.73	9,929.13	109.56	105.12	-110.29	4,587.49	-1,186.45	2,067.46	1,861.48	205.98	10.037		
13,300.00	9,213.08	14,158.67	9,927.15	111.48	107.02	-110.21	4,687.41	-1,187.43	2,065.64	1,855.91	209.72	9.849		
13,400.00	9,214.42	14,258.61	9,925.16	113.40	108.93	-110.13	4,787.32	-1,188.41	2,063.81	1,850.33	213.49	9.667		
13,500.00	9,215.76	14,358.56	9,923.18	115.34	110.85	-110.05	4,887.24	-1,189.38	2,061.99	1,844.72	217.27	9.491		
13,600.00	9,217.10	14,440.35	9,922.48	117.28	112.43	-110.01	4,969.03	-1,190.19	2,060.57	1,839.88	220.69	9.337		
13,696.29	9,218.40	14,517.38	9,923.94	119.16	113.92	-110.03	5,046.04	-1,190.96	2,060.12	1,836.20	223.92	9.200		
13,700.00	9,218.45	14,520.35	9,924.04	119.23	113.98	-110.03	5,049.00	-1,190.99	2,060.12	1,836.08	224.04	9.195		
13,800.00	9,219.79	14,615.21	9,927.81	121.19	115.82	-110.10	5,143.79	-1,191.95	2,060.38	1,832.75	227.63	9.051		
13,900.00	9,221.13	14,715.17	9,931.87	123.15	117.77	-110.18	5,243.66	-1,192.96	2,060.67	1,829.35	231.32	8.908		
14,000.00	9,222.47	14,815.13	9,935.92	125.12	119.73	-110.26	5,343.53	-1,193.97	2,060.96	1,825.95	235.01	8.770		
14,100.00	9,223.81	14,915.09	9,939.97	127.10	121.69	-110.34	5,443.41	-1,194.98	2,061.26	1,822.54	238.72	8.635		
14,200.00	9,225.15	15,015.05	9,944.03	129.08	123.66	-110.41	5,543.28	-1,195.99	2,061.56	1,819.12	242.43	8.504		
14,300.00	9,226.49	15,115.02	9,948.08	131.07	125.63	-110.49	5,643.15	-1,197.00	2,061.86	1,815.70	246.16	8.376		
14,400.00	9,227.83	15,214.98	9,952.14	133.06	127.61	-110.57	5,743.03	-1,198.02	2,062.17	1,812.28	249.89	8.252		
14,500.00	9,229.17	15,314.94	9,956.19	135.06	129.60	-110.64	5,842.90	-1,199.03	2,062.48	1,808.86	253.62	8.132		
14,600.00	9,230.68	15,414.90	9,960.24	137.06	131.59	-110.73	5,942.78	-1,200.04	2,062.91	1,805.46	257.46	8.013		
14,700.00	9,233.89	15,562.47	9,963.89	139.07	134.53	-110.73	6,090.29	-1,200.34	2,063.16	1,800.82	262.34	7.864		
14,800.00	9,237.56	15,662.44	9,965.16	141.08	136.53	-110.66	6,190.25	-1,199.94	2,062.82	1,796.56	266.26	7.747		
14,900.00	9,241.22	15,762.41	9,966.43	143.09	138.54	-110.59	6,290.21	-1,199.54	2,062.48	1,792.30	270.18	7.634		
15,000.00	9,244.89	15,862.38	9,967.70	145.11	140.55	-110.53	6,390.18	-1,199.14	2,062.14	1,788.02	274.12	7.523		
15,100.00	9,248.55	15,962.35	9,968.98	147.13	142.56	-110.46	6,490.14	-1,198.74	2,061.81	1,783.75	278.06	7.415		
15,200.00	9,252.22	16,062.32	9,970.25	149.16	144.58	-110.39	6,590.10	-1,198.34	2,061.47	1,779.46	282.01	7.310		
15,300.00	9,255.88	16,162.29	9,971.52	151.18	146.60	-110.32	6,690.06	-1,197.94	2,061.15	1,775.17	285.97	7.207		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 14HD - ST01 / Job #61221 - Plan 4 06-09-17														Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM, 9445-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)		+N/-S (usft)	+E/-W (usft)							
15,400.00	9,259.55	16,262.26	9,972.80	153.22	148.63	-110.26	6,790.02	-1,197.54	2,060.82	1,770.87	289.95	7.108			
15,500.00	9,263.21	16,362.23	9,974.07	155.25	150.66	-110.19	6,889.98	-1,197.14	2,060.50	1,766.57	293.92	7.010			
15,600.00	9,266.88	16,462.20	9,975.34	157.29	152.69	-110.12	6,989.94	-1,196.74	2,060.18	1,762.27	297.91	6.915			
15,700.00	9,270.54	16,562.17	9,976.62	159.33	154.72	-110.05	7,089.90	-1,196.34	2,059.86	1,757.95	301.90	6.823			
15,800.00	9,274.21	16,662.14	9,977.89	161.37	156.76	-109.99	7,189.86	-1,195.94	2,059.54	1,753.64	305.91	6.733			
15,900.00	9,277.87	16,762.11	9,979.16	163.42	158.80	-109.92	7,289.82	-1,195.54	2,059.23	1,749.32	309.91	6.645			
16,000.00	9,281.54	16,862.08	9,980.44	165.47	160.85	-109.85	7,389.79	-1,195.14	2,058.92	1,744.99	313.93	6.559			
16,100.00	9,285.20	16,962.05	9,981.71	167.52	162.90	-109.78	7,489.75	-1,194.74	2,058.62	1,740.66	317.95	6.475			
16,200.00	9,288.87	17,062.02	9,982.98	169.57	164.95	-109.72	7,589.71	-1,194.34	2,058.31	1,736.33	321.98	6.393			
16,300.00	9,292.53	17,157.96	9,984.25	171.63	166.91	-109.65	7,689.64	-1,193.95	2,058.03	1,732.10	325.93	6.314			
16,306.18	9,292.75	17,162.90	9,984.34	171.75	167.02	-109.65	7,690.57	-1,193.94	2,058.03	1,731.87	326.16	6.310			
16,400.00	9,295.57	17,248.64	9,986.84	173.68	168.78	-109.64	7,776.28	-1,193.61	2,058.48	1,728.69	329.79	6.242			
16,500.00	9,295.67	17,348.59	9,989.96	175.74	170.83	-109.69	7,876.18	-1,193.24	2,059.97	1,726.24	333.72	6.173			
16,600.00	9,295.12	17,448.52	9,993.08	177.80	172.89	-109.79	7,976.06	-1,192.87	2,061.67	1,724.11	337.55	6.108			
16,700.00	9,294.57	17,548.45	9,996.20	179.87	174.95	-109.88	8,075.94	-1,192.50	2,063.37	1,721.99	341.38	6.044			
16,800.00	9,294.03	17,648.38	9,999.31	181.93	177.01	-109.97	8,175.82	-1,192.13	2,065.08	1,719.86	345.21	5.982			
16,900.00	9,293.48	17,748.31	10,002.43	184.00	179.07	-110.06	8,275.71	-1,191.76	2,066.79	1,717.75	349.05	5.921			
17,000.00	9,292.93	17,848.24	10,005.55	186.07	181.14	-110.15	8,375.59	-1,191.39	2,068.51	1,715.64	352.88	5.862			
17,100.00	9,292.39	17,948.18	10,008.67	188.14	183.21	-110.24	8,475.47	-1,191.02	2,070.24	1,713.53	356.71	5.804			
17,200.00	9,291.84	18,048.11	10,011.79	190.22	185.28	-110.33	8,575.35	-1,190.65	2,071.97	1,711.43	360.54	5.747			
17,300.00	9,291.30	18,148.04	10,014.91	192.29	187.35	-110.42	8,675.23	-1,190.28	2,073.70	1,709.33	364.37	5.691			
17,400.00	9,290.75	18,247.97	10,018.02	194.37	189.42	-110.51	8,775.12	-1,189.91	2,075.44	1,707.24	368.20	5.637			
17,500.00	9,290.20	18,347.90	10,021.14	196.45	191.50	-110.60	8,875.00	-1,189.54	2,077.19	1,705.15	372.04	5.583			
17,600.00	9,289.66	18,447.83	10,024.26	198.53	193.57	-110.69	8,974.88	-1,189.17	2,078.94	1,703.07	375.87	5.531			
17,700.00	9,289.11	18,547.77	10,027.38	200.61	195.65	-110.78	9,074.76	-1,188.80	2,080.70	1,701.00	379.70	5.480			
17,800.00	9,288.56	18,647.70	10,030.50	202.69	197.73	-110.87	9,174.65	-1,188.43	2,082.46	1,698.93	383.53	5.430			
17,900.00	9,288.02	18,747.63	10,033.62	204.78	199.81	-110.96	9,274.53	-1,188.06	2,084.22	1,696.87	387.35	5.381			
18,000.00	9,287.47	18,847.56	10,036.74	206.86	201.90	-111.05	9,374.41	-1,187.68	2,085.99	1,694.81	391.18	5.333			
18,100.00	9,286.92	18,947.49	10,039.85	208.95	203.98	-111.14	9,474.29	-1,187.31	2,087.77	1,692.76	395.01	5.285			
18,200.00	9,286.38	19,048.42	10,043.01	211.04	206.30	-111.23	9,574.17	-1,186.94	2,089.54	1,690.71	398.84	5.236			
18,300.00	9,285.83	19,148.35	10,046.17	213.13	208.76	-111.32	9,674.05	-1,186.56	2,091.31	1,688.66	402.67	5.188			
18,400.00	9,285.28	19,248.28	10,049.33	215.22	210.85	-111.41	9,773.93	-1,186.18	2,093.08	1,686.61	406.50	5.140			
18,500.00	9,284.74	19,348.21	10,052.49	217.31	212.95	-111.50	9,873.81	-1,185.80	2,094.85	1,684.56	410.33	5.092			
18,600.00	9,284.19	19,448.14	10,055.65	219.40	215.04	-111.59	9,973.69	-1,185.42	2,096.62	1,682.51	414.16	5.044			
18,700.00	9,283.64	19,548.07	10,058.81	221.50	217.14	-111.68	10,073.57	-1,185.04	2,098.39	1,680.46	417.99	4.996			
18,800.00	9,283.10	19,647.99	10,062.00	223.60	219.24	-111.77	10,173.45	-1,184.66	2,099.16	1,678.41	421.82	4.948			
18,900.00	9,282.55	19,747.92	10,065.16	225.69	221.33	-111.86	10,273.33	-1,184.28	2,100.93	1,676.36	425.65	4.899			
19,000.00	9,282.00	19,847.85	10,068.32	227.79	223.43	-111.95	10,373.21	-1,183.90	2,102.70	1,674.31	429.48	4.851			
19,100.00	9,281.46	19,947.78	10,071.48	229.89	225.53	-112.04	10,473.09	-1,183.52	2,104.47	1,672.26	433.31	4.803			
19,200.00	9,280.91	20,047.71	10,074.64	231.99	227.64	-112.13	10,572.97	-1,183.14	2,106.24	1,670.21	437.14	4.755			
19,300.00	9,280.36	20,147.64	10,077.80	234.09	229.74	-112.22	10,672.85	-1,182.76	2,108.01	1,668.16	440.97	4.707			
19,400.00	9,279.82	20,247.57	10,080.96	236.19	231.84	-112.31	10,772.73	-1,182.38	2,109.78	1,666.11	444.80	4.659			
19,500.00	9,279.27	20,347.50	10,084.12	238.29	233.95	-112.40	10,872.61	-1,182.00	2,111.55	1,664.06	448.63	4.611			
19,549.38	9,279.00	20,425.84	10,084.24	239.33	234.99	-112.49	10,952.55	-1,181.73	2,113.32	1,662.01	452.46	4.563			

CC - Min centre to center distance or covergent 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17												Offset Site Error:	0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-MWD+HDGM												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
0.00	0.00	0.00	22.00	0.00	0.00	-73.46	402.10	-1,353.60	1,412.24				
100.00	100.00	81.21	103.21	0.19	0.12	-73.45	402.16	-1,353.49	1,411.98	1,411.67	0.31	4,565.415	
200.00	200.00	188.37	210.37	0.73	0.30	-73.43	402.44	-1,352.97	1,411.59	1,410.56	1.03	1,374.947	
300.00	300.00	308.53	330.51	1.27	0.69	-73.40	402.75	-1,350.79	1,409.89	1,407.93	1.96	719.111	
400.00	400.00	412.72	434.66	1.81	1.02	-73.41	401.81	-1,348.56	1,407.57	1,404.74	2.83	497.454	
500.00	500.00	524.71	546.61	2.34	1.26	-73.44	400.06	-1,345.76	1,404.74	1,401.14	3.60	389.765	
600.00	600.00	763.79	784.92	2.88	2.01	-73.47	394.53	-1,329.19	1,398.78	1,393.89	4.89	285.993	
700.00	699.98	872.00	892.05	3.41	2.54	-138.23	390.44	-1,314.43	1,385.86	1,379.96	5.91	234.620	
800.00	799.84	950.97	970.30	3.94	2.96	-138.47	387.31	-1,304.31	1,376.39	1,369.59	6.81	202.169	
900.00	899.45	1,035.84	1,054.58	4.48	3.42	-138.76	384.35	-1,294.80	1,371.15	1,363.38	7.76	176.608	
998.68	997.40	1,122.63	1,140.85	5.02	3.90	-139.04	382.50	-1,285.49	1,369.43	1,360.68	8.74	156.611 CC	
1,000.00	998.70	1,123.79	1,142.00	5.03	3.91	-139.04	382.49	-1,285.37	1,369.43	1,360.67	8.76	156.380 ES	
1,100.00	1,097.47	1,231.81	1,249.39	5.60	4.50	-139.38	381.96	-1,273.71	1,370.78	1,360.92	9.86	139.013	
1,200.00	1,195.78	1,321.14	1,338.16	6.19	5.00	-139.71	381.80	-1,263.65	1,373.83	1,362.94	10.89	126.209	
1,300.00	1,294.07	1,414.61	1,431.09	6.79	5.52	-140.04	382.61	-1,253.73	1,377.93	1,365.98	11.94	115.383	
1,400.00	1,392.36	1,510.44	1,526.38	7.40	6.06	-140.35	384.14	-1,243.60	1,382.31	1,369.29	13.02	106.168	
1,500.00	1,490.65	1,597.24	1,612.74	8.02	6.54	-140.64	385.12	-1,235.00	1,387.27	1,373.21	14.06	98.696	
1,600.00	1,588.93	1,705.78	1,720.81	8.64	7.15	-141.04	385.94	-1,224.94	1,392.83	1,377.62	15.21	91.562	
1,700.00	1,687.22	1,819.00	1,833.34	9.27	7.80	-141.41	387.08	-1,212.56	1,396.80	1,380.40	16.40	85.170	
1,800.00	1,785.51	1,913.00	1,926.78	9.90	8.33	-141.73	387.86	-1,202.36	1,400.92	1,383.43	17.49	80.099	
1,900.00	1,883.80	1,977.71	1,991.23	10.54	8.69	-141.97	388.12	-1,196.66	1,406.85	1,388.43	18.42	76.371	
2,000.00	1,982.09	2,062.10	2,075.41	11.17	9.16	-142.30	388.35	-1,190.65	1,414.56	1,395.10	19.46	72.702	
2,100.00	2,080.37	2,159.33	2,172.43	11.81	9.69	-142.68	388.59	-1,184.16	1,422.78	1,402.22	20.56	69.205	
2,200.00	2,178.66	2,260.60	2,273.47	12.45	10.24	-143.06	388.99	-1,177.33	1,431.04	1,409.35	21.68	65.996	
2,300.00	2,276.95	2,362.76	2,375.37	13.10	10.80	-143.43	389.64	-1,170.19	1,439.16	1,416.34	22.81	63.082	
2,400.00	2,375.24	2,465.00	2,477.34	13.74	11.36	-143.79	390.54	-1,162.79	1,447.13	1,423.19	23.95	60.435	
2,500.00	2,473.52	2,565.64	2,577.69	14.38	11.92	-144.12	391.66	-1,155.29	1,455.00	1,429.94	25.07	58.039	
2,600.00	2,571.81	2,690.74	2,702.35	15.03	12.62	-144.52	393.20	-1,144.90	1,462.12	1,435.79	26.33	55.537	
2,700.00	2,670.10	2,809.19	2,820.19	15.68	13.30	-144.90	394.32	-1,132.92	1,467.39	1,439.84	27.55	53.256	
2,800.00	2,768.39	2,907.34	2,917.79	16.32	13.86	-145.21	395.07	-1,122.61	1,472.32	1,443.65	28.67	51.349	
2,900.00	2,866.67	3,002.65	3,012.59	16.97	14.41	-145.50	395.95	-1,112.79	1,477.54	1,447.76	29.78	49.620	
3,000.00	2,964.96	3,101.89	3,111.32	17.62	14.98	-145.80	397.09	-1,102.76	1,483.02	1,452.11	30.90	47.990	
3,100.00	3,063.25	3,205.09	3,213.95	18.27	15.57	-146.10	398.46	-1,092.12	1,488.36	1,456.31	32.05	46.440	
3,200.00	3,161.54	3,309.18	3,317.44	18.92	16.17	-146.39	400.05	-1,081.08	1,493.47	1,460.27	33.20	44.983	
3,300.00	3,259.83	3,405.89	3,413.58	19.57	16.72	-146.65	401.51	-1,070.70	1,498.49	1,464.18	34.31	43.671	
3,400.00	3,358.11	3,484.97	3,492.27	20.22	17.17	-146.90	402.05	-1,062.84	1,504.27	1,468.94	35.33	42.580	
3,500.00	3,456.40	3,553.78	3,560.86	20.87	17.56	-147.15	401.58	-1,057.32	1,511.81	1,475.53	36.28	41.667	
3,600.00	3,554.69	3,619.00	3,625.97	21.52	17.91	-147.42	400.58	-1,053.72	1,521.69	1,484.48	37.21	40.889	
3,700.00	3,652.98	3,685.28	3,692.20	22.17	18.26	-147.70	399.38	-1,051.53	1,533.80	1,495.65	38.14	40.210	
3,800.00	3,751.26	3,766.18	3,773.07	22.82	18.67	-148.04	398.09	-1,050.22	1,547.67	1,508.52	39.14	39.539	
3,900.00	3,849.55	3,851.22	3,858.11	23.48	19.09	-148.39	397.00	-1,049.43	1,562.37	1,522.22	40.15	38.910	
4,000.00	3,947.84	3,939.40	3,946.29	24.13	19.51	-148.72	396.41	-1,049.43	1,578.08	1,536.91	41.17	38.331	
4,100.00	4,046.13	4,038.87	4,045.75	24.78	19.99	-149.09	395.77	-1,049.55	1,593.99	1,551.75	42.24	37.739	
4,200.00	4,144.42	4,136.92	4,143.80	25.43	20.46	-149.46	395.02	-1,049.62	1,609.91	1,566.61	43.30	37.182	
4,300.00	4,242.70	4,233.32	4,240.20	26.09	20.93	-149.80	394.30	-1,049.77	1,625.97	1,581.62	44.35	36.661	
4,400.00	4,340.99	4,328.95	4,335.82	26.74	21.39	-150.14	393.62	-1,050.03	1,642.21	1,596.81	45.40	36.172	
4,500.00	4,439.28	4,425.00	4,431.87	27.39	21.85	-150.48	392.84	-1,050.47	1,658.68	1,612.23	46.45	35.711	
4,600.00	4,537.57	4,521.48	4,528.35	28.05	22.31	-150.81	391.93	-1,050.99	1,675.29	1,627.79	47.50	35.271	
4,700.00	4,635.85	4,616.49	4,623.35	28.70	22.77	-151.14	391.09	-1,051.64	1,692.10	1,643.56	48.54	34.861	
4,800.00	4,734.14	4,709.92	4,716.77	29.35	23.22	-151.45	390.34	-1,052.49	1,709.18	1,659.61	49.57	34.479	
4,900.00	4,832.43	4,802.43	4,809.27	30.01	23.67	-151.75	389.54	-1,053.61	1,726.61	1,676.02	50.60	34.125	
5,000.00	4,930.72	4,897.08	4,903.91	30.66	24.12	-152.06	388.60	-1,055.04	1,744.39	1,692.75	51.63	33.784	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-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	5,029.01	4,993.79	5,000.59	31.31	24.59	-152.38	387.42	-1,056.60	1,762.30	1,709.62	52.68	33.452	
5,200.00	5,127.29	5,120.50	5,127.29	31.97	25.21	-152.77	386.22	-1,057.94	1,779.80	1,725.92	53.88	33.035	
5,300.00	5,225.58	5,218.79	5,225.58	32.62	25.70	-153.04	386.22	-1,057.94	1,796.26	1,741.32	54.94	32.694	
5,400.00	5,323.87	5,317.08	5,323.87	33.27	26.20	-153.30	386.22	-1,057.94	1,812.76	1,756.75	56.01	32.367	
5,500.00	5,422.16	5,415.37	5,422.16	33.93	26.69	-153.56	386.22	-1,057.94	1,829.30	1,772.22	57.07	32.052	
5,600.00	5,520.52	5,513.73	5,520.52	34.58	27.18	-153.88	386.22	-1,057.94	1,845.49	1,787.31	58.18	31.719	
5,700.00	5,619.38	5,612.59	5,619.38	35.19	27.68	-154.20	386.22	-1,057.94	1,859.02	1,799.73	59.29	31.353	
5,800.00	5,718.71	5,711.92	5,718.71	35.77	28.19	-154.44	386.22	-1,057.94	1,869.45	1,809.10	60.34	30.980	
5,900.00	5,818.37	5,811.59	5,818.37	36.31	28.69	-154.61	386.22	-1,057.94	1,876.75	1,815.42	61.33	30.601	
6,000.00	5,918.26	5,911.48	5,918.26	36.82	29.20	-154.71	386.22	-1,057.94	1,880.90	1,818.65	62.25	30.216	
6,100.00	6,018.25	6,011.46	6,018.25	37.28	29.71	-90.18	386.22	-1,057.94	1,881.96	1,818.78	63.18	29.789	
6,200.00	6,118.25	6,111.46	6,118.25	37.74	30.22	-90.18	386.22	-1,057.94	1,881.96	1,817.78	64.18	29.323	
6,300.00	6,218.25	6,211.46	6,218.25	38.19	30.73	-90.18	386.22	-1,057.94	1,881.96	1,816.77	65.18	28.871	
6,400.00	6,318.25	6,311.46	6,318.25	38.65	31.25	-90.18	386.22	-1,057.94	1,881.96	1,815.77	66.19	28.432	
6,500.00	6,418.25	6,411.46	6,418.25	39.11	31.76	-90.18	386.22	-1,057.94	1,881.96	1,814.76	67.20	28.005	
6,600.00	6,518.25	6,511.46	6,518.25	39.57	32.27	-90.18	386.22	-1,057.94	1,881.96	1,813.75	68.21	27.590	
6,700.00	6,618.25	6,611.46	6,618.25	40.04	32.79	-90.18	386.22	-1,057.94	1,881.96	1,812.73	69.23	27.186	
6,800.00	6,718.25	6,711.46	6,718.25	40.51	33.30	-90.18	386.22	-1,057.94	1,881.96	1,811.72	70.24	26.793	
6,900.00	6,818.25	6,811.46	6,818.25	40.97	33.82	-90.18	386.22	-1,057.94	1,881.96	1,810.70	71.26	26.411	
7,000.00	6,918.25	6,911.46	6,918.25	41.44	34.34	-90.18	386.22	-1,057.94	1,881.96	1,809.68	72.27	26.039	
7,100.00	7,018.25	7,011.46	7,018.25	41.91	34.85	-90.18	386.22	-1,057.94	1,881.96	1,808.66	73.29	25.677	
7,200.00	7,118.25	7,111.46	7,118.25	42.39	35.37	-90.18	386.22	-1,057.94	1,881.96	1,807.64	74.32	25.324	
7,300.00	7,218.25	7,211.46	7,218.25	42.86	35.89	-90.18	386.22	-1,057.94	1,881.96	1,806.62	75.34	24.980	
7,400.00	7,318.25	7,311.46	7,318.25	43.34	36.41	-90.18	386.22	-1,057.94	1,881.96	1,805.59	76.36	24.645	
7,500.00	7,418.25	7,411.46	7,418.25	43.81	36.93	-90.18	386.22	-1,057.94	1,881.96	1,804.57	77.39	24.318	
7,600.00	7,518.25	7,511.46	7,518.25	44.29	37.45	-90.18	386.22	-1,057.94	1,881.96	1,803.54	78.42	24.000	
7,700.00	7,618.25	7,611.46	7,618.25	44.77	37.97	-90.18	386.22	-1,057.94	1,881.96	1,802.51	79.44	23.689	
7,800.00	7,718.25	7,711.46	7,718.25	45.25	38.49	-90.18	386.22	-1,057.94	1,881.96	1,801.48	80.47	23.386	
7,900.00	7,818.25	7,811.46	7,818.25	45.74	39.01	-90.18	386.22	-1,057.94	1,881.96	1,800.45	81.50	23.091	
8,000.00	7,918.25	7,911.46	7,918.25	46.22	39.54	-90.18	386.22	-1,057.94	1,881.96	1,799.42	82.53	22.802	
8,100.00	8,018.25	8,011.46	8,018.25	46.70	40.06	-90.18	386.22	-1,057.94	1,881.96	1,798.39	83.57	22.520	
8,200.00	8,118.25	8,111.46	8,118.25	47.19	40.58	-90.18	386.22	-1,057.94	1,881.96	1,797.36	84.60	22.245	
8,300.00	8,218.25	8,211.46	8,218.25	47.68	41.11	-90.18	386.22	-1,057.94	1,881.96	1,796.32	85.64	21.976	
8,400.00	8,318.25	8,311.46	8,318.25	48.17	41.63	-90.18	386.22	-1,057.94	1,881.96	1,795.29	86.67	21.714	
8,500.00	8,418.25	8,411.46	8,418.25	48.66	42.15	-90.18	386.22	-1,057.94	1,881.96	1,794.25	87.71	21.457	
8,600.00	8,518.25	8,511.46	8,518.25	49.15	42.68	-90.18	386.22	-1,057.94	1,881.96	1,793.21	88.75	21.206	
8,700.00	8,618.24	8,610.83	8,617.61	49.64	43.20	-89.21	386.74	-1,057.94	1,881.95	1,792.21	89.74	20.971	
8,800.00	8,717.19	8,708.35	8,714.23	50.16	43.70	-89.24	399.11	-1,058.08	1,881.86	1,791.09	90.78	20.730	
8,900.00	8,812.27	8,806.06	8,807.52	50.70	44.18	-89.30	427.75	-1,058.40	1,881.68	1,789.84	91.84	20.489	
9,000.00	8,900.60	8,904.01	8,894.81	51.24	44.62	-89.38	471.92	-1,058.89	1,881.39	1,788.48	92.91	20.249	
9,100.00	8,979.50	9,002.28	8,973.54	51.77	44.99	-89.48	530.51	-1,059.54	1,881.02	1,787.01	94.00	20.010	
9,200.00	9,046.57	9,100.90	9,041.35	52.30	45.35	-89.59	601.96	-1,060.34	1,880.57	1,785.45	95.13	19.769	
9,300.00	9,099.76	9,200.00	9,096.14	52.84	45.77	-89.72	684.38	-1,061.25	1,880.07	1,783.78	96.29	19.525	
9,400.00	9,137.47	9,299.39	9,136.02	53.42	46.26	-89.85	775.28	-1,062.26	1,879.52	1,782.02	97.50	19.277	
9,500.00	9,158.55	9,399.32	9,159.70	54.06	46.78	-89.99	872.23	-1,063.34	1,878.94	1,780.18	98.76	19.025	
9,600.00	9,163.48	9,499.67	9,166.23	54.74	47.32	-90.08	972.23	-1,064.45	1,878.36	1,778.31	100.05	18.774	
9,700.00	9,164.82	9,599.64	9,165.31	55.50	47.93	-90.01	1,072.19	-1,065.56	1,877.77	1,776.31	101.45	18.509	
9,800.00	9,166.16	9,699.61	9,164.38	56.34	48.62	-89.94	1,172.16	-1,066.68	1,877.18	1,774.16	103.02	18.222	
9,900.00	9,167.50	9,799.59	9,163.46	57.25	49.40	-89.87	1,272.12	-1,067.79	1,876.59	1,771.85	104.74	17.917	
10,000.00	9,168.84	9,899.56	9,162.53	58.24	50.26	-89.80	1,372.08	-1,068.90	1,876.01	1,769.40	106.61	17.598	
10,100.00	9,170.18	9,999.53	9,161.61	59.28	51.19	-89.73	1,472.04	-1,070.01	1,875.43	1,766.82	108.61	17.267	
10,200.00	9,171.52	10,099.51	9,160.68	60.39	52.20	-89.66	1,572.00	-1,071.12	1,874.85	1,764.10	110.75	16.928	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17														Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-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	
10,300.00	9,172.86	10,199.48	9,159.76	61.56	53.27	-89.60	1,671.97	-1,072.23	1,874.28	1,761.26	113.02	16.584		
10,400.00	9,174.20	10,299.45	9,158.83	62.78	54.41	-89.53	1,771.93	-1,073.34	1,873.70	1,758.31	115.40	16.237		
10,500.00	9,175.54	10,399.42	9,157.91	64.05	55.60	-89.46	1,871.89	-1,074.46	1,873.14	1,755.25	117.89	15.889		
10,600.00	9,176.88	10,499.40	9,156.99	65.37	56.86	-89.39	1,971.85	-1,075.57	1,872.57	1,752.08	120.49	15.542		
10,700.00	9,178.22	10,599.37	9,156.06	66.73	58.17	-89.32	2,071.82	-1,076.68	1,872.01	1,748.83	123.18	15.198		
10,800.00	9,179.56	10,699.34	9,155.14	68.14	59.52	-89.25	2,171.78	-1,077.79	1,871.44	1,745.48	125.96	14.857		
10,900.00	9,180.91	10,799.31	9,154.21	69.58	60.92	-89.18	2,271.74	-1,078.90	1,870.89	1,742.06	128.83	14.522		
11,000.00	9,182.25	10,899.29	9,153.29	71.06	62.37	-89.11	2,371.70	-1,080.01	1,870.33	1,738.56	131.77	14.193		
11,100.00	9,183.59	10,999.26	9,152.36	72.58	63.86	-89.04	2,471.66	-1,081.13	1,869.78	1,734.98	134.79	13.871		
11,200.00	9,184.93	11,099.23	9,151.44	74.13	65.38	-88.97	2,571.63	-1,082.24	1,869.23	1,731.34	137.88	13.557		
11,300.00	9,186.27	11,199.20	9,150.51	75.70	66.94	-88.90	2,671.59	-1,083.35	1,868.68	1,727.64	141.04	13.249		
11,400.00	9,187.61	11,299.18	9,149.59	77.31	68.53	-88.83	2,771.55	-1,084.46	1,868.14	1,723.89	144.25	12.951		
11,500.00	9,188.95	11,399.15	9,148.66	78.94	70.16	-88.76	2,871.51	-1,085.57	1,867.60	1,720.07	147.52	12.660		
11,600.00	9,190.29	11,500.69	9,147.57	80.60	71.83	-88.68	2,973.04	-1,086.68	1,867.05	1,716.18	150.87	12.375		
11,700.00	9,191.63	11,600.87	9,145.44	82.28	73.51	-88.58	3,073.20	-1,087.67	1,866.41	1,712.18	154.24	12.101		
11,800.00	9,192.97	11,700.81	9,143.31	83.99	75.22	-88.47	3,173.11	-1,088.66	1,865.79	1,708.14	157.65	11.835		
11,900.00	9,194.31	11,800.75	9,141.19	85.71	76.95	-88.36	3,273.02	-1,089.65	1,865.17	1,704.07	161.10	11.577		
12,000.00	9,195.65	11,900.69	9,139.06	87.46	78.70	-88.26	3,372.93	-1,090.63	1,864.56	1,699.96	164.60	11.328		
12,100.00	9,196.99	12,000.62	9,136.93	89.22	80.47	-88.15	3,472.84	-1,091.62	1,863.96	1,695.83	168.13	11.086		
12,200.00	9,198.33	12,100.56	9,134.81	91.00	82.25	-88.04	3,572.75	-1,092.60	1,863.36	1,691.66	171.69	10.853		
12,300.00	9,199.68	12,200.50	9,132.68	92.79	84.06	-87.93	3,672.66	-1,093.59	1,862.76	1,687.47	175.29	10.627		
12,400.00	9,201.02	12,300.43	9,130.56	94.61	85.88	-87.83	3,772.57	-1,094.58	1,862.18	1,683.26	178.92	10.408		
12,500.00	9,202.36	12,400.37	9,128.43	96.43	87.72	-87.72	3,872.48	-1,095.56	1,861.60	1,679.02	182.58	10.196		
12,600.00	9,203.70	12,500.31	9,126.30	98.27	89.57	-87.61	3,972.38	-1,096.55	1,861.03	1,674.77	186.26	9.992		
12,700.00	9,205.04	12,600.25	9,124.18	100.12	91.43	-87.50	4,072.29	-1,097.54	1,860.46	1,670.50	189.97	9.794		
12,800.00	9,206.38	12,700.18	9,122.05	101.99	93.31	-87.40	4,172.20	-1,098.52	1,859.90	1,666.20	193.70	9.602		
12,900.00	9,207.72	12,800.12	9,119.92	103.87	95.20	-87.29	4,272.11	-1,099.51	1,859.35	1,661.90	197.45	9.417		
13,000.00	9,209.06	12,900.06	9,117.80	105.75	97.10	-87.18	4,372.02	-1,100.49	1,858.81	1,657.58	201.23	9.237		
13,100.00	9,210.40	13,000.00	9,115.67	107.65	99.01	-87.07	4,471.93	-1,101.48	1,858.27	1,653.25	205.02	9.064		
13,200.00	9,211.74	13,099.93	9,113.54	109.56	100.94	-86.97	4,571.84	-1,102.47	1,857.73	1,648.90	208.83	8.896		
13,300.00	9,213.08	13,199.87	9,111.42	111.48	102.87	-86.86	4,671.75	-1,103.45	1,857.21	1,644.55	212.66	8.733		
13,400.00	9,214.42	13,299.81	9,109.29	113.40	104.81	-86.75	4,771.66	-1,104.44	1,856.69	1,640.18	216.51	8.576		
13,500.00	9,215.76	13,399.74	9,107.17	115.34	106.76	-86.64	4,871.57	-1,105.43	1,856.17	1,635.81	220.37	8.423		
13,600.00	9,217.10	13,499.68	9,105.04	117.28	108.71	-86.53	4,971.48	-1,106.41	1,855.67	1,631.43	224.24	8.275		
13,700.00	9,218.45	13,599.62	9,102.91	119.23	110.68	-86.43	5,071.39	-1,107.40	1,855.17	1,627.04	228.13	8.132		
13,800.00	9,219.79	13,699.57	9,100.80	121.19	112.65	-86.32	5,171.72	-1,108.39	1,854.67	1,622.63	232.04	7.993		
13,900.00	9,221.13	13,804.14	9,100.85	123.15	114.71	-86.27	5,275.87	-1,109.42	1,854.05	1,617.99	236.06	7.854		
14,000.00	9,222.47	13,905.03	9,103.45	125.12	116.72	-86.31	5,376.73	-1,110.43	1,853.27	1,613.22	240.05	7.720		
14,100.00	9,223.81	14,005.02	9,106.11	127.10	118.71	-86.35	5,476.68	-1,111.43	1,852.49	1,608.45	244.04	7.591		
14,200.00	9,225.15	14,105.01	9,108.77	129.08	120.70	-86.39	5,576.63	-1,112.43	1,851.70	1,603.66	248.04	7.465		
14,300.00	9,226.49	14,205.00	9,111.43	131.07	122.71	-86.43	5,676.58	-1,113.43	1,850.92	1,598.87	252.05	7.343		
14,400.00	9,227.83	14,304.99	9,114.09	133.06	124.71	-86.47	5,776.52	-1,114.43	1,850.14	1,594.07	256.08	7.225		
14,500.00	9,229.17	14,404.98	9,116.75	135.06	126.72	-86.51	5,876.47	-1,115.43	1,849.36	1,589.25	260.11	7.110		
14,600.00	9,230.68	14,524.07	9,119.82	137.06	129.13	-86.55	5,995.52	-1,116.44	1,848.70	1,584.00	264.71	6.984		
14,641.88	9,231.74	14,571.71	9,120.76	137.90	130.08	-86.55	6,043.15	-1,116.27	1,848.41	1,581.80	266.61	6.933		
14,700.00	9,233.89	14,629.83	9,121.89	139.07	131.26	-86.54	6,101.26	-1,116.04	1,848.82	1,579.75	269.07	6.871		
14,800.00	9,237.56	14,729.81	9,123.84	141.08	133.28	-86.49	6,201.22	-1,115.65	1,849.47	1,576.39	273.08	6.773		
14,900.00	9,241.22	14,829.79	9,125.79	143.09	135.30	-86.43	6,301.18	-1,115.26	1,850.12	1,573.02	277.10	6.677		
15,000.00	9,244.89	14,929.78	9,127.74	145.11	137.33	-86.38	6,401.15	-1,114.87	1,850.77	1,569.64	281.13	6.583		
15,100.00	9,248.55	15,029.76	9,129.69	147.13	139.36	-86.33	6,501.11	-1,114.48	1,851.43	1,566.26	285.17	6.492		
15,200.00	9,252.22	15,129.75	9,131.63	149.16	141.40	-86.28	6,601.08	-1,114.09	1,852.08	1,562.88	289.21	6.404		
15,300.00	9,255.88	15,229.73	9,133.58	151.18	143.44	-86.23	6,701.04	-1,113.70	1,852.74	1,559.49	293.26	6.318		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 22HA - OH / Job #61217 - Plan 4 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 174-MWD, 532-MWD+HDGM, 5040-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
15,400.00	9,259.55	15,329.71	9,135.53	153.22	145.48	-86.17	6,801.00	-1,113.31	1,853.40	1,556.09	297.31	6.234	
15,500.00	9,263.21	15,429.70	9,137.48	155.25	147.53	-86.12	6,900.97	-1,112.92	1,854.06	1,552.69	301.37	6.152	
15,600.00	9,266.88	15,529.68	9,139.43	157.29	149.58	-86.07	7,000.93	-1,112.53	1,854.72	1,549.29	305.43	6.072	
15,700.00	9,270.54	15,629.66	9,141.38	159.33	151.63	-86.02	7,100.90	-1,112.13	1,855.39	1,545.89	309.50	5.995	
15,800.00	9,274.21	15,729.65	9,143.33	161.37	153.68	-85.97	7,200.86	-1,111.74	1,856.05	1,542.48	313.58	5.919	
15,900.00	9,277.87	15,829.63	9,145.28	163.42	155.74	-85.92	7,300.82	-1,111.35	1,856.72	1,539.06	317.65	5.845	
16,000.00	9,281.54	15,929.05	9,147.19	165.47	157.79	-85.86	7,400.22	-1,110.97	1,857.39	1,535.66	321.73	5.773	
16,100.00	9,285.20	16,023.99	9,147.11	167.52	159.74	-85.76	7,495.16	-1,110.61	1,858.22	1,532.54	325.68	5.706	
16,200.00	9,288.87	16,123.78	9,145.33	169.57	161.80	-85.59	7,594.93	-1,110.25	1,859.21	1,529.49	329.72	5.639	
16,300.00	9,292.53	16,223.63	9,143.54	171.63	163.87	-85.42	7,694.77	-1,109.89	1,860.21	1,526.45	333.76	5.573	
16,400.00	9,295.57	16,323.51	9,141.76	173.68	165.94	-85.27	7,794.63	-1,109.53	1,861.17	1,523.39	337.78	5.510	
16,500.00	9,295.67	16,423.49	9,139.97	175.74	168.01	-85.20	7,894.59	-1,109.16	1,861.83	1,519.98	341.85	5.446	
16,600.00	9,295.12	16,523.48	9,138.19	177.80	170.09	-85.16	7,994.57	-1,108.80	1,862.43	1,516.47	345.96	5.383	
16,700.00	9,294.57	16,623.47	9,136.40	179.87	172.16	-85.13	8,094.54	-1,108.44	1,863.03	1,512.96	350.07	5.322	
16,800.00	9,294.03	16,723.46	9,134.62	181.93	174.24	-85.09	8,194.52	-1,108.08	1,863.63	1,509.44	354.19	5.262	
16,900.00	9,293.48	16,823.46	9,132.83	184.00	176.32	-85.05	8,294.49	-1,107.72	1,864.23	1,505.92	358.31	5.203	
17,000.00	9,292.93	16,923.45	9,131.05	186.07	178.40	-85.02	8,394.47	-1,107.35	1,864.84	1,502.40	362.44	5.145	
17,100.00	9,292.39	17,023.44	9,129.26	188.14	180.49	-84.98	8,494.44	-1,106.99	1,865.44	1,498.87	366.57	5.089	
17,200.00	9,291.84	17,123.43	9,127.48	190.22	182.57	-84.94	8,594.41	-1,106.63	1,866.04	1,495.34	370.70	5.034	
17,300.00	9,291.30	17,223.42	9,125.69	192.29	184.66	-84.91	8,694.39	-1,106.27	1,866.65	1,491.81	374.83	4.980	
17,400.00	9,290.75	17,323.41	9,123.91	194.37	186.75	-84.87	8,794.36	-1,105.91	1,867.25	1,488.28	378.97	4.927	
17,500.00	9,290.20	17,423.40	9,122.12	196.45	188.84	-84.84	8,894.34	-1,105.54	1,867.86	1,484.75	383.11	4.876	
17,600.00	9,289.66	17,523.39	9,121.60	198.53	191.00	-84.84	8,994.32	-1,105.16	1,868.46	1,480.99	387.35	4.823	
17,700.00	9,289.11	17,623.38	9,121.72	200.61	193.09	-84.86	9,094.30	-1,104.78	1,869.06	1,477.23	391.52	4.773	
17,800.00	9,288.56	17,723.37	9,121.84	202.69	195.18	-84.88	9,194.28	-1,104.40	1,869.66	1,473.47	395.70	4.724	
17,900.00	9,288.02	17,823.36	9,121.96	204.78	197.28	-84.90	9,294.26	-1,104.02	1,870.26	1,469.71	399.89	4.675	
18,000.00	9,287.47	17,923.35	9,122.08	206.86	199.37	-84.92	9,394.24	-1,103.64	1,870.86	1,465.94	404.07	4.628	
18,100.00	9,286.92	18,023.34	9,122.20	208.95	201.47	-84.95	9,494.22	-1,103.26	1,871.46	1,462.17	408.26	4.581	
18,200.00	9,286.38	18,123.33	9,122.32	211.04	203.57	-84.97	9,594.20	-1,102.88	1,872.06	1,458.40	412.45	4.536	
18,300.00	9,285.83	18,223.32	9,122.44	213.13	205.66	-84.99	9,694.18	-1,102.50	1,872.66	1,454.63	416.64	4.491	
18,400.00	9,285.28	18,323.31	9,122.56	215.22	207.76	-85.01	9,794.16	-1,102.12	1,873.26	1,450.85	420.84	4.448	
18,500.00	9,284.74	18,423.30	9,122.68	217.31	209.86	-85.03	9,894.14	-1,101.74	1,873.86	1,447.07	425.04	4.405	
18,600.00	9,284.19	18,523.29	9,122.80	219.41	211.97	-85.05	9,994.12	-1,101.36	1,874.46	1,443.29	429.24	4.362	
18,700.00	9,283.64	18,623.28	9,122.93	221.50	214.07	-85.08	10,094.10	-1,100.98	1,875.06	1,439.51	433.44	4.321	
18,800.00	9,283.10	18,723.27	9,123.05	223.60	216.17	-85.10	10,194.08	-1,100.60	1,875.66	1,435.73	437.64	4.281	
18,900.00	9,282.55	18,823.26	9,123.17	225.69	218.28	-85.12	10,294.06	-1,100.22	1,876.26	1,431.94	441.85	4.241	
19,000.00	9,282.00	18,923.25	9,123.29	227.79	220.38	-85.14	10,394.04	-1,099.84	1,876.86	1,428.15	446.06	4.202	
19,100.00	9,281.46	19,023.24	9,123.41	229.89	222.49	-85.16	10,494.02	-1,099.46	1,877.46	1,424.37	450.27	4.163	
19,200.00	9,280.91	19,123.23	9,123.53	231.99	224.60	-85.18	10,594.00	-1,099.08	1,878.06	1,420.57	454.48	4.126	
19,300.00	9,280.36	19,223.22	9,123.65	234.09	226.70	-85.21	10,694.00	-1,098.70	1,878.66	1,416.78	458.70	4.089	
19,400.00	9,279.82	19,323.21	9,123.77	236.19	228.81	-85.23	10,794.00	-1,098.32	1,879.26	1,412.99	462.91	4.052	
19,500.00	9,279.27	19,423.20	9,123.89	238.29	230.92	-85.25	10,894.00	-1,097.94	1,879.86	1,409.19	467.13	4.017	
19,549.38	9,279.00	19,476.26	9,123.95	239.33	231.97	-85.26	10,947.17	-1,097.75	1,880.46	1,407.32	469.22	3.999 SF	

CC - Min centre to center distance or covergent 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference 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		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)	
0.00	0.00	0.00	22.00	0.00	0.00	-73.46	402.10	-1,353.60	1,412.24					
100.00	100.00	81.21	103.21	0.19	0.12	-73.45	402.16	-1,353.49	1,411.98	1,411.67	0.31	4,565.415		
200.00	200.00	188.37	210.37	0.73	0.30	-73.43	402.44	-1,352.97	1,411.59	1,410.56	1.03	1,374.947		
300.00	300.00	308.53	330.51	1.27	0.69	-73.40	402.75	-1,350.79	1,409.89	1,407.93	1.96	719.111		
400.00	400.00	412.72	434.66	1.81	1.02	-73.41	401.81	-1,348.56	1,407.57	1,404.74	2.83	497.454		
500.00	500.00	524.71	546.61	2.34	1.26	-73.44	400.06	-1,345.76	1,404.74	1,401.14	3.60	389.765		
600.00	600.00	763.79	784.92	2.88	2.01	-73.47	394.53	-1,329.19	1,398.78	1,393.89	4.89	285.993		
700.00	699.98	872.00	892.05	3.41	2.54	-138.23	390.44	-1,314.43	1,385.86	1,379.96	5.91	234.620		
800.00	799.84	950.97	970.30	3.94	2.96	-138.47	387.31	-1,304.31	1,376.39	1,369.59	6.81	202.169		
900.00	899.45	1,035.84	1,054.58	4.48	3.42	-138.76	384.35	-1,294.80	1,371.15	1,363.38	7.76	176.608		
998.68	997.40	1,122.63	1,140.85	5.02	3.90	-139.04	382.50	-1,285.49	1,369.43	1,360.68	8.74	156.611 CC		
1,000.00	998.70	1,123.79	1,142.00	5.03	3.91	-139.04	382.49	-1,285.37	1,369.43	1,360.67	8.76	156.380 ES		
1,100.00	1,097.47	1,231.81	1,249.39	5.60	4.50	-139.38	381.96	-1,273.71	1,370.78	1,360.92	9.86	139.013		
1,200.00	1,195.78	1,321.14	1,338.16	6.19	5.00	-139.71	381.80	-1,263.65	1,373.83	1,362.94	10.89	126.209		
1,300.00	1,294.07	1,414.61	1,431.09	6.79	5.52	-140.04	382.61	-1,253.73	1,377.93	1,365.98	11.94	115.383		
1,400.00	1,392.36	1,510.44	1,526.38	7.40	6.06	-140.35	384.14	-1,243.60	1,382.31	1,369.29	13.02	106.168		
1,500.00	1,490.65	1,597.24	1,612.74	8.02	6.54	-140.64	385.12	-1,235.00	1,387.27	1,373.21	14.06	98.696		
1,600.00	1,588.93	1,705.78	1,720.81	8.64	7.15	-141.04	385.94	-1,224.94	1,392.83	1,377.62	15.21	91.562		
1,700.00	1,687.22	1,819.00	1,833.34	9.27	7.80	-141.41	387.08	-1,212.56	1,396.80	1,380.40	16.40	85.170		
1,800.00	1,785.51	1,913.00	1,926.78	9.90	8.33	-141.73	387.86	-1,202.36	1,400.92	1,383.43	17.49	80.099		
1,900.00	1,883.80	1,977.71	1,991.23	10.54	8.69	-141.97	388.12	-1,196.66	1,406.85	1,388.43	18.42	76.371		
2,000.00	1,982.09	2,062.10	2,075.41	11.17	9.16	-142.30	388.35	-1,190.65	1,414.56	1,395.10	19.46	72.702		
2,100.00	2,080.37	2,159.33	2,172.43	11.81	9.69	-142.68	388.59	-1,184.16	1,422.78	1,402.22	20.56	69.205		
2,200.00	2,178.66	2,260.60	2,273.47	12.45	10.24	-143.06	388.99	-1,177.33	1,431.04	1,409.35	21.68	65.996		
2,300.00	2,276.95	2,362.76	2,375.37	13.10	10.80	-143.43	389.64	-1,170.19	1,439.16	1,416.34	22.81	63.082		
2,400.00	2,375.24	2,465.00	2,477.34	13.74	11.36	-143.79	390.54	-1,162.79	1,447.13	1,423.19	23.95	60.435		
2,500.00	2,473.52	2,565.64	2,577.69	14.38	11.92	-144.12	391.66	-1,155.29	1,455.00	1,429.94	25.07	58.039		
2,600.00	2,571.81	2,690.74	2,702.35	15.03	12.62	-144.52	393.20	-1,144.90	1,462.12	1,435.79	26.33	55.537		
2,700.00	2,670.10	2,809.19	2,820.19	15.68	13.30	-144.90	394.32	-1,132.92	1,467.39	1,439.84	27.55	53.256		
2,800.00	2,768.39	2,907.34	2,917.79	16.32	13.86	-145.21	395.07	-1,122.61	1,472.32	1,443.65	28.67	51.349		
2,900.00	2,866.67	3,002.65	3,012.59	16.97	14.41	-145.50	395.95	-1,112.79	1,477.54	1,447.76	29.78	49.620		
3,000.00	2,964.96	3,101.89	3,111.32	17.62	14.98	-145.80	397.09	-1,102.76	1,483.02	1,452.11	30.90	47.990		
3,100.00	3,063.25	3,205.09	3,213.95	18.27	15.57	-146.10	398.46	-1,092.12	1,488.36	1,456.31	32.05	46.440		
3,200.00	3,161.54	3,309.18	3,317.44	18.92	16.17	-146.39	400.05	-1,081.08	1,493.47	1,460.27	33.20	44.983		
3,300.00	3,259.83	3,405.89	3,413.58	19.57	16.72	-146.65	401.51	-1,070.70	1,498.49	1,464.18	34.31	43.671		
3,400.00	3,358.11	3,484.97	3,492.27	20.22	17.17	-146.90	402.05	-1,062.84	1,504.27	1,468.94	35.33	42.580		
3,500.00	3,456.40	3,553.78	3,560.86	20.87	17.56	-147.15	401.58	-1,057.32	1,511.81	1,475.53	36.28	41.667		
3,600.00	3,554.69	3,619.00	3,625.97	21.52	17.91	-147.42	400.58	-1,053.72	1,521.69	1,484.48	37.21	40.889		
3,700.00	3,652.98	3,685.28	3,692.20	22.17	18.26	-147.70	399.38	-1,051.53	1,533.80	1,495.65	38.14	40.210		
3,800.00	3,751.26	3,766.18	3,773.07	22.82	18.67	-148.04	398.09	-1,050.22	1,547.67	1,508.52	39.14	39.539		
3,900.00	3,849.55	3,851.22	3,858.11	23.48	19.09	-148.39	397.00	-1,049.43	1,562.37	1,522.22	40.15	38.910		
4,000.00	3,947.84	3,939.40	3,946.29	24.13	19.51	-148.72	396.41	-1,049.43	1,578.08	1,536.91	41.17	38.331		
4,100.00	4,046.13	4,038.87	4,045.75	24.78	19.99	-149.09	395.77	-1,049.55	1,593.99	1,551.75	42.24	37.739		
4,200.00	4,144.42	4,136.92	4,143.80	25.43	20.46	-149.46	395.02	-1,049.62	1,609.91	1,566.61	43.30	37.182		
4,300.00	4,242.70	4,233.32	4,240.20	26.09	20.93	-149.80	394.30	-1,049.77	1,625.97	1,581.62	44.35	36.661		
4,400.00	4,340.99	4,328.95	4,335.82	26.74	21.39	-150.14	393.62	-1,050.03	1,642.21	1,596.81	45.40	36.172		
4,500.00	4,439.28	4,425.00	4,431.87	27.39	21.85	-150.48	392.84	-1,050.47	1,658.68	1,612.23	46.45	35.711		
4,600.00	4,537.57	4,521.48	4,528.35	28.05	22.31	-150.81	391.93	-1,050.99	1,675.29	1,627.79	47.50	35.271		
4,700.00	4,635.85	4,616.49	4,623.35	28.70	22.77	-151.14	391.09	-1,051.64	1,692.10	1,643.56	48.54	34.861		
4,800.00	4,734.14	4,709.92	4,716.77	29.35	23.22	-151.45	390.34	-1,052.49	1,709.18	1,659.61	49.57	34.479		
4,900.00	4,832.43	4,802.43	4,809.27	30.01	23.67	-151.75	389.54	-1,053.61	1,726.61	1,676.02	50.60	34.125		
5,000.00	4,930.72	4,897.08	4,903.91	30.66	24.12	-152.06	388.60	-1,055.04	1,744.39	1,692.75	51.63	33.784		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference 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	
5,100.00	5,029.01	4,993.79	5,000.59	31.31	24.59	-152.38	387.42	-1,056.60	1,762.30	1,709.62	52.68	33.452	
5,200.00	5,127.29	5,089.24	5,096.02	31.97	25.05	-152.69	385.95	-1,058.24	1,780.36	1,726.64	53.72	33.139	
5,300.00	5,225.58	5,183.85	5,190.60	32.62	25.52	-153.01	384.34	-1,060.02	1,798.65	1,743.88	54.76	32.843	
5,400.00	5,323.87	5,276.84	5,283.55	33.27	25.97	-153.31	382.73	-1,061.96	1,817.18	1,761.39	55.80	32.568	
5,500.00	5,422.16	5,371.99	5,378.68	33.93	26.43	-153.59	381.75	-1,064.21	1,836.04	1,779.20	56.84	32.304	
5,600.00	5,520.52	5,465.43	5,472.08	34.58	26.89	-153.92	381.36	-1,066.46	1,854.63	1,796.72	57.91	32.027	
5,700.00	5,619.38	5,555.58	5,562.20	35.19	27.33	-154.27	380.78	-1,069.04	1,870.99	1,812.03	58.96	31.732	
5,800.00	5,718.71	5,684.58	5,691.15	35.77	27.96	-154.60	379.94	-1,072.50	1,884.23	1,824.08	60.15	31.328	
5,900.00	5,818.37	5,858.32	5,864.84	36.31	28.85	-154.80	381.31	-1,070.42	1,889.81	1,828.29	61.52	30.720	
6,000.00	5,918.26	5,951.67	5,958.17	36.82	29.34	-154.84	382.42	-1,068.28	1,891.69	1,829.26	62.42	30.306	
6,100.00	6,018.25	6,042.94	6,049.42	37.28	29.82	-90.26	383.55	-1,066.56	1,890.84	1,827.53	63.32	29.863	
6,200.00	6,118.25	6,136.23	6,142.68	37.74	30.31	-90.22	384.76	-1,065.23	1,889.41	1,825.12	64.29	29.387	
6,300.00	6,218.25	6,235.60	6,242.04	38.19	30.83	-90.20	385.59	-1,064.00	1,888.17	1,822.87	65.31	28.913	
6,400.00	6,318.25	6,331.58	6,338.01	38.65	31.33	-90.18	386.06	-1,062.84	1,886.96	1,820.66	66.30	28.461	
6,500.00	6,418.25	6,425.56	6,432.00	39.11	31.82	-90.17	386.61	-1,062.02	1,886.09	1,818.80	67.29	28.031	
6,600.00	6,518.25	6,523.52	6,529.95	39.57	32.33	-90.15	387.23	-1,061.39	1,885.45	1,817.15	68.29	27.608	
6,700.00	6,618.25	6,620.17	6,626.59	40.04	32.83	-90.13	387.89	-1,060.85	1,884.89	1,815.59	69.29	27.202	
6,800.00	6,718.25	6,715.63	6,722.05	40.51	33.32	-90.11	388.51	-1,060.55	1,884.57	1,814.28	70.28	26.814	
6,854.46	6,772.72	6,766.30	6,772.72	40.76	33.58	-90.10	388.83	-1,060.49	1,884.50	1,813.69	70.82	26.611	
6,900.00	6,818.25	6,807.13	6,813.55	40.97	33.79	-90.09	389.02	-1,060.54	1,884.56	1,813.31	71.25	26.450	
7,000.00	6,918.25	6,905.46	6,911.88	41.44	34.28	-90.09	389.24	-1,060.91	1,884.94	1,812.69	72.25	26.090	
7,100.00	7,018.25	7,006.02	7,012.44	41.91	34.79	-90.08	389.34	-1,061.22	1,885.24	1,811.98	73.25	25.735	
7,200.00	7,118.25	7,112.25	7,118.66	42.39	35.33	-90.07	389.60	-1,061.41	1,885.42	1,811.13	74.30	25.377	
7,291.16	7,209.41	7,202.99	7,209.41	42.82	35.79	-90.06	390.04	-1,061.38	1,885.39	1,810.17	75.22	25.064	
7,300.00	7,218.25	7,211.69	7,218.11	42.86	35.84	-90.06	390.09	-1,061.38	1,885.39	1,810.08	75.31	25.034	
7,400.00	7,318.25	7,312.38	7,318.79	43.34	36.35	-90.04	390.64	-1,061.37	1,885.38	1,809.05	76.34	24.699	
7,500.00	7,418.25	7,418.25	7,424.66	43.81	36.90	-90.03	391.14	-1,061.18	1,885.20	1,807.81	77.39	24.360	
7,600.00	7,518.25	7,523.88	7,530.29	44.29	37.45	-90.03	390.92	-1,060.67	1,884.72	1,806.27	78.45	24.025	
7,700.00	7,618.25	7,634.48	7,640.88	44.77	38.03	-90.07	389.78	-1,059.72	1,883.87	1,804.34	79.54	23.686	
7,800.00	7,718.25	7,749.00	7,755.37	45.25	38.64	-90.13	387.65	-1,057.82	1,882.20	1,801.56	80.65	23.339	
7,900.00	7,818.25	7,849.24	7,855.54	45.74	39.16	-90.22	384.75	-1,055.75	1,880.15	1,798.47	81.68	23.019	
8,000.00	7,918.25	7,947.26	7,953.48	46.22	39.68	-90.33	381.24	-1,053.87	1,878.24	1,795.54	82.70	22.712	
8,100.00	8,018.25	8,044.38	8,050.49	46.70	40.19	-90.46	377.15	-1,052.08	1,876.42	1,792.71	83.72	22.414	
8,200.00	8,118.25	8,139.02	8,145.01	47.19	40.69	-90.60	372.58	-1,050.54	1,874.84	1,790.12	84.72	22.130	
8,280.11	8,198.36	8,169.00	8,174.95	47.58	40.84	-90.64	371.08	-1,050.11	1,874.38	1,789.10	85.28	21.979	
8,300.00	8,218.25	8,199.26	8,205.19	47.68	41.00	-90.68	369.79	-1,050.00	1,874.19	1,788.65	85.54	21.911	
8,400.00	8,318.25	8,264.00	8,269.88	48.17	41.33	-90.72	368.60	-1,051.83	1,876.61	1,790.23	86.38	21.725	
8,500.00	8,418.25	8,425.00	8,430.72	48.66	42.15	-90.89	362.91	-1,053.15	1,877.43	1,789.71	87.72	21.402	
8,600.00	8,518.25	8,513.65	8,519.25	49.15	42.62	-91.03	358.28	-1,052.66	1,876.98	1,788.28	88.69	21.162	
8,604.08	8,522.33	8,516.74	8,522.34	49.17	42.63	-90.06	358.13	-1,052.66	1,876.98	1,788.28	88.70	21.162	
8,700.00	8,618.24	8,587.08	8,592.64	49.64	42.99	-90.11	355.99	-1,053.07	1,877.60	1,788.05	89.55	20.966	
8,800.00	8,717.19	8,662.03	8,667.51	50.16	43.37	-90.15	358.18	-1,054.74	1,879.79	1,789.30	90.48	20.775	
8,900.00	8,812.27	8,739.00	8,743.66	50.70	43.75	-90.20	368.76	-1,056.95	1,882.68	1,791.23	91.45	20.587	
9,000.00	8,900.60	8,739.00	8,743.66	51.24	43.75	-89.53	368.76	-1,056.95	1,889.43	1,797.39	92.05	20.527 SF	
9,100.00	8,979.50	8,739.00	8,743.66	51.77	43.75	-88.34	368.76	-1,056.95	1,901.27	1,808.66	92.61	20.529	
9,200.00	9,046.57	8,739.00	8,743.66	52.30	43.75	-86.67	368.76	-1,056.95	1,917.75	1,824.66	93.09	20.601	
9,300.00	9,099.76	8,739.00	8,743.66	52.84	43.75	-84.58	368.76	-1,056.95	1,938.25	1,844.86	93.38	20.756	
9,400.00	9,137.47	8,739.00	8,743.66	53.42	43.75	-82.14	368.76	-1,056.95	1,962.04	1,868.65	93.39	21.009	
9,500.00	9,158.55	8,739.00	8,743.66	54.06	43.75	-79.46	368.76	-1,056.95	1,988.29	1,895.24	93.04	21.370	
9,600.00	9,163.48	8,739.00	8,743.66	54.74	43.75	-77.65	368.76	-1,056.95	2,016.36	1,923.46	92.90	21.705	
9,700.00	9,164.82	8,739.00	8,743.66	55.50	43.75	-77.65	368.76	-1,056.95	2,048.24	1,954.57	93.67	21.866	
9,800.00	9,166.16	8,739.00	8,743.66	56.34	43.75	-77.65	368.76	-1,056.95	2,084.44	1,989.92	94.52	22.052	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference 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	
9,900.00	9,167.50	8,739.00	8,743.66	57.25	43.75	-77.65	368.76	-1,056.95	2,124.73	2,029.29	95.44	22.262	
10,000.00	9,168.84	8,739.00	8,743.66	58.24	43.75	-77.65	368.76	-1,056.95	2,168.89	2,072.46	96.43	22.492	
10,100.00	9,170.18	8,739.00	8,743.66	59.28	43.75	-77.65	368.76	-1,056.95	2,216.68	2,119.20	97.48	22.739	
10,200.00	9,171.52	8,739.00	8,743.66	60.39	43.75	-77.65	368.76	-1,056.95	2,267.88	2,169.29	98.60	23.002	
10,300.00	9,172.86	8,739.00	8,743.66	61.56	43.75	-77.65	368.76	-1,056.95	2,322.26	2,222.49	99.77	23.277	
10,400.00	9,174.20	8,739.00	8,743.66	62.78	43.75	-77.65	368.76	-1,056.95	2,379.60	2,278.61	100.99	23.563	
10,500.00	9,175.54	8,739.00	8,743.66	64.05	43.75	-77.65	368.76	-1,056.95	2,439.69	2,337.42	102.27	23.856	
10,600.00	9,176.88	8,739.00	8,743.66	65.37	43.75	-77.65	368.76	-1,056.95	2,502.34	2,398.75	103.59	24.157	
10,700.00	9,178.22	8,739.00	8,743.66	66.73	43.75	-77.65	368.76	-1,056.95	2,567.35	2,462.40	104.95	24.462	
10,800.00	9,179.56	8,739.00	8,743.66	68.14	43.75	-77.65	368.76	-1,056.95	2,634.56	2,528.19	106.36	24.770	
10,900.00	9,180.91	8,739.00	8,743.66	69.58	43.75	-77.65	368.76	-1,056.95	2,703.79	2,595.98	107.81	25.080	
11,000.00	9,182.25	8,739.00	8,743.66	71.06	43.75	-77.65	368.76	-1,056.95	2,774.90	2,665.61	109.29	25.390	
11,100.00	9,183.59	8,739.00	8,743.66	72.58	43.75	-77.65	368.76	-1,056.95	2,847.75	2,736.94	110.81	25.700	
11,200.00	9,184.93	8,739.00	8,743.66	74.13	43.75	-77.65	368.76	-1,056.95	2,922.20	2,809.85	112.35	26.009	
11,300.00	9,186.27	8,739.00	8,743.66	75.70	43.75	-77.65	368.76	-1,056.95	2,998.15	2,884.21	113.93	26.315	
11,400.00	9,187.61	8,739.00	8,743.66	77.31	43.75	-77.65	368.76	-1,056.95	3,075.46	2,959.93	115.54	26.619	
11,500.00	9,188.95	8,739.00	8,743.66	78.94	43.75	-77.65	368.76	-1,056.95	3,154.06	3,036.89	117.17	26.919	
11,600.00	9,190.29	8,739.00	8,743.66	80.60	43.75	-77.65	368.76	-1,056.95	3,233.83	3,115.01	118.83	27.215	
11,700.00	9,191.63	8,739.00	8,743.66	82.28	43.75	-77.65	368.76	-1,056.95	3,314.71	3,194.20	120.51	27.507	
11,800.00	9,192.97	8,739.00	8,743.66	83.99	43.75	-77.65	368.76	-1,056.95	3,396.60	3,274.39	122.21	27.794	
11,900.00	9,194.31	8,739.00	8,743.66	85.71	43.75	-77.65	368.76	-1,056.95	3,479.44	3,355.51	123.93	28.077	
12,000.00	9,195.65	8,739.00	8,743.66	87.46	43.75	-77.65	368.76	-1,056.95	3,563.15	3,437.49	125.67	28.354	
12,100.00	9,196.99	8,739.00	8,743.66	89.22	43.75	-77.65	368.76	-1,056.95	3,647.69	3,520.27	127.42	28.627	
12,200.00	9,198.33	8,739.00	8,743.66	91.00	43.75	-77.65	368.76	-1,056.95	3,733.00	3,603.80	129.20	28.894	
12,300.00	9,199.68	8,739.00	8,743.66	92.79	43.75	-77.65	368.76	-1,056.95	3,819.01	3,688.03	130.98	29.156	
12,400.00	9,201.02	8,739.00	8,743.66	94.61	43.75	-77.65	368.76	-1,056.95	3,905.70	3,772.91	132.79	29.413	
12,500.00	9,202.36	8,739.00	8,743.66	96.43	43.75	-77.65	368.76	-1,056.95	3,993.00	3,858.40	134.61	29.665	
12,600.00	9,203.70	8,739.00	8,743.66	98.27	43.75	-77.65	368.76	-1,056.95	4,080.89	3,944.46	136.44	29.911	
12,700.00	9,205.04	8,739.00	8,743.66	100.12	43.75	-77.65	368.76	-1,056.95	4,169.32	4,031.05	138.28	30.152	
12,800.00	9,206.38	8,739.00	8,743.66	101.99	43.75	-77.65	368.76	-1,056.95	4,258.27	4,118.14	140.13	30.388	
12,900.00	9,207.72	8,739.00	8,743.66	103.87	43.75	-77.65	368.76	-1,056.95	4,347.70	4,205.70	142.00	30.618	
13,000.00	9,209.06	8,739.00	8,743.66	105.75	43.75	-77.65	368.76	-1,056.95	4,437.57	4,293.70	143.87	30.844	
13,100.00	9,210.40	8,739.00	8,743.66	107.65	43.75	-77.65	368.76	-1,056.95	4,527.88	4,382.12	145.76	31.064	
13,200.00	9,211.74	8,739.00	8,743.66	109.56	43.75	-77.65	368.76	-1,056.95	4,618.58	4,470.93	147.65	31.280	
13,300.00	9,213.08	8,739.00	8,743.66	111.48	43.75	-77.65	368.76	-1,056.95	4,709.66	4,560.10	149.56	31.491	
13,400.00	9,214.42	8,739.00	8,743.66	113.40	43.75	-77.65	368.76	-1,056.95	4,801.09	4,649.62	151.47	31.697	
13,500.00	9,215.76	8,739.00	8,743.66	115.34	43.75	-77.65	368.76	-1,056.95	4,892.86	4,739.47	153.39	31.899	
13,600.00	9,217.10	8,739.00	8,743.66	117.28	43.75	-77.65	368.76	-1,056.95	4,984.94	4,829.63	155.31	32.096	
13,700.00	9,218.45	8,739.00	8,743.66	119.23	43.75	-77.65	368.76	-1,056.95	5,077.33	4,920.08	157.25	32.289	
13,800.00	9,219.79	8,739.00	8,743.66	121.19	43.75	-77.65	368.76	-1,056.95	5,170.00	5,010.81	159.19	32.477	
13,900.00	9,221.13	8,739.00	8,743.66	123.15	43.75	-77.65	368.76	-1,056.95	5,262.93	5,101.80	161.13	32.662	
14,000.00	9,222.47	8,739.00	8,743.66	125.12	43.75	-77.65	368.76	-1,056.95	5,356.12	5,193.04	163.09	32.842	
14,100.00	9,223.81	8,739.00	8,743.66	127.10	43.75	-77.65	368.76	-1,056.95	5,449.56	5,284.51	165.05	33.018	
14,200.00	9,225.15	8,739.00	8,743.66	129.08	43.75	-77.65	368.76	-1,056.95	5,543.22	5,376.21	167.01	33.191	
14,300.00	9,226.49	8,739.00	8,743.66	131.07	43.75	-77.65	368.76	-1,056.95	5,637.10	5,468.12	168.98	33.359	
14,400.00	9,227.83	8,739.00	8,743.66	133.06	43.75	-77.65	368.76	-1,056.95	5,731.18	5,560.23	170.96	33.524	
14,500.00	9,229.17	8,739.00	8,743.66	135.06	43.75	-77.65	368.76	-1,056.95	5,825.47	5,652.53	172.93	33.686	
14,600.00	9,230.51	8,739.00	8,743.66	137.06	43.75	-78.78	368.76	-1,056.95	5,920.01	5,744.24	175.76	33.842	
14,700.00	9,231.85	8,739.00	8,743.66	139.07	43.75	-80.83	368.76	-1,056.95	6,015.41	5,836.30	179.11	33.986	
14,800.00	9,233.19	8,739.00	8,743.66	141.08	43.75	-80.83	368.76	-1,056.95	6,111.13	5,930.02	181.10	34.124	
14,900.00	9,234.53	8,739.00	8,743.66	143.09	43.75	-80.83	368.76	-1,056.95	6,206.98	6,023.88	183.11	34.256	
15,000.00	9,235.87	8,739.00	8,743.66	145.11	43.75	-80.83	368.76	-1,056.95	6,302.97	6,117.85	185.11	34.384	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference 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	
15,100.00	9,248.55	8,739.00	8,743.66	147.13	43.75	-80.83	368.76	-1,056.95	6,399.07	6,211.95	187.12	34.197	
15,200.00	9,252.22	8,739.00	8,743.66	149.16	43.75	-80.83	368.76	-1,056.95	6,495.29	6,306.16	189.14	34.342	
15,300.00	9,255.88	8,739.00	8,743.66	151.18	43.75	-80.83	368.76	-1,056.95	6,591.63	6,400.48	191.15	34.484	
15,400.00	9,259.55	8,739.00	8,743.66	153.22	43.75	-80.83	368.76	-1,056.95	6,688.07	6,494.90	193.17	34.623	
15,500.00	9,263.21	8,739.00	8,743.66	155.25	43.75	-80.83	368.76	-1,056.95	6,784.62	6,589.43	195.19	34.759	
15,600.00	9,266.88	8,739.00	8,743.66	157.29	43.75	-80.83	368.76	-1,056.95	6,881.27	6,684.05	197.22	34.892	
15,700.00	9,270.54	8,739.00	8,743.66	159.33	43.75	-80.83	368.76	-1,056.95	6,978.01	6,778.76	199.25	35.022	
15,800.00	9,274.21	8,739.00	8,743.66	161.37	43.75	-80.83	368.76	-1,056.95	7,074.84	6,873.56	201.28	35.150	
15,900.00	9,277.87	8,739.00	8,743.66	163.42	43.75	-80.83	368.76	-1,056.95	7,171.75	6,968.44	203.31	35.275	
16,000.00	9,281.54	8,739.00	8,743.66	165.47	43.75	-80.83	368.76	-1,056.95	7,268.75	7,063.41	205.35	35.398	
16,100.00	9,285.20	8,739.00	8,743.66	167.52	43.75	-80.83	368.76	-1,056.95	7,365.83	7,158.45	207.38	35.518	
16,200.00	9,288.87	8,739.00	8,743.66	169.57	43.75	-80.83	368.76	-1,056.95	7,462.99	7,253.57	209.42	35.636	
16,300.00	9,292.53	8,739.00	8,743.66	171.63	43.75	-80.83	368.76	-1,056.95	7,560.22	7,348.76	211.47	35.752	
16,400.00	9,295.57	8,739.00	8,743.66	173.68	43.75	-75.94	368.76	-1,056.95	7,657.50	7,447.47	210.02	36.460	
16,500.00	9,295.67	8,739.00	8,743.66	175.74	43.75	-71.16	368.76	-1,056.95	7,754.66	7,547.18	207.49	37.374	
16,600.00	9,295.12	8,739.00	8,743.66	177.80	43.75	-71.16	368.76	-1,056.95	7,851.85	7,642.38	209.48	37.483	
16,700.00	9,294.57	8,739.00	8,743.66	179.87	43.75	-71.16	368.76	-1,056.95	7,949.11	7,737.64	211.47	37.589	
16,800.00	9,294.03	8,739.00	8,743.66	181.93	43.75	-71.16	368.76	-1,056.95	8,046.44	7,832.97	213.47	37.694	
16,900.00	9,293.48	8,739.00	8,743.66	184.00	43.75	-71.16	368.76	-1,056.95	8,143.83	7,928.37	215.46	37.797	
17,000.00	9,292.93	8,739.00	8,743.66	186.07	43.75	-71.16	368.76	-1,056.95	8,241.29	8,023.82	217.46	37.897	
17,100.00	9,292.39	8,739.00	8,743.66	188.14	43.75	-71.16	368.76	-1,056.95	8,338.80	8,119.34	219.46	37.996	
17,200.00	9,291.84	8,739.00	8,743.66	190.22	43.75	-71.16	368.76	-1,056.95	8,436.37	8,214.91	221.47	38.093	
17,300.00	9,291.30	8,739.00	8,743.66	192.29	43.75	-71.16	368.76	-1,056.95	8,534.00	8,310.53	223.47	38.189	
17,400.00	9,290.75	8,739.00	8,743.66	194.37	43.75	-71.16	368.76	-1,056.95	8,631.69	8,406.21	225.47	38.282	
17,500.00	9,290.20	8,739.00	8,743.66	196.45	43.75	-71.16	368.76	-1,056.95	8,729.42	8,501.94	227.48	38.374	
17,600.00	9,289.66	8,739.00	8,743.66	198.53	43.75	-71.16	368.76	-1,056.95	8,827.21	8,597.72	229.49	38.465	
17,700.00	9,289.11	8,739.00	8,743.66	200.61	43.75	-71.16	368.76	-1,056.95	8,925.04	8,693.55	231.50	38.554	
17,800.00	9,288.56	8,739.00	8,743.66	202.69	43.75	-71.16	368.76	-1,056.95	9,022.93	8,789.42	233.51	38.641	
17,900.00	9,288.02	8,739.00	8,743.66	204.78	43.75	-71.16	368.76	-1,056.95	9,120.85	8,885.34	235.52	38.727	
18,000.00	9,287.47	8,739.00	8,743.66	206.86	43.75	-71.16	368.76	-1,056.95	9,218.83	8,981.30	237.53	38.811	
18,100.00	9,286.92	8,739.00	8,743.66	208.95	43.75	-71.16	368.76	-1,056.95	9,316.84	9,077.30	239.55	38.894	
18,200.00	9,286.38	8,739.00	8,743.66	211.04	43.75	-71.16	368.76	-1,056.95	9,414.90	9,173.34	241.56	38.975	
18,300.00	9,285.83	8,739.00	8,743.66	213.13	43.75	-71.16	368.76	-1,056.95	9,513.00	9,269.42	243.58	39.055	
18,400.00	9,285.28	8,739.00	8,743.66	215.22	43.75	-71.16	368.76	-1,056.95	9,611.14	9,365.54	245.60	39.134	
18,500.00	9,284.74	8,739.00	8,743.66	217.31	43.75	-71.16	368.76	-1,056.95	9,709.31	9,461.70	247.62	39.211	
18,600.00	9,284.19	8,739.00	8,743.66	219.41	43.75	-71.16	368.76	-1,056.95	9,807.53	9,557.89	249.64	39.287	
18,700.00	9,283.64	8,739.00	8,743.66	221.50	43.75	-71.16	368.76	-1,056.95	9,905.77	9,654.12	251.66	39.362	



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17													Offset Site Error: 0.00 usft
Survey Program: 0-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)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	22.00	0.00	0.00	-75.42	352.10	-1,353.60	1,398.82				
100.00	100.00	78.00	100.00	0.19	0.15	-75.42	352.10	-1,353.60	1,398.65	1,398.30	0.34	4,059.190	
200.00	200.00	178.00	200.00	0.73	0.61	-75.42	352.10	-1,353.60	1,398.65	1,397.30	1.34	1,040.453	
300.00	300.00	278.00	300.00	1.27	1.15	-75.42	352.10	-1,353.60	1,398.65	1,396.23	2.42	578.029	
400.00	400.00	378.00	400.00	1.81	1.69	-75.42	352.10	-1,353.60	1,398.65	1,395.15	3.50	400.174	
500.00	500.00	478.00	500.00	2.34	2.23	-75.42	352.10	-1,353.60	1,398.65	1,394.08	4.57	306.016	
600.00	600.00	578.00	600.00	2.88	2.76	-75.42	352.10	-1,353.60	1,398.65	1,393.00	5.65	247.727 CC	
700.00	699.98	677.98	699.98	3.41	3.30	-140.00	352.10	-1,353.60	1,399.98	1,393.27	6.72	208.411	
800.00	799.84	777.84	799.84	3.94	3.84	-140.09	352.10	-1,353.60	1,404.00	1,396.21	7.79	180.321	
900.00	899.45	877.45	899.45	4.48	4.37	-140.23	352.10	-1,353.60	1,410.70	1,401.85	8.85	159.317	
1,000.00	998.70	976.70	998.70	5.03	4.91	-140.42	352.10	-1,353.60	1,420.11	1,410.19	9.92	143.143	
1,100.00	1,097.47	1,075.47	1,097.47	5.60	5.44	-140.66	352.10	-1,353.60	1,432.25	1,421.27	10.98	130.394	
1,200.00	1,195.78	1,173.78	1,195.78	6.19	5.97	-141.07	352.10	-1,353.60	1,446.51	1,434.45	12.05	120.010	
1,300.00	1,294.07	1,272.07	1,294.07	6.79	6.50	-141.52	352.10	-1,353.60	1,460.98	1,447.85	13.13	111.242	
1,400.00	1,392.36	1,370.36	1,392.36	7.40	7.02	-141.96	352.10	-1,353.60	1,475.54	1,461.32	14.22	103.769	
1,500.00	1,490.65	1,468.65	1,490.65	8.02	7.55	-142.39	352.10	-1,353.60	1,490.19	1,474.88	15.31	97.333	
1,600.00	1,588.93	1,566.93	1,588.93	8.64	8.08	-142.82	352.10	-1,353.60	1,504.92	1,488.52	16.40	91.740	
1,700.00	1,687.22	1,665.22	1,687.22	9.27	8.61	-143.24	352.10	-1,353.60	1,519.74	1,502.24	17.50	86.839	
1,800.00	1,785.51	1,763.51	1,785.51	9.90	9.14	-143.65	352.10	-1,353.60	1,534.63	1,516.03	18.60	82.511	
1,900.00	1,883.80	1,861.80	1,883.80	10.54	9.67	-144.05	352.10	-1,353.60	1,549.59	1,529.89	19.70	78.664	
2,000.00	1,982.09	1,960.09	1,982.09	11.17	10.20	-144.44	352.10	-1,353.60	1,564.63	1,543.83	20.80	75.225	
2,100.00	2,080.37	2,058.37	2,080.37	11.81	10.72	-144.83	352.10	-1,353.60	1,579.75	1,557.85	21.90	72.132	
2,200.00	2,178.66	2,156.66	2,178.66	12.45	11.25	-145.21	352.10	-1,353.60	1,594.93	1,571.93	23.00	69.336	
2,300.00	2,276.95	2,254.95	2,276.95	13.10	11.81	-145.60	352.10	-1,353.58	1,610.17	1,586.03	24.14	66.712	
2,400.00	2,375.24	2,353.24	2,375.24	13.74	12.97	-146.38	352.10	-1,343.97	1,621.30	1,595.45	25.84	62.732	
2,500.00	2,473.52	2,451.52	2,473.52	14.38	14.16	-147.06	352.10	-1,316.45	1,624.74	1,597.16	27.58	58.902	
2,600.00	2,571.81	2,549.81	2,571.81	15.03	14.98	-147.46	352.10	-1,289.32	1,621.87	1,592.93	28.94	56.047	
2,700.00	2,670.10	2,648.10	2,670.10	15.68	15.53	-147.72	352.10	-1,270.30	1,618.44	1,588.39	30.04	53.874	
2,800.00	2,768.39	2,746.39	2,768.39	16.32	16.10	-147.99	352.10	-1,251.29	1,615.04	1,583.89	31.15	51.851	
2,900.00	2,866.67	2,844.67	2,866.67	16.97	16.67	-148.26	352.10	-1,232.27	1,611.68	1,579.42	32.26	49.963	
3,000.00	2,964.96	2,942.96	2,964.96	17.62	17.25	-148.53	352.10	-1,213.26	1,608.36	1,574.99	33.37	48.198	
3,100.00	3,063.25	3,041.25	3,063.25	18.27	17.83	-148.80	352.10	-1,194.24	1,605.07	1,570.58	34.48	46.544	
3,200.00	3,161.54	3,139.54	3,161.54	18.92	18.42	-149.07	352.10	-1,175.23	1,601.82	1,566.21	35.60	44.993	
3,300.00	3,259.83	3,237.83	3,259.83	19.57	19.02	-149.34	352.10	-1,156.21	1,598.60	1,561.88	36.72	43.535	
3,400.00	3,358.11	3,336.11	3,358.11	20.22	19.62	-149.62	352.10	-1,137.20	1,595.42	1,557.58	37.84	42.162	
3,500.00	3,456.40	3,434.40	3,456.40	20.87	20.22	-149.89	352.10	-1,118.18	1,592.28	1,553.31	38.96	40.868	
3,600.00	3,554.69	3,532.69	3,554.69	21.52	20.83	-150.17	352.10	-1,099.17	1,589.17	1,549.09	40.08	39.645	
3,700.00	3,652.98	3,630.98	3,652.98	22.17	21.44	-150.44	352.10	-1,080.15	1,586.10	1,544.89	41.21	38.490	
3,800.00	3,751.26	3,729.26	3,751.26	22.82	22.06	-150.72	352.10	-1,061.14	1,583.07	1,540.74	42.33	37.395	
3,900.00	3,849.55	3,827.55	3,849.55	23.48	22.68	-151.00	352.10	-1,042.12	1,580.08	1,536.62	43.46	36.358	
4,000.00	3,947.84	3,925.84	3,947.84	24.13	23.30	-151.28	352.10	-1,023.10	1,577.12	1,532.53	44.59	35.373	
4,100.00	4,046.13	4,024.13	4,046.13	24.78	23.92	-151.56	352.10	-1,004.09	1,574.20	1,528.49	45.71	34.436	
4,200.00	4,144.42	4,122.42	4,144.42	25.43	24.55	-151.84	352.10	-985.07	1,571.32	1,524.48	46.84	33.546	
4,300.00	4,242.70	4,220.70	4,242.70	26.09	25.17	-152.13	352.10	-966.06	1,568.48	1,520.51	47.97	32.697	
4,400.00	4,340.99	4,318.99	4,340.99	26.74	25.80	-152.41	352.10	-947.04	1,565.68	1,516.58	49.10	31.888	
4,500.00	4,439.28	4,417.28	4,439.28	27.39	26.44	-152.70	352.10	-928.03	1,562.91	1,512.68	50.23	31.116	
4,600.00	4,537.57	4,515.57	4,537.57	28.05	27.07	-152.98	352.10	-909.01	1,560.19	1,508.83	51.36	30.379	
4,700.00	4,635.85	4,613.85	4,635.85	28.70	27.70	-153.27	352.10	-890.00	1,557.50	1,505.01	52.49	29.674	
4,800.00	4,734.14	4,712.14	4,734.14	29.35	28.34	-153.56	352.10	-870.98	1,554.85	1,501.24	53.62	28.999	
4,900.00	4,832.43	4,810.43	4,832.43	30.01	28.98	-153.85	352.10	-851.97	1,552.25	1,497.50	54.75	28.352	
5,000.00	4,930.72	4,908.72	4,930.72	30.66	29.62	-154.14	352.10	-832.95	1,549.68	1,493.80	55.88	27.732	
5,100.00	5,029.01	5,007.01	5,029.01	31.31	30.26	-154.43	352.10	-813.94	1,547.15	1,490.14	57.01	27.138	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17													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 +N/-S (usft)	Centre +E/-W (usft)					
5,200.00	5,127.29	5,452.12	5,422.02	31.97	30.90	-154.72	352.10	-794.92	1,544.66	1,486.52	58.14	26.567	
5,300.00	5,225.58	5,545.00	5,513.19	32.62	31.50	-154.99	352.10	-777.20	1,542.23	1,483.00	59.24	26.035	
5,385.48	5,309.60	5,600.00	5,567.28	33.18	31.85	-155.15	352.10	-767.22	1,541.13	1,481.09	60.04	25.670	
5,400.00	5,323.87	5,600.00	5,567.28	33.27	31.85	-155.15	352.10	-767.22	1,541.20	1,481.08	60.12	25.835	
5,500.00	5,422.16	5,679.02	5,645.30	33.93	32.34	-155.39	352.10	-754.71	1,542.27	1,481.13	61.13	25.227	
5,600.00	5,520.52	5,743.78	5,709.48	34.58	32.72	-155.58	352.10	-746.07	1,545.35	1,483.25	62.10	24.886	
5,700.00	5,619.38	5,800.00	5,765.34	35.19	33.05	-155.74	352.10	-739.74	1,547.99	1,485.00	62.99	24.575	
5,800.00	5,718.71	5,873.39	5,838.43	35.77	33.46	-155.89	352.10	-733.13	1,549.65	1,485.75	63.90	24.253	
5,900.00	5,818.37	5,938.24	5,903.14	36.31	33.81	-155.98	352.10	-728.85	1,550.43	1,485.75	64.68	23.972	
6,000.00	5,918.26	6,000.00	5,964.84	36.82	34.14	-156.03	352.10	-726.14	1,550.30	1,484.94	65.36	23.719	
6,100.00	6,018.25	6,068.02	6,032.84	37.28	34.48	-91.48	352.10	-724.69	1,549.29	1,483.21	66.08	23.446	
6,157.05	6,075.30	6,110.48	6,075.30	37.54	34.69	-91.48	352.10	-724.56	1,549.09	1,482.51	66.58	23.268	
6,200.00	6,118.25	6,153.43	6,118.25	37.74	34.90	-91.48	352.10	-724.56	1,549.09	1,482.08	67.01	23.118	
6,300.00	6,218.25	6,253.43	6,218.25	38.19	35.39	-91.48	352.10	-724.56	1,549.09	1,481.08	68.01	22.778	
6,400.00	6,318.25	6,353.43	6,318.25	38.65	35.88	-91.48	352.10	-724.56	1,549.09	1,480.08	69.01	22.446	
6,500.00	6,418.25	6,453.43	6,418.25	39.11	36.37	-91.48	352.10	-724.56	1,549.09	1,479.07	70.02	22.123	
6,600.00	6,518.25	6,553.43	6,518.25	39.57	36.86	-91.48	352.10	-724.56	1,549.09	1,478.06	71.03	21.809	
6,700.00	6,618.25	6,653.43	6,618.25	40.04	37.36	-91.48	352.10	-724.56	1,549.09	1,477.05	72.04	21.503	
6,800.00	6,718.25	6,753.43	6,718.25	40.51	37.85	-91.48	352.10	-724.56	1,549.09	1,476.04	73.06	21.204	
6,900.00	6,818.25	6,853.43	6,818.25	40.97	38.35	-91.48	352.10	-724.56	1,549.09	1,475.02	74.07	20.914	
7,000.00	6,918.25	6,953.43	6,918.25	41.44	38.85	-91.48	352.10	-724.56	1,549.09	1,474.00	75.09	20.631	
7,100.00	7,018.25	7,053.43	7,018.25	41.91	39.35	-91.48	352.10	-724.56	1,549.09	1,472.99	76.10	20.355	
7,200.00	7,118.25	7,153.43	7,118.25	42.39	39.85	-91.48	352.10	-724.56	1,549.09	1,471.97	77.12	20.086	
7,300.00	7,218.25	7,253.43	7,218.25	42.86	40.35	-91.48	352.10	-724.56	1,549.09	1,470.95	78.14	19.823	
7,400.00	7,318.25	7,353.43	7,318.25	43.34	40.85	-91.48	352.10	-724.56	1,549.09	1,469.92	79.17	19.567	
7,500.00	7,418.25	7,453.43	7,418.25	43.81	41.35	-91.48	352.10	-724.56	1,549.09	1,468.90	80.19	19.318	
7,600.00	7,518.25	7,553.43	7,518.25	44.29	41.86	-91.48	352.10	-724.56	1,549.09	1,467.87	81.22	19.074	
7,700.00	7,618.25	7,653.43	7,618.25	44.77	42.36	-91.48	352.10	-724.56	1,549.09	1,466.85	82.24	18.836	
7,800.00	7,718.25	7,753.43	7,718.25	45.25	42.86	-91.48	352.10	-724.56	1,549.09	1,465.82	83.27	18.603	
7,900.00	7,818.25	7,853.43	7,818.25	45.74	43.37	-91.48	352.10	-724.56	1,549.09	1,464.79	84.30	18.376	
8,000.00	7,918.25	7,953.43	7,918.25	46.22	43.88	-91.48	352.10	-724.56	1,549.09	1,463.76	85.33	18.154	
8,100.00	8,018.25	8,053.43	8,018.25	46.70	44.38	-91.48	352.10	-724.56	1,549.09	1,462.73	86.36	17.938	
8,200.00	8,118.25	8,153.43	8,118.25	47.19	44.89	-91.48	352.10	-724.56	1,549.09	1,461.70	87.39	17.726	
8,300.00	8,218.25	8,253.43	8,218.25	47.68	45.40	-91.48	352.10	-724.56	1,549.09	1,460.67	88.42	17.519	
8,400.00	8,318.25	8,353.43	8,318.25	48.17	45.91	-91.48	352.10	-724.56	1,549.09	1,459.63	89.46	17.316	
8,500.00	8,418.25	8,453.43	8,418.25	48.66	46.42	-91.48	352.10	-724.56	1,549.09	1,458.60	90.49	17.118	
8,600.00	8,518.25	8,553.43	8,518.25	49.15	46.93	-91.48	352.10	-724.56	1,549.09	1,457.56	91.53	16.924	
8,648.48	8,566.72	8,601.90	8,566.72	49.38	47.18	-90.52	352.10	-724.56	1,549.10	1,457.09	92.00	16.838	
8,700.00	8,618.24	8,653.42	8,618.24	49.64	47.44	-90.53	352.10	-724.56	1,549.10	1,456.56	92.54	16.740	
8,800.00	8,717.19	8,752.36	8,717.19	50.16	47.95	-91.01	352.10	-724.56	1,549.28	1,455.67	93.61	16.550	
8,900.00	8,812.27	8,847.45	8,812.27	50.70	48.44	-91.99	352.10	-724.56	1,550.13	1,455.41	94.72	16.365	
9,000.00	8,900.60	8,935.78	8,900.60	51.24	48.89	-93.26	352.10	-724.56	1,552.59	1,456.73	95.86	16.197	
9,100.00	8,979.50	9,014.68	8,979.50	51.77	49.29	-94.50	352.10	-724.56	1,557.93	1,460.97	96.96	16.068	
9,200.00	9,046.57	9,081.74	9,046.57	52.30	49.64	-95.36	352.10	-724.56	1,567.56	1,469.55	98.00	15.995	
9,300.00	9,099.76	9,134.94	9,099.76	52.84	49.91	-95.47	352.10	-724.56	1,582.72	1,483.72	99.00	15.988	
9,400.00	9,137.47	9,206.75	9,137.47	53.42	50.28	-95.72	353.92	-724.58	1,604.13	1,504.01	100.12	16.022	
9,500.00	9,158.55	9,508.64	9,452.54	54.06	51.68	-102.50	454.31	-725.57	1,629.11	1,527.50	101.61	16.033	
9,600.00	9,163.48	10,140.45	9,695.64	54.74	53.75	-108.99	1,004.30	-731.02	1,633.93	1,530.35	103.58	15.774	
9,700.00	9,164.82	10,240.25	9,690.68	55.50	54.33	-108.79	1,103.97	-732.00	1,631.21	1,526.12	105.10	15.521	
9,800.00	9,166.16	10,340.05	9,685.72	56.34	54.99	-108.59	1,203.64	-732.99	1,628.51	1,521.76	106.76	15.254	
9,900.00	9,167.50	10,439.85	9,680.76	57.25	55.73	-108.39	1,303.31	-733.97	1,625.83	1,517.28	108.55	14.977	
10,000.00	9,168.84	10,539.64	9,675.80	58.24	56.55	-108.19	1,402.98	-734.96	1,623.17	1,512.70	110.48	14.692	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17													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	
10,100.00	9,170.18	10,639.44	9,670.83	59.28	57.44	-107.98	1,502.65	-735.95	1,620.53	1,508.01	112.53	14.401	
10,200.00	9,171.52	10,739.24	9,665.87	60.39	58.40	-107.78	1,602.32	-736.93	1,617.92	1,503.22	114.70	14.106	
10,300.00	9,172.86	10,839.04	9,660.91	61.56	59.42	-107.57	1,701.99	-737.92	1,615.32	1,498.34	116.98	13.809	
10,400.00	9,174.20	10,938.84	9,655.95	62.78	60.50	-107.37	1,801.66	-738.90	1,612.74	1,493.38	119.36	13.511	
10,500.00	9,175.54	11,038.63	9,650.98	64.05	61.63	-107.16	1,901.33	-739.89	1,610.18	1,488.33	121.85	13.214	
10,600.00	9,176.88	11,138.43	9,646.02	65.37	62.82	-106.95	2,001.00	-740.88	1,607.65	1,483.21	124.44	12.919	
10,700.00	9,178.22	11,238.23	9,641.06	66.73	64.06	-106.75	2,100.67	-741.86	1,605.14	1,478.02	127.11	12.628	
10,800.00	9,179.56	11,338.03	9,636.10	68.14	65.35	-106.54	2,200.34	-742.85	1,602.64	1,472.77	129.87	12.340	
10,900.00	9,180.91	11,429.96	9,631.96	69.58	66.57	-106.36	2,292.17	-743.76	1,600.31	1,467.73	132.59	12.070	
11,000.00	9,182.25	11,522.17	9,630.13	71.06	67.82	-106.26	2,384.36	-744.67	1,598.69	1,463.35	135.35	11.812	
11,100.00	9,183.59	11,622.13	9,628.60	72.58	69.22	-106.17	2,484.30	-745.67	1,597.21	1,458.94	138.27	11.551	
11,200.00	9,184.93	11,722.08	9,627.07	74.13	70.66	-106.08	2,584.24	-746.66	1,595.73	1,454.46	141.27	11.296	
11,300.00	9,186.27	11,822.04	9,625.54	75.70	72.13	-105.99	2,684.18	-747.65	1,594.26	1,449.93	144.33	11.046	
11,400.00	9,187.61	11,922.00	9,624.01	77.31	73.64	-105.89	2,784.12	-748.65	1,592.79	1,445.35	147.45	10.803	
11,500.00	9,188.95	12,021.95	9,622.48	78.94	75.17	-105.80	2,884.06	-749.64	1,591.33	1,440.71	150.62	10.565	
11,600.00	9,190.29	12,121.91	9,620.95	80.60	76.74	-105.71	2,984.00	-750.64	1,589.87	1,436.02	153.85	10.334	
11,700.00	9,191.63	12,221.86	9,619.42	82.28	78.34	-105.62	3,083.94	-751.63	1,588.41	1,431.29	157.12	10.109	
11,800.00	9,192.97	12,321.82	9,617.89	83.99	79.96	-105.52	3,183.88	-752.62	1,586.96	1,426.52	160.45	9.891	
11,900.00	9,194.31	12,421.78	9,616.36	85.71	81.61	-105.43	3,283.82	-753.62	1,585.51	1,421.70	163.81	9.679	
12,000.00	9,195.65	12,521.73	9,614.83	87.46	83.28	-105.34	3,383.75	-754.61	1,584.07	1,416.85	167.22	9.473	
12,100.00	9,196.99	12,621.69	9,613.30	89.22	84.97	-105.24	3,483.69	-755.60	1,582.63	1,411.96	170.67	9.273	
12,200.00	9,198.33	12,721.65	9,611.77	91.00	86.68	-105.15	3,583.63	-756.60	1,581.20	1,407.04	174.16	9.079	
12,300.00	9,199.68	12,821.60	9,610.24	92.79	88.42	-105.06	3,683.57	-757.59	1,579.76	1,402.09	177.68	8.891	
12,400.00	9,201.02	12,921.56	9,608.71	94.61	90.17	-104.96	3,783.51	-758.59	1,578.34	1,397.11	181.23	8.709	
12,500.00	9,202.36	13,021.52	9,607.18	96.43	91.94	-104.87	3,883.45	-759.58	1,576.92	1,392.10	184.82	8.532	
12,600.00	9,203.70	13,121.47	9,605.65	98.27	93.72	-104.77	3,983.39	-760.57	1,575.50	1,387.07	188.43	8.361	
12,700.00	9,205.04	13,221.43	9,604.12	100.12	95.52	-104.68	4,083.33	-761.57	1,574.08	1,382.01	192.07	8.195	
12,800.00	9,206.38	13,321.38	9,602.59	101.99	97.34	-104.58	4,183.27	-762.56	1,572.68	1,376.93	195.74	8.034	
12,900.00	9,207.72	13,421.34	9,601.06	103.87	99.17	-104.49	4,283.21	-763.56	1,571.27	1,371.83	199.44	7.878	
13,000.00	9,209.06	13,521.30	9,599.53	105.75	101.01	-104.39	4,383.15	-764.55	1,569.87	1,366.71	203.16	7.727	
13,100.00	9,210.40	13,621.02	9,598.00	107.65	102.86	-104.30	4,482.86	-765.54	1,568.47	1,361.58	206.90	7.581	
13,200.00	9,211.74	13,711.47	9,597.99	109.56	104.54	-104.26	4,573.30	-766.44	1,567.45	1,356.99	210.46	7.448	
13,300.00	9,213.08	13,811.47	9,599.00	111.48	106.42	-104.26	4,673.29	-767.43	1,566.68	1,352.48	214.19	7.314	
13,400.00	9,214.42	13,911.47	9,600.01	113.40	108.31	-104.25	4,773.28	-768.42	1,565.91	1,347.96	217.95	7.185	
13,500.00	9,215.76	14,011.46	9,601.02	115.34	110.20	-104.25	4,873.26	-769.41	1,565.14	1,343.42	221.72	7.059	
13,600.00	9,217.10	14,111.46	9,602.03	117.28	112.11	-104.24	4,973.25	-770.40	1,564.37	1,338.86	225.51	6.937	
13,700.00	9,218.45	14,211.46	9,603.04	119.23	114.02	-104.23	5,073.24	-771.39	1,563.59	1,334.28	229.31	6.819	
13,800.00	9,219.79	14,311.45	9,604.05	121.19	115.94	-104.23	5,173.22	-772.38	1,562.82	1,329.69	233.13	6.704	
13,900.00	9,221.13	14,411.45	9,605.06	123.15	117.87	-104.22	5,273.21	-773.37	1,562.05	1,325.09	236.97	6.592	
14,000.00	9,222.47	14,511.45	9,606.07	125.12	119.81	-104.22	5,373.20	-774.36	1,561.28	1,320.47	240.81	6.483	
14,100.00	9,223.81	14,611.44	9,607.08	127.10	121.76	-104.21	5,473.18	-775.35	1,560.51	1,315.84	244.67	6.378	
14,200.00	9,225.15	14,711.44	9,608.09	129.08	123.71	-104.21	5,573.17	-776.34	1,559.74	1,311.20	248.55	6.275	
14,300.00	9,226.49	14,811.44	9,609.10	131.07	125.67	-104.20	5,673.16	-777.33	1,558.97	1,306.54	252.43	6.176	
14,400.00	9,227.83	14,911.43	9,610.11	133.06	127.64	-104.20	5,773.15	-778.32	1,558.20	1,301.88	256.32	6.079	
14,500.00	9,229.17	15,011.43	9,611.13	135.06	129.61	-104.19	5,873.13	-779.31	1,557.43	1,297.20	260.23	5.985	
14,600.00	9,230.68	15,113.70	9,612.20	137.06	131.63	-104.19	5,975.39	-780.30	1,556.80	1,292.45	264.35	5.889	
14,619.54	9,231.14	15,136.55	9,612.61	137.46	132.09	-104.19	5,998.24	-780.42	1,556.77	1,291.54	265.22	5.870	
14,700.00	9,233.89	15,223.12	9,615.34	139.07	133.80	-104.20	6,084.76	-780.22	1,557.04	1,288.38	268.67	5.795	
14,800.00	9,237.56	15,323.12	9,618.80	141.08	135.79	-104.19	6,184.70	-779.82	1,557.51	1,284.91	272.60	5.714	
14,900.00	9,241.22	15,423.12	9,622.26	143.09	137.79	-104.18	6,284.64	-779.41	1,557.98	1,281.44	276.54	5.634	
15,000.00	9,244.89	15,523.12	9,625.71	145.11	139.78	-104.16	6,384.58	-779.01	1,558.44	1,277.96	280.48	5.556	
15,100.00	9,248.55	15,623.12	9,629.17	147.13	141.79	-104.15	6,484.51	-778.61	1,558.91	1,274.47	284.44	5.481	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P2 - 6HC - OH / Job #61219 - Plan 3 06-09-17												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDCM												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)					
15,200.00	9,252.22	15,723.11	9,632.63	149.16	143.79	-104.14	6,584.45	-778.20	1,559.37	1,270.97	288.40	5.407	
15,300.00	9,255.88	15,823.11	9,636.09	151.18	145.80	-104.13	6,684.39	-777.80	1,559.84	1,267.47	292.37	5.335	
15,400.00	9,259.55	15,923.11	9,639.55	153.22	147.82	-104.12	6,784.33	-777.40	1,560.31	1,263.96	296.35	5.265	
15,500.00	9,263.21	16,023.11	9,643.00	155.25	149.84	-104.10	6,884.27	-776.99	1,560.77	1,260.44	300.34	5.197	
15,600.00	9,266.88	16,123.11	9,646.46	157.29	151.86	-104.09	6,984.20	-776.59	1,561.24	1,256.91	304.33	5.130	
15,700.00	9,270.54	16,223.11	9,649.92	159.33	153.89	-104.08	7,084.14	-776.18	1,561.71	1,253.38	308.32	5.065	
15,800.00	9,274.21	16,323.10	9,653.38	161.37	155.91	-104.07	7,184.08	-775.78	1,562.17	1,249.85	312.33	5.002	
15,900.00	9,277.87	16,423.10	9,656.84	163.42	157.95	-104.05	7,284.02	-775.38	1,562.64	1,246.30	316.34	4.940	
16,000.00	9,281.54	16,523.10	9,660.29	165.47	159.98	-104.04	7,383.95	-774.97	1,563.11	1,242.75	320.35	4.879	
16,100.00	9,285.20	16,623.10	9,663.75	167.52	162.02	-104.03	7,483.89	-774.57	1,563.57	1,239.20	324.37	4.820	
16,200.00	9,288.87	16,723.97	9,667.23	169.57	164.08	-104.02	7,584.70	-774.16	1,564.04	1,235.62	328.42	4.762	
16,300.00	9,292.53	16,835.11	9,668.73	171.63	166.35	-103.92	7,695.82	-773.74	1,564.01	1,231.27	332.74	4.700	
16,381.46	9,294.82	16,916.53	9,668.82	173.30	168.01	-103.84	7,777.25	-773.45	1,563.93	1,227.78	336.15	4.653	
16,400.00	9,295.57	16,935.06	9,668.84	173.68	168.39	-103.81	7,795.77	-773.38	1,563.86	1,226.93	336.93	4.641	
16,500.00	9,295.67	17,035.05	9,668.94	175.74	170.44	-103.80	7,895.77	-773.02	1,564.35	1,223.31	341.04	4.587	
16,600.00	9,295.12	17,135.05	9,669.04	177.80	172.49	-103.82	7,995.76	-772.66	1,564.99	1,219.93	345.06	4.535	
16,700.00	9,294.57	17,235.05	9,669.14	179.87	174.54	-103.84	8,095.76	-772.30	1,565.63	1,216.55	349.08	4.485	
16,800.00	9,294.03	17,335.04	9,669.24	181.93	176.60	-103.86	8,195.76	-771.94	1,566.27	1,213.16	353.11	4.436	
16,900.00	9,293.48	17,435.04	9,669.34	184.00	178.66	-103.88	8,295.75	-771.57	1,566.91	1,209.77	357.14	4.387	
17,000.00	9,292.93	17,535.04	9,669.44	186.07	180.72	-103.90	8,395.75	-771.21	1,567.55	1,206.38	361.17	4.340	
17,100.00	9,292.39	17,635.03	9,669.54	188.14	182.78	-103.91	8,495.74	-770.85	1,568.19	1,202.98	365.20	4.294	
17,200.00	9,291.84	17,735.03	9,669.64	190.22	184.84	-103.93	8,595.74	-770.49	1,568.83	1,199.58	369.24	4.249	
17,300.00	9,291.30	17,835.03	9,669.74	192.29	186.91	-103.95	8,695.74	-770.13	1,569.47	1,196.18	373.29	4.204	
17,400.00	9,290.75	17,935.02	9,669.84	194.37	188.98	-103.97	8,795.73	-769.77	1,570.11	1,192.77	377.33	4.161	
17,500.00	9,290.20	18,035.02	9,669.94	196.45	191.05	-103.99	8,895.73	-769.41	1,570.75	1,189.36	381.38	4.119	
17,600.00	9,289.66	18,135.02	9,670.04	198.53	193.12	-104.01	8,995.72	-769.05	1,571.39	1,185.95	385.43	4.077	
17,700.00	9,289.11	18,235.01	9,670.15	200.61	195.19	-104.03	9,095.72	-768.69	1,572.03	1,182.54	389.49	4.036	
17,800.00	9,288.56	18,335.01	9,670.25	202.69	197.27	-104.04	9,195.72	-768.32	1,572.67	1,179.12	393.54	3.996	
17,900.00	9,288.02	18,435.01	9,670.35	204.78	199.34	-104.06	9,295.71	-767.96	1,573.31	1,175.70	397.60	3.957	
18,000.00	9,287.47	18,535.00	9,670.45	206.86	201.42	-104.08	9,395.71	-767.60	1,573.95	1,172.28	401.67	3.919	
18,100.00	9,286.92	18,635.00	9,670.55	208.95	203.50	-104.10	9,495.70	-767.24	1,574.59	1,168.86	405.73	3.881	
18,200.00	9,286.38	18,735.00	9,670.65	211.04	205.58	-104.12	9,595.70	-766.88	1,575.23	1,165.43	409.80	3.844	
18,300.00	9,285.83	18,834.99	9,670.75	213.13	207.67	-104.14	9,695.70	-766.52	1,575.87	1,162.01	413.86	3.808	
18,400.00	9,285.28	18,934.99	9,670.85	215.22	209.75	-104.15	9,795.69	-766.16	1,576.51	1,158.58	417.94	3.772	
18,500.00	9,284.74	19,034.99	9,670.95	217.31	211.84	-104.17	9,895.69	-765.80	1,577.15	1,155.15	422.01	3.737	
18,600.00	9,284.19	19,128.93	9,671.42	219.41	213.80	-104.20	9,989.62	-765.46	1,577.90	1,151.95	425.94	3.704	
18,700.00	9,283.64	19,220.01	9,674.31	221.50	215.70	-104.32	10,080.66	-765.11	1,579.27	1,149.55	429.73	3.675	
18,800.00	9,283.10	19,319.91	9,678.35	223.60	217.79	-104.48	10,180.47	-764.72	1,580.87	1,147.24	433.64	3.646	
18,900.00	9,282.55	19,419.80	9,682.38	225.69	219.88	-104.63	10,280.28	-764.34	1,582.48	1,144.94	437.54	3.617	
19,000.00	9,282.00	19,519.70	9,686.42	227.79	221.97	-104.79	10,380.10	-763.95	1,584.11	1,142.66	441.45	3.588	
19,100.00	9,281.46	19,619.59	9,690.46	229.89	224.06	-104.94	10,479.91	-763.57	1,585.74	1,140.40	445.35	3.561	
19,200.00	9,280.91	19,719.48	9,694.49	231.99	226.16	-105.10	10,579.72	-763.18	1,587.39	1,138.15	449.24	3.533	
19,300.00	9,280.36	19,819.38	9,698.53	234.09	228.25	-105.25	10,679.53	-762.80	1,589.05	1,135.91	453.13	3.507	
19,400.00	9,279.82	19,919.27	9,702.56	236.19	230.34	-105.41	10,779.34	-762.41	1,590.72	1,133.70	457.02	3.481	
19,500.00	9,279.27	20,019.16	9,706.60	238.29	232.44	-105.56	10,879.15	-762.02	1,592.40	1,131.49	460.90	3.455	
19,549.38	9,279.00	20,068.49	9,708.59	239.33	233.48	-105.64	10,928.44	-761.83	1,593.23	1,130.41	462.82	3.442 ES, SF	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 11H - OH - Plan 1 11-01-16														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	10.00	0.00	0.00	-24.99	960.11	-447.60	1,059.37					
100.00	100.00	90.00	100.00	0.19	0.17	-24.99	960.11	-447.60	1,059.32	1,058.95	0.37	2,880.209		
200.00	200.00	190.00	200.00	0.73	0.68	-24.99	960.11	-447.60	1,059.32	1,057.91	1.41	751.933		
300.00	300.00	290.00	300.00	1.27	1.22	-24.99	960.11	-447.60	1,059.32	1,056.83	2.48	426.421		
400.00	400.00	390.00	400.00	1.81	1.75	-24.99	960.11	-447.60	1,059.32	1,055.76	3.56	297.593		
500.00	500.00	490.00	500.00	2.34	2.29	-24.99	960.11	-447.60	1,059.32	1,054.68	4.64	228.546		
600.00	600.00	590.00	600.00	2.88	2.83	-24.99	960.11	-447.60	1,059.32	1,053.61	5.71	185.505		
700.00	699.98	689.98	699.98	3.41	3.37	-89.64	960.11	-447.60	1,059.31	1,052.53	6.78	156.266		
800.00	799.84	789.84	799.84	3.94	3.90	-89.93	960.11	-447.60	1,059.29	1,051.44	7.84	135.036		
818.35	818.14	808.14	818.14	4.04	4.00	-90.00	960.11	-447.60	1,059.29	1,051.24	8.04	131.729	CC	
900.00	899.45	889.45	899.45	4.48	4.44	-90.40	960.11	-447.60	1,059.31	1,050.39	8.92	118.793		
1,000.00	998.70	988.70	998.70	5.03	4.97	-91.05	960.11	-447.60	1,059.47	1,049.47	10.00	105.938		
1,100.00	1,097.47	1,087.47	1,097.47	5.60	5.50	-91.87	960.11	-447.60	1,059.87	1,048.77	11.10	95.488		
1,200.00	1,195.78	1,185.78	1,195.78	6.19	6.03	-92.84	960.11	-447.60	1,060.63	1,048.42	12.22	86.828		
1,300.00	1,294.07	1,284.07	1,294.07	6.79	6.56	-93.82	960.11	-447.60	1,061.72	1,048.38	13.34	79.566	ES	
1,400.00	1,392.36	1,382.36	1,392.36	7.40	7.09	-94.79	960.11	-447.60	1,063.13	1,048.65	14.48	73.415		
1,500.00	1,490.65	1,480.65	1,490.65	8.02	7.62	-95.76	960.11	-447.60	1,064.85	1,049.23	15.62	68.153		
1,600.00	1,588.93	1,578.93	1,588.93	8.64	8.15	-96.73	960.11	-447.60	1,066.89	1,050.12	16.77	63.610		
1,700.00	1,687.22	1,677.22	1,687.22	9.27	8.67	-97.69	960.11	-447.60	1,069.25	1,051.32	17.92	59.655		
1,800.00	1,785.51	1,759.44	1,769.44	9.90	9.11	-98.52	960.24	-448.21	1,072.48	1,053.49	18.99	56.488		
1,900.00	1,883.80	1,836.18	1,846.13	10.54	9.51	-99.36	960.78	-450.77	1,077.92	1,057.90	20.02	53.854		
2,000.00	1,982.09	1,912.12	1,921.93	11.17	9.91	-100.25	961.74	-455.28	1,085.69	1,064.65	21.04	51.602		
2,100.00	2,080.37	1,987.16	1,996.68	11.81	10.30	-101.19	963.09	-461.67	1,095.86	1,073.80	22.06	49.674		
2,200.00	2,178.66	2,061.22	2,070.26	12.45	10.70	-102.17	964.82	-469.85	1,108.48	1,085.40	23.08	48.029		
2,300.00	2,276.95	2,134.22	2,142.56	13.10	11.09	-103.18	966.92	-479.73	1,123.60	1,099.51	24.09	46.637		
2,400.00	2,375.24	2,217.99	2,225.24	13.74	11.55	-104.36	969.71	-492.89	1,141.01	1,115.84	25.16	45.346		
2,500.00	2,473.52	2,312.57	2,318.56	14.38	12.07	-105.67	972.90	-507.97	1,159.27	1,132.99	26.28	44.105		
2,600.00	2,571.81	2,407.16	2,411.88	15.03	12.60	-106.94	976.10	-523.05	1,178.15	1,150.74	27.41	42.987		
2,700.00	2,670.10	2,501.75	2,505.21	15.68	13.14	-108.17	979.30	-538.13	1,197.60	1,169.07	28.53	41.978		
2,800.00	2,768.39	2,596.34	2,598.53	16.32	13.68	-109.36	982.49	-553.22	1,217.61	1,187.96	29.65	41.064		
2,900.00	2,866.67	2,690.92	2,691.85	16.97	14.23	-110.52	985.69	-568.30	1,238.15	1,207.38	30.77	40.236		
3,000.00	2,964.96	2,785.51	2,785.17	17.62	14.78	-111.64	988.89	-583.38	1,259.19	1,227.30	31.89	39.484		
3,100.00	3,063.25	2,880.10	2,878.50	18.27	15.34	-112.73	992.08	-598.46	1,280.71	1,247.70	33.01	38.799		
3,200.00	3,161.54	2,974.69	2,971.82	18.92	15.90	-113.78	995.28	-613.55	1,302.68	1,268.56	34.12	38.174		
3,300.00	3,259.83	3,069.27	3,065.14	19.57	16.46	-114.80	998.48	-628.63	1,325.08	1,289.84	35.24	37.603		
3,400.00	3,358.11	3,163.86	3,158.46	20.22	17.02	-115.79	1,001.67	-643.71	1,347.89	1,311.54	36.35	37.081		
3,500.00	3,456.40	3,258.45	3,251.79	20.87	17.59	-116.75	1,004.87	-658.79	1,371.09	1,333.63	37.46	36.602		
3,600.00	3,554.69	3,353.04	3,345.11	21.52	18.16	-117.67	1,008.07	-673.88	1,394.66	1,356.09	38.57	36.162		
3,700.00	3,652.98	3,447.62	3,438.43	22.17	18.73	-118.57	1,011.26	-688.96	1,418.58	1,378.90	39.67	35.758		
3,800.00	3,751.26	3,542.21	3,531.76	22.82	19.30	-119.44	1,014.46	-704.04	1,442.83	1,402.05	40.78	35.385		
3,900.00	3,849.55	3,636.80	3,625.08	23.48	19.88	-120.28	1,017.66	-719.13	1,467.40	1,425.52	41.88	35.041		
4,000.00	3,947.84	3,731.39	3,718.40	24.13	20.45	-121.09	1,020.85	-734.21	1,492.27	1,449.29	42.98	34.723		
4,100.00	4,046.13	3,825.98	3,811.72	24.78	21.03	-121.88	1,024.05	-749.29	1,517.42	1,473.35	44.07	34.429		
4,200.00	4,144.42	3,920.56	3,905.05	25.43	21.61	-122.64	1,027.25	-764.37	1,542.85	1,497.68	45.17	34.156		
4,300.00	4,242.70	4,015.15	3,998.37	26.09	22.19	-123.38	1,030.44	-779.46	1,568.54	1,522.28	46.27	33.903		
4,400.00	4,340.99	4,109.74	4,091.69	26.74	22.77	-124.10	1,033.64	-794.54	1,594.48	1,547.12	47.36	33.668		
4,500.00	4,439.28	4,204.33	4,185.01	27.39	23.35	-124.79	1,036.84	-809.62	1,620.65	1,572.20	48.45	33.449		
4,600.00	4,537.57	4,298.91	4,278.34	28.05	23.93	-125.47	1,040.03	-824.70	1,647.04	1,597.50	49.54	33.245		
4,700.00	4,635.85	4,393.50	4,371.66	28.70	24.52	-126.12	1,043.23	-839.79	1,673.65	1,623.02	50.63	33.055		
4,800.00	4,734.14	4,488.09	4,464.98	29.35	25.10	-126.75	1,046.43	-854.87	1,700.46	1,648.74	51.72	32.878		
4,900.00	4,832.43	4,582.68	4,558.31	30.01	25.69	-127.37	1,049.62	-869.95	1,727.46	1,674.65	52.81	32.712		
5,000.00	4,930.72	4,677.26	4,651.63	30.66	26.27	-127.96	1,052.82	-885.03	1,754.65	1,700.75	53.90	32.557		

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 11H - OH - Plan 1 11-01-16													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	5,029.01	4,771.85	4,744.95	31.31	26.86	-128.54	1,056.02	-900.12	1,782.01	1,727.03	54.98	32.411	
5,200.00	5,127.29	4,866.44	4,838.27	31.97	27.45	-129.10	1,059.21	-915.20	1,809.55	1,753.48	56.07	32.275	
5,300.00	5,225.58	4,961.03	4,931.60	32.62	28.04	-129.65	1,062.41	-930.28	1,837.24	1,780.09	57.15	32.147	
5,400.00	5,323.87	5,055.62	5,024.92	33.27	28.62	-130.17	1,065.61	-945.36	1,865.09	1,806.85	58.24	32.027	
5,500.00	5,422.16	5,150.20	5,118.24	33.93	29.21	-130.69	1,068.80	-960.45	1,893.08	1,833.76	59.32	31.914	
5,600.00	5,520.52	5,244.92	5,211.69	34.58	29.80	-131.39	1,072.00	-975.55	1,920.95	1,860.50	60.45	31.778	
5,700.00	5,619.38	5,340.51	5,306.01	35.19	30.40	-132.20	1,075.23	-990.79	1,946.99	1,885.38	61.61	31.603	
5,800.00	5,718.71	5,437.02	5,401.22	35.77	31.00	-132.89	1,078.50	-1,006.18	1,970.84	1,908.10	62.74	31.415	
5,900.00	5,818.37	5,534.30	5,497.21	36.31	31.61	-133.46	1,081.78	-1,021.69	1,992.42	1,928.59	63.83	31.214	
6,000.00	5,918.26	5,749.27	5,710.01	36.82	32.91	-134.03	1,088.03	-1,051.17	2,010.18	1,944.67	65.51	30.684	
6,100.00	6,018.25	6,058.06	6,018.25	37.28	34.55	-69.70	1,091.30	-1,066.58	2,015.76	1,948.04	67.71	29.768	
6,200.00	6,118.25	6,158.07	6,118.25	37.74	35.04	-69.70	1,091.30	-1,066.58	2,015.76	1,947.06	68.70	29.342	
6,300.00	6,218.25	6,258.07	6,218.25	38.19	35.53	-69.70	1,091.30	-1,066.58	2,015.76	1,946.07	69.68	28.927	
6,400.00	6,318.25	6,358.07	6,318.25	38.65	36.02	-69.70	1,091.30	-1,066.58	2,015.76	1,945.09	70.67	28.523	
6,500.00	6,418.25	6,458.07	6,418.25	39.11	36.52	-69.70	1,091.30	-1,066.58	2,015.76	1,944.09	71.66	28.128	
6,600.00	6,518.25	6,558.07	6,518.25	39.57	37.01	-69.70	1,091.30	-1,066.58	2,015.76	1,943.10	72.66	27.744	
6,700.00	6,618.25	6,658.07	6,618.25	40.04	37.50	-69.70	1,091.30	-1,066.58	2,015.76	1,942.11	73.65	27.369	
6,800.00	6,718.25	6,758.07	6,718.25	40.51	38.00	-69.70	1,091.30	-1,066.58	2,015.76	1,941.11	74.65	27.003	
6,900.00	6,818.25	6,858.07	6,818.25	40.97	38.50	-69.70	1,091.30	-1,066.58	2,015.76	1,940.11	75.65	26.646	
7,000.00	6,918.25	6,958.07	6,918.25	41.44	38.99	-69.70	1,091.30	-1,066.58	2,015.76	1,939.11	76.65	26.298	
7,100.00	7,018.25	7,058.07	7,018.25	41.91	39.49	-69.70	1,091.30	-1,066.58	2,015.76	1,938.10	77.66	25.958	
7,200.00	7,118.25	7,158.07	7,118.25	42.39	39.99	-69.70	1,091.30	-1,066.58	2,015.76	1,937.10	78.66	25.626	
7,300.00	7,218.25	7,258.07	7,218.25	42.86	40.49	-69.70	1,091.30	-1,066.58	2,015.76	1,936.09	79.67	25.302	
7,400.00	7,318.25	7,358.07	7,318.25	43.34	41.00	-69.70	1,091.30	-1,066.58	2,015.76	1,935.08	80.68	24.985	
7,500.00	7,418.25	7,458.07	7,418.25	43.81	41.50	-69.70	1,091.30	-1,066.58	2,015.76	1,934.07	81.69	24.676	
7,600.00	7,518.25	7,558.07	7,518.25	44.29	42.00	-69.70	1,091.30	-1,066.58	2,015.76	1,933.06	82.70	24.374	
7,700.00	7,618.25	7,658.07	7,618.25	44.77	42.51	-69.70	1,091.30	-1,066.58	2,015.76	1,932.04	83.71	24.079	
7,800.00	7,718.25	7,758.07	7,718.25	45.25	43.01	-69.70	1,091.30	-1,066.58	2,015.76	1,931.03	84.73	23.790	
7,900.00	7,818.25	7,858.07	7,818.25	45.74	43.52	-69.70	1,091.30	-1,066.58	2,015.76	1,930.01	85.75	23.508	
8,000.00	7,918.25	7,958.07	7,918.25	46.22	44.03	-69.70	1,091.30	-1,066.58	2,015.76	1,928.99	86.76	23.232	
8,100.00	8,018.25	8,058.07	8,018.25	46.70	44.53	-69.70	1,091.30	-1,066.58	2,015.76	1,927.97	87.78	22.963	
8,200.00	8,118.25	8,158.07	8,118.25	47.19	45.04	-69.70	1,091.30	-1,066.58	2,015.76	1,926.95	88.81	22.699	
8,300.00	8,218.25	8,258.07	8,218.25	47.68	45.55	-69.70	1,091.30	-1,066.58	2,015.76	1,925.93	89.83	22.440	
8,400.00	8,318.25	8,358.07	8,318.25	48.17	46.06	-69.70	1,091.30	-1,066.58	2,015.76	1,924.91	90.85	22.188	
8,500.00	8,418.25	8,458.07	8,418.25	48.66	46.57	-69.70	1,091.30	-1,066.58	2,015.76	1,923.88	91.88	21.940	
8,509.38	8,427.63	8,467.45	8,427.63	48.70	46.62	-69.70	1,091.30	-1,066.58	2,015.76	1,923.79	91.97	21.917	
8,600.00	8,518.25	8,522.86	8,483.04	49.15	46.90	-69.68	1,091.98	-1,066.59	2,016.31	1,923.59	92.72	21.747	
8,700.00	8,618.24	8,566.90	8,526.90	49.64	47.13	-68.53	1,095.83	-1,066.63	2,019.19	1,925.81	93.38	21.623	
8,800.00	8,717.19	8,600.00	8,559.60	50.16	47.30	-68.41	1,100.92	-1,066.68	2,020.17	1,926.36	93.81	21.534	
8,900.00	8,812.27	8,650.00	8,608.30	50.70	47.56	-68.73	1,112.18	-1,066.80	2,017.40	1,923.39	94.01	21.460	
9,000.00	8,900.60	8,700.00	8,655.83	51.24	47.81	-69.53	1,127.64	-1,066.95	2,011.15	1,917.12	94.03	21.389	
9,100.00	8,979.50	8,750.00	8,701.83	51.77	48.06	-70.80	1,147.19	-1,067.15	2,001.69	1,907.60	94.09	21.274	
9,200.00	9,046.57	8,785.39	8,733.28	52.30	48.23	-72.33	1,163.41	-1,067.32	1,989.32	1,895.00	94.32	21.091	
9,300.00	9,099.76	8,828.18	8,769.88	52.84	48.43	-74.28	1,185.57	-1,067.54	1,974.70	1,879.70	95.00	20.786	
9,400.00	9,137.47	8,870.35	8,804.22	53.42	48.62	-76.52	1,210.01	-1,067.79	1,958.49	1,862.40	96.10	20.380	
9,500.00	9,158.55	8,911.66	8,836.04	54.06	48.80	-78.94	1,236.34	-1,068.06	1,941.50	1,844.01	97.49	19.914	
9,600.00	9,163.48	8,950.00	8,863.80	54.74	48.96	-80.81	1,262.78	-1,068.33	1,924.81	1,825.95	98.86	19.470	
9,700.00	9,164.82	9,000.00	8,897.23	55.50	49.17	-81.79	1,299.93	-1,068.71	1,910.96	1,810.77	100.19	19.074	
9,800.00	9,166.16	9,050.00	8,927.30	56.34	49.37	-82.68	1,339.86	-1,069.11	1,900.29	1,798.75	101.55	18.713	
9,900.00	9,167.50	9,107.67	8,957.50	57.25	49.61	-83.56	1,388.96	-1,069.61	1,892.43	1,789.42	103.02	18.370	
10,000.00	9,168.84	9,173.49	8,985.75	58.24	49.90	-84.39	1,448.37	-1,070.22	1,886.92	1,782.34	104.58	18.044	
10,100.00	9,170.18	9,250.00	9,009.76	59.28	50.26	-85.09	1,520.95	-1,070.95	1,883.29	1,777.06	106.23	17.728	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 11H - OH - Plan 1 11-01-16													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	9,171.52	9,322.95	9,023.47	60.39	50.64	-85.47	1,592.54	-1,071.68	1,881.10	1,773.22	107.88	17.437	
10,300.00	9,172.86	9,404.23	9,027.96	61.56	51.10	-85.57	1,673.63	-1,072.51	1,880.08	1,770.49	109.59	17.156	
10,400.00	9,174.20	9,504.21	9,027.80	62.78	51.73	-85.53	1,773.61	-1,073.53	1,879.51	1,768.02	111.50	16.857	
10,500.00	9,175.54	9,604.20	9,027.64	64.05	52.45	-85.48	1,873.59	-1,074.54	1,878.95	1,765.42	113.54	16.549	
10,600.00	9,176.88	9,704.19	9,027.48	65.37	53.25	-85.43	1,973.57	-1,075.56	1,878.39	1,762.69	115.70	16.235	
10,700.00	9,178.22	9,804.17	9,027.33	66.73	54.13	-85.39	2,073.55	-1,076.58	1,877.83	1,759.85	117.98	15.916	
10,800.00	9,179.56	9,904.16	9,027.17	68.14	55.07	-85.34	2,173.53	-1,077.59	1,877.27	1,756.89	120.37	15.595	
10,900.00	9,180.91	10,004.14	9,027.01	69.58	56.09	-85.29	2,273.51	-1,078.61	1,876.71	1,753.83	122.87	15.273	
11,000.00	9,182.25	10,104.13	9,026.86	71.06	57.17	-85.24	2,373.50	-1,079.63	1,876.15	1,750.68	125.47	14.953	
11,100.00	9,183.59	10,204.12	9,026.70	72.58	58.31	-85.20	2,473.48	-1,080.65	1,875.59	1,747.43	128.16	14.634	
11,200.00	9,184.93	10,304.10	9,026.54	74.13	59.50	-85.15	2,573.46	-1,081.66	1,875.04	1,744.09	130.94	14.320	
11,300.00	9,186.27	10,404.09	9,026.38	75.70	60.75	-85.10	2,673.44	-1,082.68	1,874.48	1,740.68	133.80	14.009	
11,400.00	9,187.61	10,504.08	9,026.23	77.31	62.05	-85.05	2,773.42	-1,083.70	1,873.93	1,737.19	136.74	13.704	
11,500.00	9,188.95	10,604.06	9,026.07	78.94	63.40	-85.01	2,873.40	-1,084.72	1,873.38	1,733.63	139.75	13.405	
11,600.00	9,190.29	10,704.05	9,025.91	80.60	64.79	-84.96	2,973.38	-1,085.73	1,872.83	1,730.00	142.83	13.112	
11,700.00	9,191.63	10,804.04	9,025.76	82.28	66.22	-84.91	3,073.36	-1,086.75	1,872.28	1,726.31	145.97	12.827	
11,800.00	9,192.97	10,904.02	9,025.60	83.99	67.69	-84.86	3,173.34	-1,087.77	1,871.73	1,722.56	149.17	12.548	
11,900.00	9,194.31	11,004.01	9,025.44	85.71	69.20	-84.82	3,273.33	-1,088.78	1,871.19	1,718.76	152.42	12.276	
12,000.00	9,195.65	11,104.00	9,025.29	87.46	70.74	-84.77	3,373.31	-1,089.80	1,870.64	1,714.91	155.73	12.012	
12,100.00	9,196.99	11,203.98	9,025.13	89.22	72.31	-84.72	3,473.29	-1,090.82	1,870.10	1,711.01	159.08	11.755	
12,200.00	9,198.33	11,303.97	9,024.97	91.00	73.92	-84.67	3,573.27	-1,091.84	1,869.56	1,707.07	162.48	11.506	
12,300.00	9,199.68	11,403.95	9,024.81	92.79	75.55	-84.63	3,673.25	-1,092.85	1,869.01	1,703.09	165.92	11.264	
12,400.00	9,201.02	11,503.94	9,024.66	94.61	77.20	-84.58	3,773.23	-1,093.87	1,868.47	1,699.07	169.41	11.030	
12,500.00	9,202.36	11,603.93	9,024.50	96.43	78.88	-84.53	3,873.21	-1,094.89	1,867.94	1,695.01	172.92	10.802	
12,600.00	9,203.70	11,703.91	9,024.34	98.27	80.59	-84.48	3,973.19	-1,095.91	1,867.40	1,690.92	176.48	10.581	
12,700.00	9,205.04	11,803.90	9,024.19	100.12	82.31	-84.44	4,073.17	-1,096.92	1,866.86	1,686.80	180.06	10.368	
12,800.00	9,206.38	11,903.89	9,024.03	101.99	84.05	-84.39	4,173.16	-1,097.94	1,866.33	1,682.65	183.68	10.161	
12,900.00	9,207.72	12,003.87	9,023.87	103.87	85.82	-84.34	4,273.14	-1,098.96	1,865.80	1,678.47	187.33	9.960	
13,000.00	9,209.06	12,103.86	9,023.71	105.75	87.60	-84.29	4,373.12	-1,099.97	1,865.26	1,674.26	191.00	9.766	
13,100.00	9,210.40	12,203.85	9,023.56	107.65	89.40	-84.24	4,473.10	-1,100.99	1,864.73	1,670.03	194.70	9.578	
13,200.00	9,211.74	12,303.83	9,023.40	109.56	91.21	-84.20	4,573.08	-1,102.01	1,864.20	1,665.78	198.42	9.395	
13,300.00	9,213.08	12,403.82	9,023.24	111.48	93.04	-84.15	4,673.06	-1,103.03	1,863.68	1,661.51	202.17	9.219	
13,400.00	9,214.42	12,503.81	9,023.09	113.40	94.88	-84.10	4,773.04	-1,104.04	1,863.15	1,657.22	205.93	9.047	
13,500.00	9,215.76	12,603.79	9,022.93	115.34	96.74	-84.05	4,873.02	-1,105.06	1,862.62	1,652.90	209.72	8.881	
13,600.00	9,217.10	12,703.78	9,022.77	117.28	98.61	-84.00	4,973.01	-1,106.08	1,862.10	1,648.57	213.53	8.721	
13,700.00	9,218.45	12,803.77	9,022.62	119.23	100.49	-83.96	5,072.99	-1,107.10	1,861.58	1,644.23	217.35	8.565	
13,800.00	9,219.79	12,903.75	9,022.46	121.19	102.38	-83.91	5,172.97	-1,108.11	1,861.05	1,639.87	221.19	8.414	
13,900.00	9,221.13	13,003.74	9,022.30	123.15	104.28	-83.86	5,272.95	-1,109.13	1,860.53	1,635.49	225.05	8.267	
14,000.00	9,222.47	13,103.72	9,022.14	125.12	106.19	-83.81	5,372.93	-1,110.15	1,860.02	1,631.10	228.92	8.125	
14,100.00	9,223.81	13,203.71	9,021.99	127.10	108.11	-83.76	5,472.91	-1,111.16	1,859.50	1,626.70	232.80	7.987	
14,200.00	9,225.15	13,303.70	9,021.83	129.08	110.04	-83.72	5,572.89	-1,112.18	1,858.98	1,622.28	236.70	7.854	
14,300.00	9,226.49	13,403.68	9,021.67	131.07	111.98	-83.67	5,672.87	-1,113.20	1,858.47	1,617.85	240.61	7.724	
14,400.00	9,227.83	13,503.67	9,021.52	133.06	113.92	-83.62	5,772.85	-1,114.22	1,857.95	1,613.41	244.54	7.598	
14,500.00	9,229.17	13,603.66	9,021.36	135.06	115.88	-83.57	5,872.84	-1,115.23	1,857.44	1,608.97	248.47	7.475	
14,600.00	9,230.51	13,714.18	9,021.25	137.06	118.04	-83.52	5,983.36	-1,116.30	1,857.10	1,604.44	252.66	7.350	
14,603.66	9,230.76	13,721.17	9,021.29	137.14	118.18	-83.52	5,990.34	-1,116.33	1,857.10	1,604.23	252.87	7.344	
14,700.00	9,233.89	13,832.75	9,022.78	139.07	120.37	-83.49	6,101.91	-1,116.03	1,857.45	1,600.47	256.98	7.228	
14,800.00	9,237.56	13,932.72	9,024.24	141.08	122.34	-83.42	6,201.87	-1,115.65	1,858.26	1,597.33	260.93	7.122	
14,900.00	9,241.22	14,032.69	9,025.70	143.09	124.31	-83.36	6,301.83	-1,115.27	1,859.07	1,594.19	264.88	7.018	
15,000.00	9,244.89	14,132.67	9,027.17	145.11	126.29	-83.29	6,401.80	-1,114.90	1,859.88	1,591.04	268.85	6.918	
15,100.00	9,248.55	14,232.64	9,028.63	147.13	128.28	-83.22	6,501.76	-1,114.52	1,860.70	1,587.88	272.82	6.820	
15,200.00	9,252.22	14,332.62	9,030.09	149.16	130.27	-83.16	6,601.72	-1,114.14	1,861.52	1,584.71	276.80	6.725	



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Reference Site: HH SO 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 11H - OH - Plan 1 11-01-16													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	9,255.88	14,432.59	9,031.55	151.18	132.27	-83.09	6,701.69	-1,113.77	1,862.34	1,581.55	280.79	6.633	
15,400.00	9,259.55	14,532.57	9,033.01	153.22	134.27	-83.03	6,801.65	-1,113.39	1,863.16	1,578.38	284.78	6.542	
15,500.00	9,263.21	14,632.54	9,034.47	155.25	136.27	-82.96	6,901.61	-1,113.01	1,863.98	1,575.20	288.78	6.455	
15,600.00	9,266.88	14,732.51	9,035.93	157.29	138.28	-82.90	7,001.57	-1,112.64	1,864.81	1,572.02	292.79	6.369	
15,700.00	9,270.54	14,832.49	9,037.39	159.33	140.30	-82.83	7,101.54	-1,112.26	1,865.64	1,568.84	296.80	6.286	
15,800.00	9,274.21	14,932.46	9,038.85	161.37	142.32	-82.77	7,201.50	-1,111.88	1,866.47	1,565.65	300.82	6.205	
15,900.00	9,277.87	15,032.44	9,040.32	163.42	144.34	-82.70	7,301.46	-1,111.50	1,867.30	1,562.46	304.84	6.126	
16,000.00	9,281.54	15,132.41	9,041.78	165.47	146.36	-82.64	7,401.42	-1,111.13	1,868.14	1,559.27	308.87	6.048	
16,100.00	9,285.20	15,232.38	9,043.24	167.52	148.39	-82.57	7,501.39	-1,110.75	1,868.98	1,556.08	312.90	5.973	
16,200.00	9,288.87	15,332.36	9,044.70	169.57	150.43	-82.51	7,601.35	-1,110.37	1,869.82	1,552.88	316.94	5.900	
16,300.00	9,292.53	15,432.33	9,046.16	171.63	152.46	-82.44	7,701.31	-1,110.00	1,870.67	1,549.69	320.98	5.828	
16,400.00	9,295.57	15,532.32	9,047.62	173.68	154.50	-82.39	7,801.29	-1,109.62	1,871.42	1,546.38	325.03	5.758	
16,500.00	9,295.67	15,632.30	9,049.08	175.74	156.55	-82.43	7,901.26	-1,109.24	1,871.73	1,542.58	329.14	5.687	
16,600.00	9,295.12	15,732.28	9,050.54	177.80	158.59	-82.49	8,001.23	-1,108.87	1,871.94	1,538.67	333.27	5.617	
16,700.00	9,294.57	15,832.26	9,052.01	179.87	160.64	-82.55	8,101.20	-1,108.49	1,872.16	1,534.75	337.41	5.549	
16,800.00	9,294.03	15,932.24	9,053.47	181.93	162.69	-82.62	8,201.16	-1,108.11	1,872.38	1,530.83	341.55	5.482	
16,900.00	9,293.48	16,032.22	9,054.93	184.00	164.74	-82.68	8,301.13	-1,107.73	1,872.60	1,526.91	345.69	5.417	
17,000.00	9,292.93	16,132.20	9,056.39	186.07	166.80	-82.74	8,401.10	-1,107.36	1,872.82	1,522.99	349.84	5.353	
17,100.00	9,292.39	16,232.18	9,057.85	188.14	168.86	-82.81	8,501.06	-1,106.98	1,873.05	1,519.06	353.99	5.291	
17,200.00	9,291.84	16,332.15	9,059.31	190.22	170.92	-82.87	8,601.03	-1,106.60	1,873.28	1,515.13	358.15	5.230	
17,300.00	9,291.30	16,432.13	9,060.77	192.29	172.98	-82.93	8,701.00	-1,106.23	1,873.51	1,511.20	362.31	5.171	
17,400.00	9,290.75	16,532.11	9,062.23	194.37	175.05	-82.99	8,800.97	-1,105.85	1,873.74	1,507.27	366.47	5.113	
17,500.00	9,290.20	16,632.09	9,063.70	196.45	177.11	-83.06	8,900.93	-1,105.47	1,873.97	1,503.33	370.64	5.056	
17,600.00	9,289.66	16,732.07	9,065.16	198.53	179.18	-83.12	9,000.90	-1,105.09	1,874.21	1,499.40	374.82	5.000	
17,700.00	9,289.11	16,832.05	9,066.62	200.61	181.25	-83.18	9,100.87	-1,104.72	1,874.45	1,495.46	378.99	4.946	
17,800.00	9,288.56	16,932.03	9,068.08	202.69	183.33	-83.24	9,200.84	-1,104.34	1,874.69	1,491.52	383.17	4.893	
17,900.00	9,288.02	17,032.00	9,069.54	204.78	185.40	-83.31	9,300.80	-1,103.96	1,874.94	1,487.58	387.36	4.840	
18,000.00	9,287.47	17,131.98	9,071.00	206.86	187.48	-83.37	9,400.77	-1,103.59	1,875.18	1,483.64	391.54	4.789	
18,100.00	9,286.92	17,231.96	9,072.46	208.95	189.56	-83.43	9,500.74	-1,103.21	1,875.43	1,479.70	395.74	4.739	
18,200.00	9,286.38	17,331.94	9,073.92	211.04	191.64	-83.50	9,600.70	-1,102.83	1,875.68	1,475.75	399.93	4.690	
18,300.00	9,285.83	17,431.92	9,075.39	213.13	193.72	-83.56	9,700.67	-1,102.46	1,875.93	1,471.81	404.13	4.642	
18,400.00	9,285.28	17,531.90	9,076.85	215.22	195.80	-83.62	9,800.64	-1,102.08	1,876.19	1,467.86	408.33	4.595	
18,500.00	9,284.74	17,631.88	9,078.31	217.31	197.89	-83.68	9,900.61	-1,101.70	1,876.45	1,463.92	412.53	4.549	
18,600.00	9,284.19	17,731.86	9,079.77	219.41	199.97	-83.75	10,000.57	-1,101.32	1,876.71	1,459.97	416.73	4.503	
18,700.00	9,283.64	17,831.83	9,081.23	221.50	202.06	-83.81	10,100.54	-1,100.95	1,876.97	1,456.03	420.94	4.459	
18,800.00	9,283.10	17,931.81	9,082.69	223.60	204.15	-83.87	10,200.51	-1,100.57	1,877.23	1,452.08	425.15	4.415	
18,900.00	9,282.55	18,031.79	9,084.15	225.69	206.24	-83.93	10,300.48	-1,100.19	1,877.50	1,448.13	429.37	4.373	
19,000.00	9,282.00	18,131.77	9,085.61	227.79	208.33	-84.00	10,400.44	-1,099.82	1,877.77	1,444.18	433.58	4.331	
19,100.00	9,281.46	18,231.75	9,087.08	229.89	210.42	-84.06	10,500.41	-1,099.44	1,878.04	1,440.24	437.80	4.290	
19,200.00	9,280.91	18,331.73	9,088.54	231.99	212.52	-84.12	10,600.38	-1,099.06	1,878.31	1,436.29	442.02	4.249	
19,300.00	9,280.36	18,431.71	9,090.00	234.09	214.61	-84.18	10,700.34	-1,098.68	1,878.59	1,432.34	446.25	4.210	
19,400.00	9,279.82	18,531.69	9,091.46	236.19	216.71	-84.25	10,800.31	-1,098.31	1,878.86	1,428.39	450.47	4.171	
19,500.00	9,279.27	18,631.66	9,092.92	238.29	218.81	-84.31	10,900.28	-1,097.93	1,879.14	1,424.44	454.70	4.133	
19,549.38	9,279.00	18,681.04	9,093.64	239.33	219.84	-84.34	10,949.65	-1,097.74	1,879.28	1,422.50	456.79	4.114 SF	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 19H - OH - Plan 2 11-17-16												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	9.00	0.00	0.00	-26.19	910.11	-447.60	1,014.26				
100.00	100.00	91.00	100.00	0.19	0.18	-26.19	910.11	-447.60	1,014.22	1,013.85	0.37	2,743.155	
200.00	200.00	191.00	200.00	0.73	0.68	-26.19	910.11	-447.60	1,014.22	1,012.81	1.41	717.185	
300.00	300.00	291.00	300.00	1.27	1.22	-26.19	910.11	-447.60	1,014.22	1,011.73	2.49	407.386	
400.00	400.00	391.00	400.00	1.81	1.76	-26.19	910.11	-447.60	1,014.22	1,010.66	3.56	284.494	
500.00	500.00	491.00	500.00	2.34	2.30	-26.19	910.11	-447.60	1,014.22	1,009.58	4.64	218.563	
600.00	600.00	591.00	600.00	2.88	2.83	-26.19	910.11	-447.60	1,014.22	1,008.51	5.72	177.441 CC	
700.00	699.98	690.98	699.98	3.41	3.37	-90.84	910.11	-447.60	1,014.25	1,007.46	6.78	149.500	
800.00	799.84	790.84	799.84	3.94	3.91	-91.14	910.11	-447.60	1,014.34	1,006.49	7.85	129.218	
900.00	899.45	890.45	899.45	4.48	4.44	-91.62	910.11	-447.60	1,014.55	1,005.62	8.92	113.706	
1,000.00	998.70	989.70	998.70	5.03	4.98	-92.30	910.11	-447.60	1,014.97	1,004.96	10.01	101.437	
1,100.00	1,097.47	1,088.47	1,097.47	5.60	5.51	-93.15	910.11	-447.60	1,015.72	1,004.61	11.10	91.471 ES	
1,200.00	1,195.78	1,186.78	1,195.78	6.19	6.04	-94.15	910.11	-447.60	1,016.90	1,004.68	12.22	83.218	
1,300.00	1,294.07	1,285.07	1,294.07	6.79	6.57	-95.17	910.11	-447.60	1,018.43	1,005.08	13.35	76.300	
1,400.00	1,392.36	1,383.36	1,392.36	7.40	7.09	-96.18	910.11	-447.60	1,020.28	1,005.80	14.48	70.441	
1,500.00	1,490.65	1,481.65	1,490.65	8.02	7.62	-97.19	910.11	-447.60	1,022.46	1,006.84	15.63	65.431	
1,600.00	1,588.93	1,579.93	1,588.93	8.64	8.15	-98.20	910.11	-447.60	1,024.97	1,008.20	16.77	61.107	
1,700.00	1,687.22	1,678.22	1,687.22	9.27	8.68	-99.20	910.11	-447.60	1,027.81	1,009.88	17.92	57.344	
1,800.00	1,785.51	1,761.80	1,770.80	9.90	9.12	-100.07	910.17	-448.27	1,031.51	1,012.52	18.99	54.318	
1,900.00	1,883.80	1,840.48	1,849.42	10.54	9.53	-100.97	910.44	-451.03	1,037.33	1,017.30	20.03	51.798	
2,000.00	1,982.09	1,922.83	1,931.61	11.17	9.96	-102.00	910.94	-456.13	1,045.35	1,024.27	21.08	49.591	
2,100.00	2,080.37	2,019.78	2,028.32	11.81	10.47	-103.21	911.59	-462.87	1,054.39	1,032.18	22.21	47.478	
2,200.00	2,178.66	2,116.72	2,125.03	12.45	10.98	-104.41	912.24	-469.60	1,063.92	1,040.59	23.34	45.589	
2,300.00	2,276.95	2,213.67	2,221.74	13.10	11.49	-105.59	912.90	-476.34	1,073.93	1,049.46	24.47	43.893	
2,400.00	2,375.24	2,310.61	2,318.45	13.74	12.01	-106.74	913.55	-483.07	1,084.40	1,058.80	25.60	42.363	
2,500.00	2,473.52	2,407.56	2,415.16	14.38	12.52	-107.87	914.21	-489.81	1,095.32	1,068.59	26.73	40.980	
2,600.00	2,571.81	2,504.50	2,511.87	15.03	13.04	-108.98	914.86	-496.54	1,106.68	1,078.82	27.86	39.726	
2,700.00	2,670.10	2,601.45	2,608.58	15.68	13.56	-110.07	915.51	-503.28	1,118.45	1,089.47	28.99	38.585	
2,800.00	2,768.39	2,698.40	2,705.29	16.32	14.08	-111.14	916.17	-510.01	1,130.64	1,100.53	30.11	37.545	
2,900.00	2,866.67	2,795.34	2,801.99	16.97	14.61	-112.19	916.82	-516.75	1,143.23	1,111.98	31.24	36.594	
3,000.00	2,964.96	2,892.29	2,898.70	17.62	15.13	-113.21	917.47	-523.48	1,156.19	1,123.83	32.37	35.724	
3,100.00	3,063.25	2,989.23	2,995.41	18.27	15.66	-114.21	918.13	-530.22	1,169.53	1,136.04	33.49	34.924	
3,200.00	3,161.54	3,086.18	3,092.12	18.92	16.18	-115.19	918.78	-536.95	1,183.23	1,148.62	34.61	34.188	
3,300.00	3,259.83	3,183.12	3,188.83	19.57	16.71	-116.15	919.44	-543.69	1,197.27	1,161.54	35.73	33.510	
3,400.00	3,358.11	3,280.07	3,285.54	20.22	17.24	-117.08	920.09	-550.42	1,211.64	1,174.80	36.85	32.884	
3,500.00	3,456.40	3,377.01	3,382.25	20.87	17.77	-118.00	920.74	-557.16	1,226.34	1,188.38	37.96	32.305	
3,600.00	3,554.69	3,473.96	3,478.96	21.52	18.30	-118.89	921.40	-563.89	1,241.35	1,202.27	39.08	31.768	
3,700.00	3,652.98	3,570.90	3,575.67	22.17	18.83	-119.76	922.05	-570.63	1,256.66	1,216.47	40.19	31.270	
3,800.00	3,751.26	3,667.85	3,672.38	22.82	19.36	-120.62	922.71	-577.36	1,272.25	1,230.96	41.30	30.808	
3,900.00	3,849.55	3,764.80	3,769.09	23.48	19.89	-121.45	923.36	-584.10	1,288.13	1,245.72	42.40	30.377	
4,000.00	3,947.84	3,861.74	3,865.79	24.13	20.42	-122.26	924.01	-590.83	1,304.27	1,260.76	43.51	29.975	
4,100.00	4,046.13	3,958.69	3,962.50	24.78	20.95	-123.05	924.67	-597.57	1,320.67	1,276.05	44.62	29.601	
4,200.00	4,144.42	4,055.63	4,059.21	25.43	21.48	-123.83	925.32	-604.30	1,337.32	1,291.60	45.72	29.251	
4,300.00	4,242.70	4,152.58	4,155.92	26.09	22.02	-124.58	925.97	-611.04	1,354.21	1,307.39	46.82	28.923	
4,400.00	4,340.99	4,249.52	4,252.63	26.74	22.55	-125.32	926.63	-617.77	1,371.33	1,323.41	47.92	28.617	
4,500.00	4,439.28	4,346.47	4,349.34	27.39	23.08	-126.04	927.28	-624.51	1,388.67	1,339.65	49.02	28.329	
4,600.00	4,537.57	4,443.41	4,446.05	28.05	23.61	-126.74	927.94	-631.24	1,406.23	1,356.11	50.12	28.059	
4,700.00	4,635.85	4,540.36	4,542.76	28.70	24.15	-127.43	928.59	-637.98	1,423.99	1,372.78	51.21	27.806	
4,800.00	4,734.14	4,637.31	4,639.47	29.35	24.68	-128.10	929.24	-644.71	1,441.95	1,389.64	52.31	27.567	
4,900.00	4,832.43	4,734.25	4,736.18	30.01	25.22	-128.75	929.90	-651.45	1,460.10	1,406.70	53.40	27.343	
5,000.00	4,930.72	4,831.20	4,832.89	30.66	25.75	-129.39	930.55	-658.18	1,478.44	1,423.94	54.49	27.131	
5,100.00	5,029.01	4,928.14	4,929.59	31.31	26.29	-130.01	931.20	-664.92	1,496.95	1,441.36	55.58	26.931	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 19H - OH - Plan 2 11-17-16													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HDCM													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	
5,200.00	5,127.29	5,025.09	5,026.30	31.97	26.82	-130.62	931.86	-671.65	1,515.63	1,458.96	56.67	26.743	
5,300.00	5,225.58	5,122.03	5,123.01	32.62	27.36	-131.21	932.51	-678.39	1,534.48	1,476.72	57.76	26.565	
5,400.00	5,323.87	5,218.98	5,219.72	33.27	27.89	-131.79	933.17	-685.12	1,553.49	1,494.63	58.85	26.397	
5,500.00	5,422.16	5,315.92	5,316.43	33.93	28.43	-132.35	933.82	-691.86	1,572.65	1,512.71	59.94	26.237	
5,600.00	5,520.52	5,412.97	5,413.24	34.58	28.96	-133.03	934.47	-698.60	1,591.67	1,530.60	61.07	26.063	
5,700.00	5,619.38	5,510.69	5,510.72	35.19	29.50	-133.74	935.13	-705.39	1,608.77	1,546.55	62.22	25.856	
5,800.00	5,718.71	5,609.08	5,608.87	35.77	30.05	-134.31	935.80	-712.22	1,623.57	1,560.24	63.33	25.636	
5,900.00	5,818.37	5,708.02	5,707.57	36.31	30.59	-134.75	936.46	-719.10	1,636.00	1,571.60	64.40	25.404	
6,000.00	5,918.26	5,855.01	5,854.28	36.82	31.40	-135.11	937.33	-728.05	1,645.47	1,579.80	65.68	25.054	
6,100.00	6,018.25	6,019.01	6,018.25	37.28	32.26	-70.66	937.56	-730.33	1,647.29	1,580.22	67.07	24.562	
6,200.00	6,118.25	6,119.01	6,118.25	37.74	32.78	-70.66	937.56	-730.33	1,647.29	1,579.23	68.06	24.203	
6,300.00	6,218.25	6,219.01	6,218.25	38.19	33.30	-70.66	937.56	-730.33	1,647.29	1,578.23	69.06	23.854	
6,400.00	6,318.25	6,319.01	6,318.25	38.65	33.82	-70.66	937.56	-730.33	1,647.29	1,577.23	70.06	23.514	
6,500.00	6,418.25	6,419.01	6,418.25	39.11	34.34	-70.66	937.56	-730.33	1,647.29	1,576.23	71.06	23.182	
6,600.00	6,518.25	6,519.01	6,518.25	39.57	34.86	-70.66	937.56	-730.33	1,647.29	1,575.22	72.06	22.860	
6,700.00	6,618.25	6,619.01	6,618.25	40.04	35.38	-70.66	937.56	-730.33	1,647.29	1,574.22	73.07	22.545	
6,800.00	6,718.25	6,719.01	6,718.25	40.51	35.90	-70.66	937.56	-730.33	1,647.29	1,573.21	74.07	22.239	
6,900.00	6,818.25	6,819.01	6,818.25	40.97	36.42	-70.66	937.56	-730.33	1,647.29	1,572.20	75.08	21.940	
7,000.00	6,918.25	6,919.01	6,918.25	41.44	36.95	-70.66	937.56	-730.33	1,647.29	1,571.19	76.09	21.648	
7,100.00	7,018.25	7,019.01	7,018.25	41.91	37.47	-70.66	937.56	-730.33	1,647.29	1,570.18	77.11	21.364	
7,200.00	7,118.25	7,119.01	7,118.25	42.39	37.99	-70.66	937.56	-730.33	1,647.29	1,569.17	78.12	21.087	
7,300.00	7,218.25	7,219.01	7,218.25	42.86	38.51	-70.66	937.56	-730.33	1,647.29	1,568.15	79.14	20.816	
7,400.00	7,318.25	7,319.01	7,318.25	43.34	39.04	-70.66	937.56	-730.33	1,647.29	1,567.13	80.15	20.552	
7,500.00	7,418.25	7,419.01	7,418.25	43.81	39.56	-70.66	937.56	-730.33	1,647.29	1,566.11	81.17	20.294	
7,600.00	7,518.25	7,519.01	7,518.25	44.29	40.09	-70.66	937.56	-730.33	1,647.29	1,565.09	82.19	20.042	
7,700.00	7,618.25	7,619.01	7,618.25	44.77	40.61	-70.66	937.56	-730.33	1,647.29	1,564.07	83.21	19.796	
7,800.00	7,718.25	7,719.01	7,718.25	45.25	41.14	-70.66	937.56	-730.33	1,647.29	1,563.05	84.24	19.556	
7,900.00	7,818.25	7,819.01	7,818.25	45.74	41.66	-70.66	937.56	-730.33	1,647.29	1,562.03	85.26	19.321	
8,000.00	7,918.25	7,919.01	7,918.25	46.22	42.19	-70.66	937.56	-730.33	1,647.29	1,561.00	86.28	19.091	
8,100.00	8,018.25	8,019.01	8,018.25	46.70	42.71	-70.66	937.56	-730.33	1,647.29	1,559.98	87.31	18.867	
8,200.00	8,118.25	8,119.01	8,118.25	47.19	43.24	-70.66	937.56	-730.33	1,647.29	1,558.95	88.34	18.648	
8,300.00	8,218.25	8,219.01	8,218.25	47.68	43.77	-70.66	937.56	-730.33	1,647.29	1,557.92	89.37	18.433	
8,400.00	8,318.25	8,319.01	8,318.25	48.17	44.29	-70.66	937.56	-730.33	1,647.29	1,556.89	90.40	18.223	
8,500.00	8,418.25	8,419.01	8,418.25	48.66	44.82	-70.66	937.56	-730.33	1,647.29	1,555.86	91.43	18.018	
8,600.00	8,518.25	8,519.01	8,518.25	49.15	45.35	-70.66	937.56	-730.33	1,647.29	1,554.83	92.46	17.816	
8,700.00	8,618.24	8,619.00	8,618.24	49.64	45.88	-69.73	937.56	-730.33	1,647.05	1,553.66	93.39	17.636	
8,800.00	8,717.19	8,717.95	8,717.19	50.16	46.40	-70.61	937.56	-730.33	1,642.39	1,548.32	94.06	17.461	
8,900.00	8,812.27	8,813.03	8,812.27	50.70	46.90	-72.54	937.56	-730.33	1,632.26	1,537.71	94.56	17.262	
9,000.00	8,900.60	8,901.36	8,900.60	51.24	47.37	-75.35	937.56	-730.33	1,617.82	1,522.67	95.15	17.003	
9,100.00	8,979.50	8,980.26	8,979.50	51.77	47.78	-78.74	937.56	-730.33	1,600.70	1,504.68	96.02	16.670	
9,200.00	9,046.57	9,036.18	9,035.41	52.30	48.08	-81.98	937.87	-730.34	1,583.04	1,485.98	97.07	16.309	
9,300.00	9,099.76	9,075.00	9,074.14	52.84	48.29	-84.70	940.48	-730.36	1,567.35	1,469.21	98.14	15.970	
9,400.00	9,137.47	9,111.29	9,110.10	53.42	48.48	-87.11	945.28	-730.41	1,555.01	1,455.76	99.24	15.689	
9,500.00	9,158.55	9,143.80	9,142.00	54.06	48.65	-89.00	951.51	-730.47	1,547.14	1,446.85	100.29	15.427	
9,591.44	9,165.32	9,170.95	9,168.34	54.68	48.78	-90.11	958.09	-730.54	1,544.70	1,443.51	101.19	15.265	
9,600.00	9,163.48	9,171.48	9,168.86	54.74	48.79	-90.20	958.23	-730.54	1,544.73	1,443.47	101.26	15.255	
9,700.00	9,164.82	9,206.46	9,202.26	55.50	48.96	-91.44	968.56	-730.64	1,548.20	1,445.89	102.30	15.133	
9,800.00	9,166.16	9,259.46	9,251.53	56.34	49.22	-93.25	988.06	-730.84	1,557.13	1,453.67	103.46	15.050	
9,900.00	9,167.50	9,347.05	9,328.34	57.25	49.61	-96.06	1,029.96	-731.25	1,570.50	1,465.82	104.68	15.003	
10,000.00	9,168.84	9,506.54	9,448.38	58.24	50.23	-100.38	1,134.19	-732.29	1,585.71	1,479.96	105.75	14.995	
10,100.00	9,170.18	9,796.57	9,576.65	59.28	51.55	-104.80	1,390.86	-734.84	1,596.13	1,489.25	106.88	14.933	
10,200.00	9,171.52	9,983.50	9,589.40	60.39	52.51	-105.17	1,576.89	-736.69	1,596.04	1,487.24	108.80	14.670	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 19H - OH - Plan 2 11-17-16													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	
10,300.00	9,172.86	10,083.49	9,589.57	61.56	53.11	-105.14	1,676.88	-737.69	1,595.05	1,484.47	110.58	14.424	
10,400.00	9,174.20	10,183.48	9,589.75	62.78	53.80	-105.10	1,776.86	-738.68	1,594.06	1,481.57	112.49	14.171	
10,500.00	9,175.54	10,283.47	9,589.92	64.05	54.55	-105.07	1,876.85	-739.68	1,593.08	1,478.55	114.52	13.910	
10,600.00	9,176.88	10,383.46	9,590.10	65.37	55.38	-105.04	1,976.84	-740.67	1,592.09	1,475.42	116.68	13.645	
10,700.00	9,178.22	10,483.45	9,590.27	66.73	56.29	-105.00	2,076.82	-741.67	1,591.11	1,472.17	118.94	13.377	
10,800.00	9,179.56	10,583.44	9,590.45	68.14	57.25	-104.97	2,176.81	-742.66	1,590.13	1,468.81	121.31	13.108	
10,900.00	9,180.91	10,683.43	9,590.62	69.58	58.28	-104.94	2,276.79	-743.66	1,589.14	1,465.36	123.78	12.838	
11,000.00	9,182.25	10,783.43	9,590.80	71.06	59.38	-104.90	2,376.78	-744.65	1,588.16	1,461.81	126.35	12.570	
11,100.00	9,183.59	10,883.42	9,590.97	72.58	60.53	-104.87	2,476.76	-745.65	1,587.18	1,458.17	129.00	12.303	
11,200.00	9,184.93	10,983.41	9,591.14	74.13	61.73	-104.83	2,576.75	-746.64	1,586.20	1,454.45	131.74	12.040	
11,300.00	9,186.27	11,083.40	9,591.32	75.70	62.98	-104.80	2,676.74	-747.64	1,585.22	1,450.65	134.56	11.780	
11,400.00	9,187.61	11,183.39	9,591.49	77.31	64.29	-104.76	2,776.72	-748.63	1,584.24	1,446.78	137.46	11.525	
11,500.00	9,188.95	11,283.38	9,591.67	78.94	65.63	-104.73	2,876.71	-749.63	1,583.26	1,442.84	140.42	11.275	
11,600.00	9,190.29	11,383.37	9,591.84	80.60	67.02	-104.70	2,976.69	-750.62	1,582.28	1,438.83	143.45	11.030	
11,700.00	9,191.63	11,483.36	9,592.02	82.28	68.45	-104.66	3,076.68	-751.62	1,581.30	1,434.76	146.54	10.791	
11,800.00	9,192.97	11,583.35	9,592.19	83.99	69.92	-104.63	3,176.66	-752.61	1,580.32	1,430.64	149.69	10.558	
11,900.00	9,194.31	11,683.34	9,592.37	85.71	71.42	-104.59	3,276.65	-753.61	1,579.34	1,426.46	152.89	10.330	
12,000.00	9,195.65	11,783.33	9,592.54	87.46	72.96	-104.56	3,376.63	-754.60	1,578.37	1,422.23	156.14	10.109	
12,100.00	9,196.99	11,883.32	9,592.72	89.22	74.52	-104.52	3,476.62	-755.60	1,577.39	1,417.95	159.44	9.893	
12,200.00	9,198.33	11,983.31	9,592.89	91.00	76.12	-104.49	3,576.61	-756.59	1,576.41	1,413.63	162.79	9.684	
12,300.00	9,199.68	12,083.30	9,593.06	92.79	77.74	-104.45	3,676.59	-757.59	1,575.44	1,409.26	166.18	9.480	
12,400.00	9,201.02	12,183.30	9,593.24	94.61	79.39	-104.42	3,776.58	-758.58	1,574.47	1,404.86	169.61	9.283	
12,500.00	9,202.36	12,283.29	9,593.41	96.43	81.06	-104.38	3,876.56	-759.58	1,573.49	1,400.42	173.07	9.091	
12,600.00	9,203.70	12,383.28	9,593.59	98.27	82.76	-104.35	3,976.55	-760.57	1,572.52	1,395.94	176.58	8.906	
12,700.00	9,205.04	12,483.27	9,593.76	100.12	84.47	-104.32	4,076.53	-761.57	1,571.55	1,391.43	180.11	8.725	
12,800.00	9,206.38	12,583.26	9,593.94	101.99	86.21	-104.28	4,176.52	-762.56	1,570.57	1,386.90	183.68	8.551	
12,900.00	9,207.72	12,683.25	9,594.11	103.87	87.97	-104.25	4,276.50	-763.56	1,569.60	1,382.33	187.27	8.381	
13,000.00	9,209.06	12,783.24	9,594.29	105.75	89.74	-104.21	4,376.49	-764.55	1,568.63	1,377.73	190.90	8.217	
13,100.00	9,210.40	12,883.23	9,594.46	107.65	91.53	-104.18	4,476.48	-765.55	1,567.66	1,373.11	194.55	8.058	
13,200.00	9,211.74	12,983.22	9,594.63	109.56	93.33	-104.14	4,576.46	-766.54	1,566.69	1,368.47	198.22	7.904	
13,300.00	9,213.08	13,083.21	9,594.81	111.48	95.15	-104.11	4,676.45	-767.54	1,565.72	1,363.80	201.92	7.754	
13,400.00	9,214.42	13,183.20	9,594.98	113.40	96.99	-104.07	4,776.43	-768.53	1,564.75	1,359.11	205.65	7.609	
13,500.00	9,215.76	13,283.19	9,595.16	115.34	98.83	-104.04	4,876.42	-769.53	1,563.78	1,354.39	209.39	7.468	
13,600.00	9,217.10	13,383.18	9,595.33	117.28	100.69	-104.00	4,976.40	-770.52	1,562.82	1,349.66	213.15	7.332	
13,700.00	9,218.45	13,483.17	9,595.51	119.23	102.56	-103.96	5,076.39	-771.52	1,561.85	1,344.91	216.94	7.200	
13,800.00	9,219.79	13,583.17	9,595.68	121.19	104.45	-103.93	5,176.38	-772.51	1,560.88	1,340.15	220.74	7.071	
13,900.00	9,221.13	13,683.16	9,595.86	123.15	106.34	-103.89	5,276.36	-773.51	1,559.92	1,335.36	224.55	6.947	
14,000.00	9,222.47	13,783.15	9,596.03	125.12	108.24	-103.86	5,376.35	-774.50	1,558.95	1,330.56	228.39	6.826	
14,100.00	9,223.81	13,883.14	9,596.21	127.10	110.15	-103.82	5,476.33	-775.50	1,557.99	1,325.75	232.24	6.709	
14,200.00	9,225.15	13,983.13	9,596.38	129.08	112.08	-103.79	5,576.32	-776.49	1,557.02	1,320.92	236.10	6.595	
14,300.00	9,226.49	14,083.12	9,596.55	131.07	114.01	-103.75	5,676.30	-777.49	1,556.06	1,316.08	239.98	6.484	
14,400.00	9,227.83	14,183.11	9,596.73	133.06	115.94	-103.72	5,776.29	-778.48	1,555.10	1,311.22	243.88	6.377	
14,500.00	9,229.17	14,283.10	9,596.90	135.06	117.89	-103.68	5,876.27	-779.48	1,554.14	1,306.35	247.78	6.272	
14,600.00	9,230.51	14,383.09	9,597.07	137.06	119.89	-103.64	5,976.26	-780.47	1,553.18	1,301.37	251.91	6.166	
14,700.00	9,231.85	14,483.08	9,597.24	139.07	121.82	-103.59	6,076.25	-781.46	1,552.22	1,296.33	256.10	6.064	
14,800.00	9,233.19	14,583.07	9,597.41	141.08	123.74	-103.55	6,176.24	-782.45	1,551.26	1,291.28	260.07	5.971	
14,900.00	9,234.53	14,683.06	9,597.58	143.09	125.65	-103.51	6,276.23	-783.44	1,550.30	1,286.23	264.05	5.881	
14,950.85	9,235.87	14,733.05	9,597.75	144.12	127.05	-103.46	6,343.54	-784.43	1,549.34	1,281.18	266.08	5.836	
15,000.00	9,237.21	14,783.04	9,597.92	145.11	128.02	-103.42	6,392.67	-785.42	1,548.38	1,276.13	268.04	5.794	
15,100.00	9,238.55	14,833.03	9,598.09	147.13	130.00	-103.37	6,441.80	-786.41	1,547.42	1,271.08	270.04	5.708	
15,200.00	9,239.89	14,883.02	9,598.26	149.16	131.99	-103.33	6,490.93	-787.40	1,546.46	1,266.03	272.04	5.625	
15,300.00	9,241.23	14,933.01	9,598.43	151.18	133.98	-103.28	6,540.06	-788.39	1,545.50	1,261.08	274.04	5.545	

CC - Min centre to center distance or covergent 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 19H - OH - Plan 2 11-17-16													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	9,259.55	15,199.42	9,607.59	153.22	135.98	-102.96	6,792.52	-777.54	1,552.96	1,268.85	284.11	5.466	
15,500.00	9,263.21	15,299.39	9,608.89	155.25	137.98	-102.87	6,892.48	-777.16	1,552.98	1,264.83	288.15	5.389	
15,600.00	9,266.88	15,399.36	9,610.20	157.29	139.98	-102.78	6,992.44	-776.79	1,553.00	1,260.80	292.20	5.315	
15,700.00	9,270.54	15,499.33	9,611.50	159.33	141.99	-102.69	7,092.40	-776.41	1,553.02	1,256.77	296.26	5.242	
15,800.00	9,274.21	15,599.30	9,612.80	161.37	144.00	-102.60	7,192.36	-776.03	1,553.06	1,252.73	300.32	5.171	
15,900.00	9,277.87	15,699.27	9,614.10	163.42	146.02	-102.51	7,292.32	-775.66	1,553.09	1,248.70	304.39	5.102	
16,000.00	9,281.54	15,799.24	9,615.40	165.47	148.04	-102.42	7,392.28	-775.28	1,553.13	1,244.65	308.47	5.035	
16,100.00	9,285.20	15,899.21	9,616.70	167.52	150.07	-102.33	7,492.24	-774.91	1,553.17	1,240.61	312.56	4.969	
16,200.00	9,288.87	15,999.18	9,618.00	169.57	152.09	-102.24	7,592.21	-774.53	1,553.21	1,236.56	316.66	4.905	
16,300.00	9,292.53	16,099.15	9,619.30	171.63	154.13	-102.15	7,692.17	-774.16	1,553.26	1,232.51	320.76	4.842	
16,400.00	9,295.57	16,199.13	9,620.60	173.68	156.16	-102.08	7,792.14	-773.78	1,553.44	1,228.57	324.86	4.782	
16,500.00	9,295.67	16,299.12	9,621.90	175.74	158.20	-102.11	7,892.12	-773.41	1,554.17	1,225.29	328.89	4.726	
16,600.00	9,295.12	16,399.10	9,623.20	177.80	160.24	-102.18	7,992.09	-773.03	1,555.04	1,222.16	332.88	4.671	
16,700.00	9,294.57	16,499.09	9,624.51	179.87	162.28	-102.24	8,092.06	-772.66	1,555.90	1,219.02	336.88	4.619	
16,800.00	9,294.03	16,599.07	9,625.81	181.93	164.33	-102.30	8,192.04	-772.28	1,556.77	1,215.89	340.88	4.567	
16,900.00	9,293.48	16,699.05	9,627.11	184.00	166.38	-102.37	8,292.01	-771.91	1,557.63	1,212.76	344.88	4.516	
17,000.00	9,292.93	16,799.03	9,628.41	186.07	168.43	-102.43	8,391.98	-771.53	1,558.50	1,209.62	348.88	4.467	
17,100.00	9,292.39	16,899.01	9,629.71	188.14	170.49	-102.49	8,491.95	-771.15	1,559.37	1,206.48	352.89	4.419	
17,200.00	9,291.84	16,999.00	9,631.01	190.22	172.54	-102.55	8,591.93	-770.78	1,560.25	1,203.35	356.90	4.372	
17,300.00	9,291.30	17,098.98	9,632.31	192.29	174.60	-102.62	8,691.90	-770.40	1,561.12	1,200.21	360.91	4.325	
17,400.00	9,290.75	17,198.96	9,633.61	194.37	176.66	-102.68	8,791.87	-770.03	1,562.00	1,197.07	364.93	4.280	
17,500.00	9,290.20	17,298.94	9,634.91	196.45	178.73	-102.74	8,891.84	-769.65	1,562.88	1,193.94	368.94	4.236	
17,600.00	9,289.66	17,398.92	9,636.22	198.53	180.79	-102.80	8,991.82	-769.28	1,563.76	1,190.80	372.96	4.193	
17,700.00	9,289.11	17,498.90	9,637.52	200.61	182.86	-102.86	9,091.79	-768.90	1,564.64	1,187.66	376.98	4.150	
17,800.00	9,288.56	17,598.89	9,638.82	202.69	184.93	-102.93	9,191.76	-768.53	1,565.53	1,184.52	381.00	4.109	
17,900.00	9,288.02	17,698.87	9,640.12	204.78	187.00	-102.99	9,291.73	-768.15	1,566.41	1,181.39	385.03	4.068	
18,000.00	9,287.47	17,798.85	9,641.42	206.86	189.08	-103.05	9,391.71	-767.78	1,567.30	1,178.25	389.05	4.029	
18,100.00	9,286.92	17,898.83	9,642.72	208.95	191.15	-103.11	9,491.68	-767.40	1,568.19	1,175.11	393.08	3.990	
18,200.00	9,286.38	17,998.81	9,644.02	211.04	193.23	-103.17	9,591.65	-767.03	1,569.08	1,171.98	397.10	3.951	
18,300.00	9,285.83	18,098.79	9,645.32	213.13	195.31	-103.23	9,691.63	-766.65	1,569.97	1,168.84	401.13	3.914	
18,400.00	9,285.28	18,198.78	9,646.62	215.22	197.39	-103.30	9,791.60	-766.27	1,570.87	1,165.71	405.16	3.877	
18,500.00	9,284.74	18,298.76	9,647.92	217.31	199.47	-103.36	9,891.57	-765.90	1,571.77	1,162.58	409.19	3.841	
18,600.00	9,284.19	18,398.74	9,649.23	219.41	201.55	-103.42	9,991.54	-765.52	1,572.66	1,159.44	413.22	3.806	
18,700.00	9,283.64	18,498.72	9,650.53	221.50	203.64	-103.48	10,091.52	-765.15	1,573.57	1,156.31	417.25	3.771	
18,800.00	9,283.10	18,598.70	9,651.83	223.60	205.72	-103.54	10,191.49	-764.77	1,574.47	1,153.18	421.29	3.737	
18,900.00	9,282.55	18,698.69	9,653.13	225.69	207.81	-103.60	10,291.46	-764.40	1,575.37	1,150.05	425.32	3.704	
19,000.00	9,282.00	18,798.67	9,654.43	227.79	209.90	-103.66	10,391.43	-764.02	1,576.28	1,146.92	429.35	3.671	
19,100.00	9,281.46	18,898.65	9,655.73	229.89	211.99	-103.73	10,491.41	-763.65	1,577.19	1,143.80	433.39	3.639	
19,200.00	9,280.91	18,998.63	9,657.03	231.99	214.08	-103.79	10,591.38	-763.27	1,578.10	1,140.67	437.42	3.608	
19,300.00	9,280.36	19,098.61	9,658.33	234.09	216.17	-103.85	10,691.35	-762.90	1,579.01	1,137.55	441.46	3.577	
19,400.00	9,279.82	19,198.59	9,659.63	236.19	218.26	-103.91	10,791.32	-762.52	1,579.92	1,134.43	445.49	3.546	
19,500.00	9,279.27	19,298.58	9,660.94	238.29	220.36	-103.97	10,891.30	-762.14	1,580.83	1,131.31	449.53	3.517	
19,549.38	9,279.00	19,347.95	9,661.58	239.33	221.39	-104.00	10,940.67	-761.96	1,581.29	1,129.77	451.52	3.502 SF	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 27H - OH - Plan 2 11-17-16													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	9.00	0.00	0.00	-27.49	860.11	-447.60	969.65				
100.00	100.00	91.00	100.00	0.19	0.18	-27.49	860.11	-447.60	969.61	969.24	0.37	2,622.482	
200.00	200.00	191.00	200.00	0.73	0.68	-27.49	860.11	-447.60	969.61	968.19	1.41	685.635	
300.00	300.00	291.00	300.00	1.27	1.22	-27.49	860.11	-447.60	969.61	967.12	2.49	389.465	
400.00	400.00	391.00	400.00	1.81	1.76	-27.49	860.11	-447.60	969.61	966.04	3.56	271.979	
500.00	500.00	491.00	500.00	2.34	2.30	-27.49	860.11	-447.60	969.61	964.96	4.64	208.948	
600.00	600.00	591.00	600.00	2.88	2.83	-27.49	860.11	-447.60	969.61	963.89	5.72	169.635 CC	
700.00	699.98	690.98	699.98	3.41	3.37	-92.15	860.11	-447.60	969.67	962.89	6.78	142.930	
800.00	799.84	790.84	799.84	3.94	3.91	-92.45	860.11	-447.60	969.88	962.03	7.85	123.556	
900.00	899.45	890.45	899.45	4.48	4.44	-92.96	860.11	-447.60	970.29	961.37	8.92	108.748	
1,000.00	998.70	989.70	998.70	5.03	4.98	-93.66	860.11	-447.60	971.00	961.00	10.01	97.046 ES	
1,100.00	1,097.47	1,088.47	1,097.47	5.60	5.51	-94.54	860.11	-447.60	972.13	961.03	11.10	87.551	
1,200.00	1,195.78	1,186.78	1,195.78	6.19	6.04	-95.59	860.11	-447.60	973.77	961.55	12.22	79.697	
1,300.00	1,294.07	1,285.07	1,294.07	6.79	6.57	-96.65	860.11	-447.60	975.77	962.42	13.35	73.115	
1,400.00	1,392.36	1,383.36	1,392.36	7.40	7.09	-97.70	860.11	-447.60	978.11	963.63	14.48	67.543	
1,500.00	1,490.65	1,481.65	1,490.65	8.02	7.62	-98.75	860.11	-447.60	980.79	965.17	15.62	62.780	
1,600.00	1,588.93	1,566.63	1,575.62	8.64	8.07	-99.69	860.11	-448.38	984.35	967.66	16.69	58.984	
1,700.00	1,687.22	1,647.73	1,656.66	9.27	8.49	-100.68	860.12	-451.41	989.91	972.18	17.73	55.831	
1,800.00	1,785.51	1,727.82	1,736.58	9.90	8.91	-101.76	860.13	-456.66	997.60	978.83	18.77	53.158	
1,900.00	1,883.80	1,800.00	1,808.45	10.54	9.28	-102.79	860.14	-463.30	1,007.56	987.79	19.77	50.975	
2,000.00	1,982.09	1,884.58	1,892.42	11.17	9.73	-104.09	860.16	-473.38	1,019.80	998.97	20.83	48.953	
2,100.00	2,080.37	1,961.06	1,968.07	11.81	10.15	-105.32	860.19	-484.62	1,034.49	1,012.63	21.86	47.324	
2,200.00	2,178.66	2,036.17	2,042.05	12.45	10.56	-106.59	860.21	-497.63	1,051.69	1,028.81	22.88	45.961	
2,300.00	2,276.95	2,109.86	2,114.26	13.10	10.98	-107.87	860.24	-512.27	1,071.46	1,047.56	23.90	44.832	
2,400.00	2,375.24	2,200.47	2,202.79	13.74	11.50	-109.44	860.28	-531.62	1,093.14	1,068.14	25.00	43.718	
2,500.00	2,473.52	2,292.94	2,293.12	14.38	12.05	-110.99	860.32	-551.37	1,115.71	1,089.59	26.12	42.716	
2,600.00	2,571.81	2,385.41	2,383.45	15.03	12.61	-112.49	860.37	-571.13	1,139.10	1,111.87	27.23	41.827	
2,700.00	2,670.10	2,477.87	2,473.79	15.68	13.17	-113.92	860.41	-590.88	1,163.27	1,134.82	28.35	41.037	
2,800.00	2,768.39	2,570.34	2,564.12	16.32	13.75	-115.31	860.45	-610.64	1,188.17	1,158.71	29.46	40.334	
2,900.00	2,866.67	2,662.81	2,654.45	16.97	14.33	-116.64	860.49	-630.39	1,213.75	1,183.18	30.57	39.707	
3,000.00	2,964.96	2,755.28	2,744.79	17.62	14.91	-117.92	860.53	-650.14	1,239.97	1,208.30	31.67	39.148	
3,100.00	3,063.25	2,847.75	2,835.12	18.27	15.50	-119.15	860.57	-669.90	1,266.79	1,234.02	32.78	38.649	
3,200.00	3,161.54	2,940.21	2,925.45	18.92	16.10	-120.33	860.61	-689.65	1,294.18	1,260.30	33.88	38.202	
3,300.00	3,259.83	3,032.68	3,015.79	19.57	16.70	-121.47	860.65	-709.40	1,322.10	1,287.12	34.97	37.801	
3,400.00	3,358.11	3,125.15	3,106.12	20.22	17.30	-122.56	860.70	-729.16	1,350.51	1,314.44	36.07	37.442	
3,500.00	3,456.40	3,217.62	3,196.45	20.87	17.91	-123.61	860.74	-748.91	1,379.39	1,342.23	37.16	37.119	
3,600.00	3,554.69	3,310.09	3,286.78	21.52	18.52	-124.62	860.78	-768.66	1,408.71	1,370.46	38.25	36.829	
3,700.00	3,652.98	3,402.55	3,377.12	22.17	19.13	-125.60	860.82	-788.42	1,438.44	1,399.10	39.34	36.568	
3,800.00	3,751.26	3,495.02	3,467.45	22.82	19.75	-126.53	860.86	-808.17	1,468.55	1,428.13	40.42	36.332	
3,900.00	3,849.55	3,587.49	3,557.78	23.48	20.37	-127.43	860.90	-827.92	1,499.02	1,457.52	41.50	36.120	
4,000.00	3,947.84	3,679.96	3,648.12	24.13	20.99	-128.29	860.94	-847.68	1,529.84	1,487.26	42.58	35.928	
4,100.00	4,046.13	3,772.43	3,738.45	24.78	21.61	-129.13	860.98	-867.43	1,560.97	1,517.32	43.66	35.754	
4,200.00	4,144.42	3,864.89	3,828.78	25.43	22.23	-129.93	861.03	-887.18	1,592.41	1,547.68	44.73	35.598	
4,300.00	4,242.70	3,957.36	3,919.12	26.09	22.85	-130.70	861.07	-906.94	1,624.13	1,578.33	45.81	35.455	
4,400.00	4,340.99	4,049.83	4,009.45	26.74	23.48	-131.44	861.11	-926.69	1,656.12	1,609.24	46.88	35.327	
4,500.00	4,439.28	4,142.30	4,099.78	27.39	24.11	-132.16	861.15	-946.45	1,688.36	1,640.41	47.95	35.210	
4,600.00	4,537.57	4,234.76	4,190.12	28.05	24.74	-132.85	861.19	-966.20	1,720.84	1,671.82	49.02	35.104	
4,700.00	4,635.85	4,327.23	4,280.45	28.70	25.37	-133.51	861.23	-985.95	1,753.55	1,703.46	50.09	35.008	
4,800.00	4,734.14	4,419.70	4,370.78	29.35	26.00	-134.16	861.27	-1,005.71	1,786.47	1,735.31	51.16	34.921	
4,900.00	4,832.43	4,512.17	4,461.12	30.01	26.63	-134.77	861.31	-1,025.46	1,819.59	1,767.36	52.22	34.841	
5,000.00	4,930.72	4,604.64	4,551.45	30.66	27.26	-135.37	861.36	-1,045.21	1,852.90	1,799.61	53.29	34.769	
5,100.00	5,029.01	4,697.10	4,641.78	31.31	27.90	-135.95	861.40	-1,064.97	1,886.39	1,832.03	54.36	34.704	

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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 27H - OH - Plan 2 11-17-16													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)						
5,200.00	5,127.29	4,789.57	4,732.12	31.97	28.53	-136.51	861.44	-1,084.72	1,920.05	1,864.63	55.42	34.644		
5,300.00	5,225.58	4,882.04	4,822.45	32.62	29.17	-137.05	861.48	-1,104.47	1,953.87	1,897.38	56.49	34.590		
5,400.00	5,323.87	4,974.51	4,912.78	33.27	29.80	-137.57	861.52	-1,124.23	1,987.85	1,930.30	57.55	34.540		
5,500.00	5,422.16	5,066.98	5,003.12	33.93	30.44	-138.08	861.56	-1,143.98	2,021.97	1,963.35	58.62	34.496		
5,600.00	5,520.52	5,159.60	5,093.60	34.58	31.08	-138.79	861.60	-1,163.77	2,055.93	1,996.19	59.75	34.412		
5,700.00	5,619.38	5,253.28	5,185.12	35.19	31.72	-139.64	861.64	-1,183.78	2,087.85	2,026.93	60.93	34.269		
5,800.00	5,718.71	5,348.09	5,277.74	35.77	32.38	-140.38	861.69	-1,204.03	2,117.32	2,055.24	62.08	34.107		
5,900.00	5,818.37	5,443.90	5,371.34	36.31	33.04	-141.00	861.73	-1,224.50	2,144.27	2,081.07	63.20	33.930		
6,000.00	5,918.26	5,540.80	5,465.80	36.82	33.71	-141.52	861.77	-1,245.16	2,168.62	2,104.35	64.28	33.739		
6,100.00	6,018.25	5,638.05	5,561.01	37.28	34.38	-77.33	861.82	-1,265.98	2,190.39	2,124.98	65.41	33.486		
6,200.00	6,118.25	5,735.74	5,656.45	37.74	35.06	-77.45	861.86	-1,286.85	2,211.27	2,144.83	66.44	33.282		
6,300.00	6,218.25	5,833.43	5,751.88	38.19	35.73	-77.57	861.90	-1,307.72	2,232.16	2,164.69	67.47	33.084		
6,400.00	6,318.25	5,931.13	5,847.32	38.65	36.41	-77.69	861.95	-1,328.59	2,253.05	2,184.55	68.50	32.891		
6,500.00	6,418.25	6,028.82	5,942.76	39.11	37.09	-77.80	861.99	-1,349.46	2,273.96	2,204.43	69.53	32.703		
6,600.00	6,518.25	6,126.51	6,038.19	39.57	37.77	-77.91	862.03	-1,370.33	2,294.87	2,224.31	70.57	32.520		
6,700.00	6,618.25	6,224.20	6,133.63	40.04	38.45	-78.02	862.08	-1,391.20	2,315.80	2,244.19	71.61	32.341		
6,800.00	6,718.25	6,321.89	6,229.07	40.51	39.12	-78.13	862.12	-1,412.06	2,336.73	2,264.08	72.64	32.167		
6,900.00	6,818.25	6,419.58	6,324.50	40.97	39.80	-78.23	862.16	-1,432.93	2,357.67	2,283.98	73.68	31.997		
7,000.00	6,918.25	6,517.28	6,419.94	41.44	40.48	-78.34	862.21	-1,453.80	2,378.61	2,303.89	74.73	31.831		
7,100.00	7,018.25	6,614.97	6,515.37	41.91	41.16	-78.44	862.25	-1,474.67	2,399.57	2,323.80	75.77	31.669		
7,200.00	7,118.25	6,712.66	6,610.81	42.39	41.84	-78.54	862.30	-1,495.54	2,420.53	2,343.71	76.82	31.511		
7,300.00	7,218.25	6,810.35	6,706.25	42.86	42.52	-78.64	862.34	-1,516.41	2,441.49	2,363.63	77.86	31.357		
7,400.00	7,318.25	6,908.04	6,801.68	43.34	43.20	-78.74	862.38	-1,537.28	2,462.47	2,383.56	78.91	31.206		
7,500.00	7,418.25	7,005.73	6,897.12	43.81	43.88	-78.83	862.43	-1,558.15	2,483.45	2,403.49	79.96	31.059		
7,600.00	7,518.25	7,103.42	6,992.56	44.29	44.56	-78.92	862.47	-1,579.02	2,504.44	2,423.43	81.01	30.915		
7,700.00	7,618.25	7,201.12	7,087.99	44.77	45.25	-79.02	862.51	-1,599.89	2,525.43	2,443.37	82.06	30.775		
7,800.00	7,718.25	7,298.81	7,183.43	45.25	45.93	-79.11	862.56	-1,620.76	2,546.43	2,463.32	83.11	30.638		
7,900.00	7,818.25	7,396.50	7,278.87	45.74	46.61	-79.20	862.60	-1,641.63	2,567.44	2,483.27	84.17	30.503		
8,000.00	7,918.25	7,494.19	7,374.30	46.22	47.29	-79.28	862.64	-1,662.50	2,588.45	2,503.22	85.22	30.372		
8,100.00	8,018.25	7,591.88	7,469.74	46.70	47.97	-79.37	862.69	-1,683.37	2,609.47	2,523.18	86.28	30.244		
8,200.00	8,118.25	7,689.57	7,565.17	47.19	48.65	-79.45	862.73	-1,704.24	2,630.49	2,543.15	87.34	30.118		
8,300.00	8,218.25	7,787.27	7,660.61	47.68	49.34	-79.54	862.77	-1,725.11	2,651.52	2,563.12	88.40	29.995		
8,400.00	8,318.25	7,884.96	7,756.05	48.17	50.02	-79.62	862.82	-1,745.98	2,672.55	2,583.09	89.46	29.875		
8,500.00	8,418.25	7,982.65	7,851.48	48.66	50.70	-79.70	862.86	-1,766.85	2,693.59	2,603.07	90.52	29.758		
8,600.00	8,518.25	8,080.34	7,946.92	49.15	51.38	-79.78	862.91	-1,787.72	2,714.63	2,623.05	91.58	29.642		
8,700.00	8,618.25	8,178.02	8,042.35	49.64	52.07	-79.86	862.95	-1,808.58	2,735.55	2,642.92	92.63	29.533		
8,800.00	8,717.19	8,274.74	8,136.83	50.16	52.74	-76.85	862.99	-1,829.24	2,753.87	2,659.98	93.90	29.328		
8,900.00	8,812.27	8,367.75	8,227.70	50.70	53.39	-76.06	863.03	-1,849.11	2,768.55	2,673.62	94.92	29.166		
9,000.00	8,900.60	8,454.24	8,312.18	51.24	54.00	-75.85	863.07	-1,867.59	2,779.69	2,683.99	95.70	29.045		
9,100.00	8,979.50	8,531.56	8,387.73	51.77	54.54	-76.07	863.11	-1,884.11	2,787.73	2,691.41	96.32	28.942		
9,200.00	9,046.57	8,597.38	8,452.03	52.30	55.00	-76.54	863.14	-1,898.17	2,793.30	2,696.41	96.89	28.830		
9,300.00	9,099.76	8,649.70	8,503.13	52.84	55.36	-77.08	863.16	-1,909.34	2,797.12	2,699.65	97.46	28.699		
9,400.00	9,137.47	8,686.91	8,539.49	53.42	55.62	-77.52	863.18	-1,917.30	2,799.87	2,701.83	98.04	28.557		
9,500.00	9,158.55	8,707.90	8,559.99	54.06	55.77	-77.72	863.19	-1,921.78	2,802.10	2,703.51	98.59	28.422		
9,600.00	9,163.48	8,713.12	8,565.09	54.74	55.81	-77.70	863.19	-1,922.89	2,804.35	2,705.19	99.16	28.281		
9,700.00	9,164.82	8,734.45	8,585.94	55.50	55.95	-78.13	863.20	-1,927.38	2,809.38	2,709.20	100.18	28.043		
9,800.00	9,166.16	8,807.52	8,657.62	56.34	56.45	-79.63	863.23	-1,941.58	2,817.92	2,716.07	101.85	27.667		
9,900.00	9,167.50	8,900.00	8,748.82	57.25	57.04	-81.52	863.26	-1,956.92	2,829.94	2,726.21	103.72	27.283		
10,000.00	9,168.84	8,943.37	8,791.75	58.24	57.30	-82.40	863.27	-1,963.09	2,845.37	2,740.24	105.13	27.064		
10,100.00	9,170.18	9,006.49	8,854.38	59.28	57.67	-83.69	863.29	-1,970.92	2,864.18	2,757.43	106.76	26.829		
10,200.00	9,171.52	9,066.63	8,914.19	60.39	58.01	-84.92	863.30	-1,977.09	2,886.31	2,777.93	108.37	26.633		
10,300.00	9,172.86	10,604.21	9,903.00	61.56	63.53	-104.61	1,659.32	-1,997.26	2,892.99	2,780.00	112.99	25.604		

CC - Min centre to center distance or covergent 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 27H - OH - Plan 2 11-17-16													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	
10,400.00	9,174.20	10,704.21	9,903.77	62.78	64.01	-104.61	1,759.31	-1,998.26	2,892.17	2,777.31	114.86	25.180	
10,500.00	9,175.54	10,804.20	9,904.54	64.05	64.58	-104.60	1,859.30	-1,999.26	2,891.35	2,774.50	116.85	24.743	
10,600.00	9,176.88	10,904.20	9,905.31	65.37	65.22	-104.59	1,959.28	-2,000.26	2,890.53	2,771.56	118.96	24.298	
10,700.00	9,178.22	11,004.19	9,906.08	66.73	65.95	-104.58	2,059.27	-2,001.26	2,889.70	2,768.52	121.18	23.846	
10,800.00	9,179.56	11,104.19	9,906.84	68.14	66.74	-104.58	2,159.26	-2,002.26	2,888.88	2,765.38	123.50	23.391	
10,900.00	9,180.91	11,204.19	9,907.61	69.58	67.61	-104.57	2,259.25	-2,003.26	2,888.06	2,762.13	125.93	22.935	
11,000.00	9,182.25	11,304.18	9,908.38	71.06	68.54	-104.56	2,359.24	-2,004.26	2,887.24	2,758.79	128.44	22.479	
11,100.00	9,183.59	11,404.18	9,909.15	72.58	69.54	-104.55	2,459.22	-2,005.26	2,886.41	2,755.37	131.05	22.026	
11,200.00	9,184.93	11,504.17	9,909.91	74.13	70.59	-104.55	2,559.21	-2,006.26	2,885.59	2,751.85	133.74	21.577	
11,300.00	9,186.27	11,604.17	9,910.68	75.70	71.70	-104.54	2,659.20	-2,007.26	2,884.77	2,748.26	136.51	21.133	
11,400.00	9,187.61	11,704.16	9,911.45	77.31	72.86	-104.53	2,759.19	-2,008.26	2,883.95	2,744.60	139.35	20.696	
11,500.00	9,188.95	11,804.16	9,912.22	78.94	74.08	-104.52	2,859.18	-2,009.26	2,883.12	2,740.87	142.26	20.267	
11,600.00	9,190.29	11,904.16	9,912.99	80.60	75.33	-104.52	2,959.16	-2,010.26	2,882.30	2,737.07	145.24	19.845	
11,700.00	9,191.63	12,004.15	9,913.75	82.28	76.63	-104.51	3,059.15	-2,011.26	2,881.48	2,733.20	148.28	19.433	
11,800.00	9,192.97	12,104.15	9,914.52	83.99	77.98	-104.50	3,159.14	-2,012.26	2,880.66	2,729.28	151.38	19.030	
11,900.00	9,194.31	12,204.14	9,915.29	85.71	79.36	-104.49	3,259.13	-2,013.26	2,879.84	2,725.31	154.53	18.636	
12,000.00	9,195.65	12,304.14	9,916.06	87.46	80.77	-104.49	3,359.12	-2,014.26	2,879.02	2,721.28	157.73	18.252	
12,100.00	9,196.99	12,404.14	9,916.83	89.22	82.22	-104.48	3,459.10	-2,015.26	2,878.19	2,717.21	160.99	17.879	
12,200.00	9,198.33	12,504.13	9,917.59	91.00	83.70	-104.47	3,559.09	-2,016.26	2,877.37	2,713.09	164.28	17.515	
12,300.00	9,199.68	12,604.13	9,918.36	92.79	85.21	-104.46	3,659.08	-2,017.26	2,876.55	2,708.92	167.63	17.161	
12,400.00	9,201.02	12,704.12	9,919.13	94.61	86.75	-104.46	3,759.07	-2,018.26	2,875.73	2,704.72	171.01	16.816	
12,500.00	9,202.36	12,804.12	9,919.90	96.43	88.32	-104.45	3,859.06	-2,019.26	2,874.91	2,700.48	174.43	16.482	
12,600.00	9,203.70	12,904.12	9,920.67	98.27	89.91	-104.44	3,959.04	-2,020.26	2,874.08	2,696.20	177.88	16.157	
12,700.00	9,205.04	13,004.11	9,921.43	100.12	91.53	-104.43	4,059.03	-2,021.26	2,873.26	2,691.89	181.37	15.842	
12,800.00	9,206.38	13,104.11	9,922.20	101.99	93.16	-104.43	4,159.02	-2,022.26	2,872.44	2,687.55	184.89	15.536	
12,900.00	9,207.72	13,204.10	9,922.97	103.87	94.82	-104.42	4,259.01	-2,023.26	2,871.62	2,683.18	188.44	15.239	
13,000.00	9,209.06	13,304.10	9,923.74	105.75	96.50	-104.41	4,359.00	-2,024.26	2,870.80	2,678.78	192.02	14.950	
13,100.00	9,210.40	13,404.09	9,924.50	107.65	98.20	-104.40	4,458.98	-2,025.26	2,869.98	2,674.35	195.63	14.671	
13,200.00	9,211.74	13,504.09	9,925.27	109.56	99.92	-104.40	4,558.97	-2,026.26	2,869.16	2,669.90	199.26	14.399	
13,300.00	9,213.08	13,604.09	9,926.04	111.48	101.65	-104.39	4,658.96	-2,027.26	2,868.34	2,665.42	202.91	14.136	
13,400.00	9,214.42	13,704.08	9,926.81	113.40	103.40	-104.38	4,758.95	-2,028.26	2,867.51	2,660.92	206.59	13.880	
13,500.00	9,215.76	13,804.08	9,927.58	115.34	105.17	-104.37	4,858.94	-2,029.26	2,866.69	2,656.40	210.29	13.632	
13,600.00	9,217.10	13,904.07	9,928.34	117.28	106.95	-104.36	4,958.92	-2,030.26	2,865.87	2,651.86	214.01	13.391	
13,700.00	9,218.45	14,004.07	9,929.11	119.23	108.74	-104.36	5,058.91	-2,031.26	2,865.05	2,647.30	217.75	13.157	
13,800.00	9,219.79	14,104.07	9,929.88	121.19	110.55	-104.35	5,158.90	-2,032.26	2,864.23	2,642.72	221.51	12.931	
13,900.00	9,221.13	14,204.06	9,930.65	123.15	112.36	-104.34	5,258.89	-2,033.26	2,863.41	2,638.13	225.28	12.710	
14,000.00	9,222.47	14,304.06	9,931.42	125.12	114.20	-104.33	5,358.88	-2,034.26	2,862.59	2,633.51	229.08	12.496	
14,100.00	9,223.81	14,404.05	9,932.18	127.10	116.04	-104.33	5,458.86	-2,035.26	2,861.77	2,628.89	232.88	12.288	
14,200.00	9,225.15	14,504.05	9,932.95	129.08	117.89	-104.32	5,558.85	-2,036.26	2,860.95	2,624.24	236.70	12.087	
14,300.00	9,226.49	14,604.05	9,933.72	131.07	119.76	-104.31	5,658.84	-2,037.26	2,860.13	2,619.59	240.54	11.890	
14,400.00	9,227.83	14,704.04	9,934.49	133.06	121.63	-104.30	5,758.83	-2,038.26	2,859.31	2,614.91	244.39	11.700	
14,500.00	9,229.17	14,804.04	9,935.26	135.06	123.51	-104.30	5,858.82	-2,039.26	2,858.48	2,610.23	248.25	11.514	
14,600.00	9,230.51	14,904.03	9,936.02	137.06	125.40	-104.29	5,958.80	-2,040.26	2,857.66	2,605.56	252.05	11.338	
14,686.67	9,233.15	15,020.24	9,937.95	138.80	127.60	-104.29	6,074.99	-2,040.27	2,857.50	2,601.66	255.84	11.169	
14,700.00	9,233.89	15,033.56	9,938.21	139.07	127.85	-104.28	6,088.31	-2,040.22	2,857.73	2,601.40	256.34	11.148	
14,800.00	9,237.56	15,133.55	9,940.21	141.08	129.75	-104.25	6,188.27	-2,039.84	2,857.86	2,597.61	260.25	10.981	
14,900.00	9,241.22	15,233.53	9,942.21	143.09	131.66	-104.21	6,288.24	-2,039.46	2,857.99	2,593.82	264.17	10.819	
15,000.00	9,244.89	15,333.52	9,944.21	145.11	133.58	-104.18	6,388.20	-2,039.08	2,858.12	2,590.02	268.10	10.661	
15,100.00	9,248.55	15,433.50	9,946.20	147.13	135.50	-104.14	6,488.17	-2,038.70	2,858.26	2,586.21	272.05	10.506	
15,200.00	9,252.22	15,533.48	9,948.20	149.16	137.43	-104.11	6,588.13	-2,038.32	2,858.39	2,582.39	276.00	10.357	
15,300.00	9,255.88	15,633.47	9,950.20	151.18	139.36	-104.07	6,688.09	-2,037.94	2,858.53	2,578.56	279.96	10.210	
15,400.00	9,259.55	15,733.45	9,952.20	153.22	141.30	-104.03	6,788.06	-2,037.56	2,858.66	2,574.73	283.93	10.068	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 27H - OH - Plan 2 11-17-16													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	
15,500.00	9,263.21	15,833.44	9,954.20	155.25	143.25	-104.00	6,888.02	-2,037.18	2,858.80	2,570.89	287.91	9.929	
15,600.00	9,266.88	15,933.42	9,956.20	157.29	145.21	-103.96	6,987.98	-2,036.80	2,858.94	2,567.04	291.90	9.794	
15,700.00	9,270.54	16,033.41	9,958.19	159.33	147.16	-103.93	7,087.95	-2,036.42	2,859.07	2,563.18	295.90	9.662	
15,800.00	9,274.21	16,133.39	9,960.19	161.37	149.13	-103.89	7,187.91	-2,036.04	2,859.21	2,559.32	299.90	9.534	
15,900.00	9,277.87	16,233.38	9,962.19	163.42	151.10	-103.86	7,287.88	-2,035.66	2,859.35	2,555.45	303.91	9.409	
16,000.00	9,281.54	16,333.36	9,964.19	165.47	153.07	-103.82	7,387.84	-2,035.28	2,859.50	2,551.57	307.93	9.286	
16,100.00	9,285.20	16,433.35	9,966.19	167.52	155.05	-103.79	7,487.80	-2,034.90	2,859.64	2,547.69	311.95	9.167	
16,200.00	9,288.87	16,533.33	9,968.19	169.57	157.04	-103.75	7,587.77	-2,034.52	2,859.78	2,543.80	315.98	9.050	
16,300.00	9,292.53	16,633.31	9,970.18	171.63	159.02	-103.72	7,687.73	-2,034.14	2,859.93	2,539.91	320.02	8.937	
16,400.00	9,295.57	16,733.31	9,972.18	173.68	161.02	-103.69	7,787.70	-2,033.76	2,860.21	2,536.23	323.98	8.828	
16,500.00	9,295.67	16,833.28	9,974.18	175.74	163.01	-103.72	7,887.66	-2,033.38	2,861.14	2,533.26	327.89	8.726	
16,600.00	9,295.12	16,933.25	9,976.18	177.80	165.01	-103.76	7,987.61	-2,033.00	2,862.21	2,530.36	331.85	8.625	
16,700.00	9,294.57	17,033.22	9,978.18	179.87	167.02	-103.81	8,087.55	-2,032.62	2,863.28	2,527.47	335.82	8.526	
16,800.00	9,294.03	17,133.18	9,980.18	181.93	169.03	-103.86	8,187.50	-2,032.24	2,864.36	2,524.57	339.79	8.430	
16,900.00	9,293.48	17,233.15	9,982.17	184.00	171.04	-103.90	8,287.44	-2,031.86	2,865.43	2,521.67	343.76	8.336	
17,000.00	9,292.93	17,333.12	9,984.17	186.07	173.05	-103.95	8,387.39	-2,031.48	2,866.51	2,518.77	347.74	8.243	
17,100.00	9,292.39	17,433.08	9,986.17	188.14	175.07	-104.00	8,487.33	-2,031.10	2,867.59	2,515.87	351.72	8.153	
17,200.00	9,291.84	17,533.05	9,988.17	190.22	177.09	-104.05	8,587.28	-2,030.72	2,868.67	2,512.97	355.71	8.065	
17,300.00	9,291.30	17,633.02	9,990.16	192.29	179.11	-104.09	8,687.23	-2,030.34	2,869.76	2,510.06	359.69	7.978	
17,400.00	9,290.75	17,732.98	9,992.16	194.37	181.14	-104.14	8,787.17	-2,029.96	2,870.84	2,507.16	363.68	7.894	
17,500.00	9,290.20	17,832.95	9,994.16	196.45	183.17	-104.19	8,887.12	-2,029.58	2,871.93	2,504.26	367.68	7.811	
17,600.00	9,289.66	17,932.91	9,996.16	198.53	185.20	-104.23	8,987.06	-2,029.20	2,873.02	2,501.35	371.67	7.730	
17,700.00	9,289.11	18,032.88	9,998.16	200.61	187.24	-104.28	9,087.01	-2,028.82	2,874.11	2,498.45	375.67	7.651	
17,800.00	9,288.56	18,132.85	10,000.15	202.69	189.28	-104.33	9,186.95	-2,028.44	2,875.21	2,495.54	379.67	7.573	
17,900.00	9,288.02	18,232.81	10,002.15	204.78	191.32	-104.37	9,286.90	-2,028.06	2,876.30	2,492.63	383.67	7.497	
18,000.00	9,287.47	18,332.78	10,004.15	206.86	193.36	-104.42	9,386.85	-2,027.68	2,877.40	2,489.73	387.67	7.422	
18,100.00	9,286.92	18,432.75	10,006.15	208.95	195.40	-104.47	9,486.79	-2,027.30	2,878.50	2,486.82	391.68	7.349	
18,200.00	9,286.38	18,532.71	10,008.15	211.04	197.45	-104.51	9,586.74	-2,026.92	2,879.60	2,483.92	395.68	7.278	
18,300.00	9,285.83	18,632.68	10,010.14	213.13	199.50	-104.56	9,686.68	-2,026.54	2,880.70	2,481.01	399.69	7.207	
18,400.00	9,285.28	18,732.65	10,012.14	215.22	201.55	-104.61	9,786.63	-2,026.16	2,881.81	2,478.10	403.70	7.138	
18,500.00	9,284.74	18,832.61	10,014.14	217.31	203.61	-104.65	9,886.57	-2,025.78	2,882.91	2,475.20	407.71	7.071	
18,600.00	9,284.19	18,932.58	10,016.14	219.41	205.66	-104.70	9,986.52	-2,025.40	2,884.02	2,472.30	411.73	7.005	
18,700.00	9,283.64	19,032.55	10,018.14	221.50	207.72	-104.75	10,086.47	-2,025.02	2,885.13	2,469.39	415.74	6.940	
18,800.00	9,283.10	19,132.51	10,020.13	223.60	209.78	-104.79	10,186.41	-2,024.64	2,886.25	2,466.49	419.76	6.876	
18,900.00	9,282.55	19,232.48	10,022.13	225.69	211.84	-104.84	10,286.36	-2,024.26	2,887.36	2,463.59	423.77	6.813	
19,000.00	9,282.00	19,332.44	10,024.13	227.79	213.90	-104.89	10,386.30	-2,023.88	2,888.48	2,460.69	427.79	6.752	
19,100.00	9,281.46	19,432.41	10,026.13	229.89	215.97	-104.93	10,486.25	-2,023.50	2,889.59	2,457.78	431.81	6.692	
19,200.00	9,280.91	19,532.38	10,028.13	231.99	218.03	-104.98	10,586.20	-2,023.12	2,890.72	2,454.89	435.83	6.633	
19,300.00	9,280.36	19,632.34	10,030.12	234.09	220.10	-105.02	10,686.14	-2,022.74	2,891.84	2,451.99	439.85	6.575	
19,400.00	9,279.82	19,732.31	10,032.12	236.19	222.17	-105.07	10,786.09	-2,022.36	2,892.96	2,449.09	443.87	6.518	
19,500.00	9,279.27	19,832.28	10,034.12	238.29	224.24	-105.12	10,886.03	-2,021.98	2,894.09	2,446.19	447.89	6.462	
19,549.38	9,279.00	19,881.64	10,035.11	239.33	225.27	-105.14	10,935.39	-2,021.80	2,894.64	2,444.76	449.88	6.434 SF	

CC - Min centre to center distance or covergent 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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 28H - OH - Plan 2 11-17-16												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	9.00	0.00	0.00	-28.19	835.11	-447.60	947.54				
100.00	100.00	91.00	100.00	0.19	0.18	-28.19	835.11	-447.60	947.50	947.13	0.37	2,562.691	
200.00	200.00	191.00	200.00	0.73	0.68	-28.19	835.11	-447.60	947.50	946.08	1.41	670.003	
300.00	300.00	291.00	300.00	1.27	1.22	-28.19	835.11	-447.60	947.50	945.01	2.49	380.585	
400.00	400.00	391.00	400.00	1.81	1.76	-28.19	835.11	-447.60	947.50	943.93	3.56	265.778	
500.00	500.00	491.00	500.00	2.34	2.30	-28.19	835.11	-447.60	947.50	942.86	4.64	204.184	
600.00	600.00	591.00	600.00	2.88	2.83	-28.19	835.11	-447.60	947.50	941.78	5.72	165.768 CC	
700.00	699.98	690.98	699.98	3.41	3.37	-92.85	835.11	-447.60	947.58	940.80	6.78	139.675	
800.00	799.84	790.84	799.84	3.94	3.91	-93.16	835.11	-447.60	947.86	940.01	7.85	120.751	
900.00	899.45	890.45	899.45	4.48	4.44	-93.67	835.11	-447.60	948.38	939.46	8.92	106.293	
1,000.00	998.70	989.70	998.70	5.03	4.98	-94.38	835.11	-447.60	949.24	939.24	10.01	94.873 ES	
1,100.00	1,097.47	1,088.47	1,097.47	5.60	5.51	-95.29	835.11	-447.60	950.58	939.48	11.10	85.613	
1,200.00	1,195.78	1,186.78	1,195.78	6.19	6.04	-96.35	835.11	-447.60	952.46	940.24	12.22	77.957	
1,300.00	1,294.07	1,285.07	1,294.07	6.79	6.57	-97.43	835.11	-447.60	954.71	941.36	13.34	71.543	
1,400.00	1,392.36	1,383.36	1,392.36	7.40	7.09	-98.51	835.11	-447.60	957.31	942.83	14.48	66.115	
1,500.00	1,490.65	1,481.65	1,490.65	8.02	7.62	-99.58	835.11	-447.60	960.25	944.63	15.62	61.475	
1,600.00	1,588.93	1,566.74	1,575.73	8.64	8.07	-100.53	835.10	-448.38	964.09	947.40	16.69	57.778	
1,700.00	1,687.22	1,647.97	1,656.91	9.27	8.49	-101.55	835.09	-451.42	969.95	952.22	17.73	54.714	
1,800.00	1,785.51	1,728.19	1,736.95	9.90	8.91	-102.64	835.06	-456.69	977.97	959.21	18.76	52.121	
1,900.00	1,883.80	1,800.00	1,808.45	10.54	9.28	-103.69	835.03	-463.30	988.29	968.53	19.76	50.017	
2,000.00	1,982.09	1,885.17	1,893.01	11.17	9.74	-105.02	834.97	-473.46	1,000.91	980.08	20.83	48.058	
2,100.00	2,080.37	1,961.76	1,968.76	11.81	10.15	-106.27	834.92	-484.74	1,016.01	994.16	21.85	46.492	
2,200.00	2,178.66	2,047.05	2,052.81	12.45	10.62	-107.71	834.84	-499.25	1,033.41	1,010.48	22.93	45.074	
2,300.00	2,276.95	2,140.98	2,145.33	13.10	11.15	-109.26	834.76	-515.47	1,051.81	1,027.77	24.04	43.748	
2,400.00	2,375.24	2,234.91	2,237.85	13.74	11.68	-110.75	834.67	-531.70	1,071.00	1,045.84	25.16	42.569	
2,500.00	2,473.52	2,328.84	2,330.36	14.38	12.22	-112.20	834.59	-547.92	1,090.93	1,064.66	26.28	41.518	
2,600.00	2,571.81	2,422.77	2,422.88	15.03	12.77	-113.60	834.51	-564.15	1,111.56	1,084.17	27.39	40.581	
2,700.00	2,670.10	2,516.70	2,515.40	15.68	13.32	-114.95	834.42	-580.37	1,132.86	1,104.35	28.50	39.742	
2,800.00	2,768.39	2,610.63	2,607.92	16.32	13.88	-116.26	834.34	-596.60	1,154.78	1,125.17	29.62	38.991	
2,900.00	2,866.67	2,704.56	2,700.43	16.97	14.44	-117.52	834.25	-612.82	1,177.30	1,146.57	30.73	38.316	
3,000.00	2,964.96	2,798.49	2,792.95	17.62	15.01	-118.73	834.17	-629.04	1,200.37	1,168.54	31.83	37.709	
3,100.00	3,063.25	2,892.42	2,885.47	18.27	15.58	-119.90	834.09	-645.27	1,223.97	1,191.03	32.94	37.161	
3,200.00	3,161.54	2,986.35	2,977.99	18.92	16.15	-121.03	834.00	-661.49	1,248.07	1,214.03	34.04	36.666	
3,300.00	3,259.83	3,080.28	3,070.50	19.57	16.73	-122.12	833.92	-677.72	1,272.64	1,237.50	35.14	36.219	
3,400.00	3,358.11	3,174.20	3,163.02	20.22	17.30	-123.17	833.83	-693.94	1,297.64	1,261.41	36.23	35.813	
3,500.00	3,456.40	3,268.13	3,255.54	20.87	17.88	-124.18	833.75	-710.16	1,323.07	1,285.74	37.33	35.445	
3,600.00	3,554.69	3,362.06	3,348.06	21.52	18.46	-125.16	833.67	-726.39	1,348.89	1,310.47	38.42	35.111	
3,700.00	3,652.98	3,455.99	3,440.57	22.17	19.05	-126.10	833.58	-742.61	1,375.08	1,335.57	39.51	34.806	
3,800.00	3,751.26	3,549.92	3,533.09	22.82	19.63	-127.00	833.50	-758.84	1,401.62	1,361.03	40.59	34.528	
3,900.00	3,849.55	3,643.85	3,625.61	23.48	20.22	-127.88	833.41	-775.06	1,428.49	1,386.81	41.68	34.274	
4,000.00	3,947.84	3,737.78	3,718.13	24.13	20.80	-128.72	833.33	-791.29	1,455.68	1,412.92	42.76	34.042	
4,100.00	4,046.13	3,831.71	3,810.64	24.78	21.39	-129.53	833.25	-807.51	1,483.16	1,439.32	43.84	33.829	
4,200.00	4,144.42	3,925.64	3,903.16	25.43	21.98	-130.32	833.16	-823.73	1,510.92	1,466.00	44.92	33.634	
4,300.00	4,242.70	4,019.57	3,995.68	26.09	22.57	-131.08	833.08	-839.96	1,538.94	1,492.94	46.00	33.455	
4,400.00	4,340.99	4,113.50	4,088.20	26.74	23.16	-131.81	832.99	-856.18	1,567.22	1,520.14	47.08	33.291	
4,500.00	4,439.28	4,207.43	4,180.71	27.39	23.76	-132.52	832.91	-872.41	1,595.73	1,547.58	48.15	33.140	
4,600.00	4,537.57	4,301.36	4,273.23	28.05	24.35	-133.20	832.83	-888.63	1,624.46	1,575.24	49.23	33.000	
4,700.00	4,635.85	4,395.29	4,365.75	28.70	24.94	-133.86	832.74	-904.85	1,653.41	1,603.11	50.30	32.871	
4,800.00	4,734.14	4,489.22	4,458.27	29.35	25.54	-134.50	832.66	-921.08	1,682.56	1,631.19	51.37	32.753	
4,900.00	4,832.43	4,583.15	4,550.78	30.01	26.13	-135.12	832.57	-937.30	1,711.90	1,659.46	52.44	32.643	
5,000.00	4,930.72	4,677.07	4,643.30	30.66	26.73	-135.71	832.49	-953.53	1,741.43	1,687.91	53.51	32.541	
5,100.00	5,029.01	4,771.00	4,735.82	31.31	27.33	-136.29	832.41	-969.75	1,771.12	1,716.54	54.58	32.447	

CC - Min centre to center distance or covergent 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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 28H - OH - Plan 2 11-17-16													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HODGM													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	
5,200.00	5,127.29	4,864.93	4,828.34	31.97	27.92	-136.85	832.32	-985.97	1,800.98	1,745.33	55.65	32.360	
5,300.00	5,225.58	4,958.86	4,920.86	32.62	28.52	-137.39	832.24	-1,002.20	1,831.00	1,774.27	56.72	32.279	
5,400.00	5,323.87	5,052.79	5,013.37	33.27	29.12	-137.92	832.15	-1,018.42	1,861.16	1,803.37	57.79	32.204	
5,500.00	5,422.16	5,146.72	5,105.89	33.93	29.72	-138.42	832.07	-1,034.65	1,891.47	1,832.60	58.86	32.134	
5,600.00	5,520.52	5,240.79	5,198.54	34.58	30.32	-139.11	831.99	-1,050.90	1,921.60	1,861.61	60.00	32.029	
5,700.00	5,619.38	5,335.82	5,292.14	35.19	30.93	-139.90	831.90	-1,067.31	1,949.65	1,888.47	61.18	31.869	
5,800.00	5,718.71	5,431.84	5,386.73	35.77	31.54	-140.58	831.82	-1,083.90	1,975.20	1,912.88	62.33	31.692	
5,900.00	5,818.37	5,528.75	5,482.18	36.31	32.16	-141.14	831.73	-1,100.63	1,998.19	1,934.76	63.43	31.500	
6,000.00	5,918.26	5,629.05	5,579.99	36.82	33.62	-141.78	831.55	-1,134.69	2,016.25	1,950.99	65.26	30.894	
6,100.00	6,018.25	6,067.81	6,018.25	37.28	35.19	-77.45	831.48	-1,149.30	2,021.65	1,954.23	67.41	29.988	
6,200.00	6,118.25	6,167.81	6,118.25	37.74	35.67	-77.45	831.48	-1,149.30	2,021.65	1,953.25	68.39	29.559	
6,300.00	6,218.25	6,267.81	6,218.25	38.19	36.14	-77.45	831.48	-1,149.30	2,021.65	1,952.27	69.38	29.140	
6,400.00	6,318.25	6,367.81	6,318.25	38.65	36.62	-77.45	831.48	-1,149.30	2,021.65	1,951.28	70.36	28.732	
6,500.00	6,418.25	6,467.81	6,418.25	39.11	37.10	-77.45	831.48	-1,149.30	2,021.65	1,950.30	71.35	28.334	
6,600.00	6,518.25	6,567.81	6,518.25	39.57	37.59	-77.45	831.48	-1,149.30	2,021.65	1,949.31	72.34	27.946	
6,700.00	6,618.25	6,667.81	6,618.25	40.04	38.07	-77.45	831.48	-1,149.30	2,021.65	1,948.31	73.33	27.568	
6,800.00	6,718.25	6,767.81	6,718.25	40.51	38.55	-77.45	831.48	-1,149.30	2,021.65	1,947.32	74.33	27.198	
6,900.00	6,818.25	6,867.81	6,818.25	40.97	39.04	-77.45	831.48	-1,149.30	2,021.65	1,946.32	75.33	26.838	
7,000.00	6,918.25	6,967.81	6,918.25	41.44	39.53	-77.45	831.48	-1,149.30	2,021.65	1,945.32	76.33	26.487	
7,100.00	7,018.25	7,067.81	7,018.25	41.91	40.02	-77.45	831.48	-1,149.30	2,021.65	1,944.32	77.33	26.144	
7,200.00	7,118.25	7,167.81	7,118.25	42.39	40.51	-77.45	831.48	-1,149.30	2,021.65	1,943.32	78.33	25.809	
7,300.00	7,218.25	7,267.81	7,218.25	42.86	41.00	-77.45	831.48	-1,149.30	2,021.65	1,942.31	79.34	25.482	
7,400.00	7,318.25	7,367.81	7,318.25	43.34	41.49	-77.45	831.48	-1,149.30	2,021.65	1,941.30	80.34	25.163	
7,500.00	7,418.25	7,467.81	7,418.25	43.81	41.98	-77.45	831.48	-1,149.30	2,021.65	1,940.29	81.35	24.851	
7,600.00	7,518.25	7,567.81	7,518.25	44.29	42.48	-77.45	831.48	-1,149.30	2,021.65	1,939.28	82.36	24.546	
7,700.00	7,618.25	7,667.81	7,618.25	44.77	42.98	-77.45	831.48	-1,149.30	2,021.65	1,938.27	83.37	24.248	
7,800.00	7,718.25	7,767.81	7,718.25	45.25	43.47	-77.45	831.48	-1,149.30	2,021.65	1,937.26	84.39	23.956	
7,900.00	7,818.25	7,867.81	7,818.25	45.74	43.97	-77.45	831.48	-1,149.30	2,021.65	1,936.24	85.40	23.672	
8,000.00	7,918.25	7,967.81	7,918.25	46.22	44.47	-77.45	831.48	-1,149.30	2,021.65	1,935.23	86.42	23.393	
8,100.00	8,018.25	8,067.81	8,018.25	46.70	44.97	-77.45	831.48	-1,149.30	2,021.65	1,934.21	87.44	23.121	
8,200.00	8,118.25	8,167.81	8,118.25	47.19	45.47	-77.45	831.48	-1,149.30	2,021.65	1,933.19	88.46	22.854	
8,300.00	8,218.25	8,267.81	8,218.25	47.68	45.97	-77.45	831.48	-1,149.30	2,021.65	1,932.17	89.48	22.594	
8,400.00	8,318.25	8,367.81	8,318.25	48.17	46.47	-77.45	831.48	-1,149.30	2,021.65	1,931.15	90.50	22.339	
8,500.00	8,418.25	8,467.81	8,418.25	48.66	46.97	-77.45	831.48	-1,149.30	2,021.65	1,930.12	91.52	22.089	
8,600.00	8,518.25	8,567.81	8,518.25	49.15	47.48	-77.45	831.48	-1,149.30	2,021.65	1,929.10	92.55	21.844	
8,700.00	8,618.24	8,667.80	8,618.24	49.64	47.98	-76.51	831.48	-1,149.30	2,021.49	1,927.99	93.50	21.621	
8,800.00	8,717.19	8,766.74	8,717.19	50.16	48.48	-77.18	831.48	-1,149.30	2,018.36	1,923.97	94.39	21.384	
8,900.00	8,812.27	8,861.83	8,812.27	50.70	48.96	-78.65	831.48	-1,149.30	2,011.63	1,918.45	95.18	21.134	
9,000.00	8,900.60	8,950.16	8,900.60	51.24	49.41	-80.74	831.48	-1,149.30	2,002.23	1,906.23	96.01	20.855	
9,100.00	8,979.50	9,029.06	8,979.50	51.77	49.81	-83.18	831.48	-1,149.30	1,991.47	1,894.54	96.93	20.545	
9,200.00	9,046.57	9,096.12	9,046.57	52.30	50.15	-85.67	831.48	-1,149.30	1,980.92	1,882.98	97.94	20.225	
9,300.00	9,099.76	9,149.32	9,099.76	52.84	50.42	-87.85	831.48	-1,149.30	1,972.20	1,873.25	98.94	19.932	
9,400.00	9,137.47	9,187.03	9,137.47	53.42	50.61	-89.40	831.48	-1,149.30	1,966.77	1,866.90	99.87	19.692	
9,471.28	9,154.25	9,203.80	9,154.25	53.87	50.70	-90.00	831.48	-1,149.30	1,965.55	1,865.06	100.49	19.559	
9,500.00	9,158.55	9,208.11	9,158.55	54.06	50.72	-90.10	831.48	-1,149.30	1,965.76	1,865.03	100.73	19.516	
9,600.00	9,163.48	9,213.03	9,163.48	54.74	50.74	-90.05	831.48	-1,149.30	1,969.73	1,868.23	101.50	19.406	
9,700.00	9,164.82	9,214.37	9,164.82	55.50	50.75	-90.09	831.48	-1,149.30	1,978.76	1,876.43	102.32	19.338	
9,800.00	9,166.16	9,215.71	9,166.16	56.34	50.76	-90.13	831.48	-1,149.30	1,992.76	1,889.54	103.22	19.306	
9,900.00	9,167.50	9,217.05	9,167.50	57.25	50.76	-90.17	831.48	-1,149.30	2,011.65	1,907.46	104.19	19.308	
10,000.00	9,168.84	9,218.39	9,168.84	58.24	50.77	-90.21	831.48	-1,149.30	2,035.28	1,930.06	105.22	19.343	
10,100.00	9,170.18	9,219.74	9,170.18	59.28	50.78	-90.25	831.48	-1,149.30	2,063.49	1,957.17	106.32	19.409	
10,200.00	9,171.52	9,221.08	9,171.52	60.39	50.78	-90.28	831.48	-1,149.30	2,096.09	1,988.62	107.47	19.504	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 28H - OH - Plan 2 11-17-16													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	
10,300.00	9,172.86	10,610.48	9,964.06	61.56	56.72	-111.98	1,674.02	-1,157.67	2,113.34	2,004.45	108.89	19.408	
10,400.00	9,174.20	10,710.46	9,963.99	62.78	57.42	-111.95	1,774.00	-1,158.66	2,112.15	2,001.37	110.78	19.066	
10,500.00	9,175.54	10,810.45	9,963.92	64.05	58.18	-111.92	1,873.98	-1,159.66	2,110.97	1,998.18	112.79	18.716	
10,600.00	9,176.88	10,910.44	9,963.85	65.37	59.02	-111.90	1,973.97	-1,160.65	2,109.79	1,994.88	114.91	18.361	
10,700.00	9,178.22	11,010.43	9,963.78	66.73	59.93	-111.87	2,073.95	-1,161.64	2,108.60	1,991.47	117.14	18.001	
10,800.00	9,179.56	11,110.41	9,963.71	68.14	60.91	-111.84	2,173.93	-1,162.63	2,107.42	1,987.96	119.46	17.641	
10,900.00	9,180.91	11,210.40	9,963.65	69.58	61.94	-111.81	2,273.91	-1,163.63	2,106.24	1,984.35	121.89	17.280	
11,000.00	9,182.25	11,310.39	9,963.58	71.06	63.03	-111.78	2,373.90	-1,164.62	2,105.06	1,980.65	124.40	16.921	
11,100.00	9,183.59	11,410.38	9,963.51	72.58	64.17	-111.75	2,473.88	-1,165.61	2,103.88	1,976.87	127.01	16.565	
11,200.00	9,184.93	11,510.36	9,963.44	74.13	65.37	-111.72	2,573.86	-1,166.61	2,102.70	1,973.01	129.69	16.214	
11,300.00	9,186.27	11,610.35	9,963.37	75.70	66.61	-111.70	2,673.85	-1,167.60	2,101.52	1,969.07	132.44	15.867	
11,400.00	9,187.61	11,710.34	9,963.30	77.31	67.91	-111.67	2,773.83	-1,168.59	2,100.34	1,965.07	135.27	15.527	
11,500.00	9,188.95	11,810.33	9,963.23	78.94	69.24	-111.64	2,873.81	-1,169.58	2,099.16	1,960.99	138.17	15.193	
11,600.00	9,190.29	11,910.31	9,963.16	80.60	70.61	-111.61	2,973.79	-1,170.58	2,097.98	1,956.86	141.13	14.866	
11,700.00	9,191.63	12,010.30	9,963.09	82.28	72.03	-111.58	3,073.78	-1,171.57	2,096.80	1,952.66	144.14	14.547	
11,800.00	9,192.97	12,110.29	9,963.02	83.99	73.48	-111.55	3,173.76	-1,172.56	2,095.63	1,948.41	147.22	14.235	
11,900.00	9,194.31	12,210.28	9,962.95	85.71	74.96	-111.52	3,273.74	-1,173.56	2,094.45	1,944.11	150.34	13.931	
12,000.00	9,195.65	12,310.26	9,962.88	87.46	76.48	-111.49	3,373.72	-1,174.55	2,093.28	1,939.76	153.52	13.635	
12,100.00	9,196.99	12,410.25	9,962.81	89.22	78.02	-111.47	3,473.71	-1,175.54	2,092.10	1,935.36	156.74	13.348	
12,200.00	9,198.33	12,510.24	9,962.74	91.00	79.60	-111.44	3,573.69	-1,176.53	2,090.93	1,930.92	160.00	13.068	
12,300.00	9,199.68	12,610.23	9,962.67	92.79	81.20	-111.41	3,673.67	-1,177.53	2,089.75	1,926.44	163.31	12.796	
12,400.00	9,201.02	12,710.21	9,962.60	94.61	82.83	-111.38	3,773.65	-1,178.52	2,088.58	1,921.92	166.65	12.532	
12,500.00	9,202.36	12,810.20	9,962.53	96.43	84.48	-111.35	3,873.64	-1,179.51	2,087.40	1,917.37	170.03	12.276	
12,600.00	9,203.70	12,910.19	9,962.46	98.27	86.15	-111.32	3,973.62	-1,180.51	2,086.23	1,912.78	173.45	12.028	
12,700.00	9,205.04	13,010.18	9,962.39	100.12	87.85	-111.29	4,073.60	-1,181.50	2,085.06	1,908.16	176.90	11.787	
12,800.00	9,206.38	13,110.16	9,962.32	101.99	89.56	-111.26	4,173.58	-1,182.49	2,083.89	1,903.51	180.37	11.553	
12,900.00	9,207.72	13,210.15	9,962.25	103.87	91.30	-111.23	4,273.57	-1,183.48	2,082.72	1,898.83	183.88	11.326	
13,000.00	9,209.06	13,310.14	9,962.18	105.75	93.05	-111.21	4,373.55	-1,184.48	2,081.55	1,894.13	187.42	11.107	
13,100.00	9,210.40	13,410.13	9,962.11	107.65	94.82	-111.18	4,473.53	-1,185.47	2,080.38	1,889.40	190.98	10.893	
13,200.00	9,211.74	13,510.11	9,962.04	109.56	96.60	-111.15	4,573.51	-1,186.46	2,079.21	1,884.64	194.56	10.687	
13,300.00	9,213.08	13,610.10	9,961.97	111.48	98.40	-111.12	4,673.50	-1,187.46	2,078.04	1,879.87	198.17	10.486	
13,400.00	9,214.42	13,710.09	9,961.90	113.40	100.21	-111.09	4,773.48	-1,188.45	2,076.87	1,875.07	201.80	10.292	
13,500.00	9,215.76	13,810.08	9,961.83	115.34	102.04	-111.06	4,873.46	-1,189.44	2,075.70	1,870.25	205.45	10.103	
13,600.00	9,217.10	13,910.07	9,961.76	117.28	103.88	-111.03	4,973.44	-1,190.43	2,074.53	1,865.41	209.12	9.920	
13,700.00	9,218.45	14,010.05	9,961.69	119.23	105.73	-111.00	5,073.43	-1,191.43	2,073.37	1,860.56	212.81	9.743	
13,800.00	9,219.79	14,110.04	9,961.62	121.19	107.59	-110.97	5,173.41	-1,192.42	2,072.20	1,855.68	216.52	9.571	
13,900.00	9,221.13	14,210.03	9,961.55	123.15	109.47	-110.94	5,273.39	-1,193.41	2,071.03	1,850.79	220.24	9.404	
14,000.00	9,222.47	14,310.02	9,961.48	125.12	111.35	-110.91	5,373.38	-1,194.41	2,069.87	1,845.89	223.98	9.241	
14,100.00	9,223.81	14,410.00	9,961.41	127.10	113.25	-110.88	5,473.36	-1,195.40	2,068.70	1,840.97	227.74	9.084	
14,200.00	9,225.15	14,509.99	9,961.34	129.08	115.15	-110.85	5,573.34	-1,196.39	2,067.54	1,836.03	231.51	8.931	
14,300.00	9,226.49	14,609.98	9,961.27	131.07	117.06	-110.82	5,673.32	-1,197.39	2,066.38	1,831.08	235.29	8.782	
14,400.00	9,227.83	14,709.97	9,961.20	133.06	118.99	-110.79	5,773.31	-1,198.38	2,065.21	1,826.12	239.09	8.638	
14,500.00	9,229.17	14,809.95	9,961.13	135.06	120.91	-110.76	5,873.29	-1,199.37	2,064.05	1,821.15	242.90	8.497	
14,600.00	9,230.51	14,910.00	9,961.09	137.06	122.88	-110.73	5,973.28	-1,200.36	2,063.00	1,816.23	246.77	8.360	
14,700.00	9,231.85	15,010.05	9,961.04	139.07	124.97	-110.70	6,073.26	-1,201.35	2,062.00	1,811.30	250.74	8.227	
14,800.00	9,233.19	15,110.10	9,960.99	141.08	127.12	-110.67	6,173.25	-1,202.34	2,061.00	1,806.37	254.81	8.103	
14,900.00	9,234.53	15,210.15	9,960.94	143.09	129.31	-110.64	6,273.24	-1,203.33	2,060.00	1,801.44	258.95	7.982	
15,000.00	9,235.87	15,310.20	9,960.89	145.11	131.56	-110.61	6,373.23	-1,204.32	2,059.00	1,796.51	263.14	7.864	
15,100.00	9,237.21	15,410.25	9,960.84	147.13	133.87	-110.58	6,473.22	-1,205.31	2,058.00	1,791.58	267.38	7.750	
15,200.00	9,238.55	15,510.30	9,960.79	149.16	136.24	-110.55	6,573.21	-1,206.30	2,057.00	1,786.65	271.67	7.638	
15,300.00	9,239.89	15,610.35	9,960.74	151.18	138.67	-110.52	6,673.20	-1,207.29	2,056.00	1,781.72	276.01	7.530	

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 8 5 Fed 003
 Site Error: 0.00 usft
 Reference Well: 1H
 Well Error: 0.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 3.00 sigma
 Database: Compass 5000 GCR
 Offset TVD Reference: Reference Datum

Offset Design HH SO 8 P5 - 28H - OH - Plan 2 11-17-16													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HODGM													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	9,259.55	15,719.05	9,978.96	153.22	138.72	-110.42	6,782.17	-1,197.69	2,063.12	1,785.21	277.90	7.424	
15,500.00	9,263.21	15,819.04	9,981.25	155.25	140.71	-110.38	6,882.14	-1,197.31	2,063.16	1,781.34	281.82	7.321	
15,600.00	9,266.88	15,919.03	9,983.54	157.29	142.70	-110.34	6,982.10	-1,196.93	2,063.21	1,777.46	285.75	7.220	
15,700.00	9,270.54	16,019.02	9,985.83	159.33	144.69	-110.30	7,082.06	-1,196.55	2,063.26	1,773.57	289.68	7.123	
15,800.00	9,274.21	16,119.01	9,988.13	161.37	146.69	-110.26	7,182.02	-1,196.17	2,063.30	1,769.68	293.62	7.027	
15,900.00	9,277.87	16,219.00	9,990.42	163.42	148.70	-110.22	7,281.98	-1,195.80	2,063.35	1,765.78	297.57	6.934	
16,000.00	9,281.54	16,318.99	9,992.71	165.47	150.71	-110.18	7,381.95	-1,195.42	2,063.40	1,761.88	301.53	6.843	
16,100.00	9,285.20	16,418.97	9,995.00	167.52	152.72	-110.14	7,481.91	-1,195.04	2,063.46	1,757.97	305.49	6.755	
16,200.00	9,288.87	16,518.96	9,997.30	169.57	154.73	-110.09	7,581.87	-1,194.66	2,063.51	1,754.05	309.46	6.668	
16,300.00	9,292.53	16,618.95	9,999.59	171.63	156.75	-110.05	7,681.83	-1,194.28	2,063.56	1,750.13	313.44	6.584	
16,400.00	9,295.57	16,718.95	10,001.88	173.68	158.78	-110.02	7,781.80	-1,193.91	2,063.62	1,746.44	317.38	6.503	
16,500.00	9,295.67	16,818.92	10,004.17	175.74	160.80	-110.06	7,881.74	-1,193.53	2,065.04	1,743.82	321.22	6.429	
16,600.00	9,295.12	16,918.88	10,006.47	177.80	162.83	-110.13	7,981.67	-1,193.15	2,066.46	1,741.41	325.05	6.357	
16,700.00	9,294.57	17,018.83	10,008.76	179.87	164.86	-110.20	8,081.61	-1,192.77	2,067.90	1,739.01	328.89	6.288	
16,800.00	9,294.03	17,118.79	10,011.05	181.93	166.90	-110.27	8,181.54	-1,192.40	2,069.33	1,736.60	332.73	6.219	
16,900.00	9,293.48	17,218.75	10,013.34	184.00	168.94	-110.34	8,281.47	-1,192.02	2,070.77	1,734.20	336.56	6.153	
17,000.00	9,292.93	17,318.71	10,015.63	186.07	170.98	-110.41	8,381.40	-1,191.64	2,072.21	1,731.80	340.41	6.087	
17,100.00	9,292.39	17,418.67	10,017.92	188.14	173.02	-110.48	8,481.33	-1,191.26	2,073.65	1,729.40	344.25	6.024	
17,200.00	9,291.84	17,518.63	10,020.22	190.22	175.07	-110.55	8,581.26	-1,190.88	2,075.10	1,727.00	348.09	5.961	
17,300.00	9,291.30	17,618.59	10,022.51	192.29	177.12	-110.62	8,681.20	-1,190.51	2,076.55	1,724.61	351.94	5.900	
17,400.00	9,290.75	17,718.54	10,024.80	194.37	179.17	-110.68	8,781.13	-1,190.13	2,078.00	1,722.21	355.78	5.841	
17,500.00	9,290.20	17,818.50	10,027.09	196.45	181.22	-110.75	8,881.06	-1,189.75	2,079.45	1,719.82	359.63	5.782	
17,600.00	9,289.66	17,918.46	10,029.38	198.53	183.28	-110.82	8,980.99	-1,189.37	2,080.91	1,717.43	363.48	5.725	
17,700.00	9,289.11	18,018.42	10,031.67	200.61	185.34	-110.89	9,080.92	-1,188.99	2,082.37	1,715.04	367.33	5.669	
17,800.00	9,288.56	18,118.38	10,033.97	202.69	187.40	-110.96	9,180.85	-1,188.62	2,083.84	1,712.66	371.18	5.614	
17,900.00	9,288.02	18,218.34	10,036.26	204.78	189.46	-111.03	9,280.78	-1,188.24	2,085.30	1,710.27	375.03	5.560	
18,000.00	9,287.47	18,318.30	10,038.55	206.86	191.52	-111.09	9,380.72	-1,187.86	2,086.77	1,707.89	378.88	5.508	
18,100.00	9,286.92	18,418.25	10,040.84	208.95	193.59	-111.16	9,480.65	-1,187.48	2,088.24	1,705.51	382.73	5.456	
18,200.00	9,286.38	18,518.21	10,043.13	211.04	195.66	-111.23	9,580.58	-1,187.11	2,089.72	1,703.14	386.58	5.406	
18,300.00	9,285.83	18,618.17	10,045.43	213.13	197.72	-111.30	9,680.51	-1,186.73	2,091.20	1,700.77	390.43	5.356	
18,400.00	9,285.28	18,718.13	10,047.72	215.22	199.80	-111.36	9,780.44	-1,186.35	2,092.68	1,698.40	394.28	5.308	
18,500.00	9,284.74	18,818.09	10,050.01	217.31	201.87	-111.43	9,880.37	-1,185.97	2,094.16	1,696.03	398.14	5.260	
18,600.00	9,284.19	18,918.05	10,052.30	219.41	203.94	-111.50	9,980.31	-1,185.59	2,095.65	1,693.66	401.99	5.213	
18,700.00	9,283.64	19,018.01	10,054.59	221.50	206.02	-111.57	10,080.24	-1,185.22	2,097.14	1,691.30	405.84	5.167	
18,800.00	9,283.10	19,117.96	10,056.88	223.60	208.10	-111.63	10,180.17	-1,184.84	2,098.64	1,688.95	409.69	5.123	
18,900.00	9,282.55	19,217.92	10,059.18	225.69	210.18	-111.70	10,280.10	-1,184.46	2,100.13	1,686.59	413.54	5.078	
19,000.00	9,282.00	19,317.88	10,061.47	227.79	212.26	-111.77	10,380.03	-1,184.08	2,101.63	1,684.24	417.39	5.035	
19,100.00	9,281.46	19,417.84	10,063.76	229.89	214.34	-111.84	10,479.96	-1,183.71	2,103.13	1,681.89	421.24	4.993	
19,200.00	9,280.91	19,517.80	10,066.05	231.99	216.42	-111.90	10,579.90	-1,183.33	2,104.64	1,679.55	425.09	4.951	
19,300.00	9,280.36	19,617.76	10,068.34	234.09	218.51	-111.97	10,679.83	-1,182.95	2,106.14	1,677.21	428.94	4.910	
19,400.00	9,279.82	19,717.72	10,070.63	236.19	220.59	-112.04	10,779.76	-1,182.57	2,107.65	1,674.87	432.78	4.870	
19,500.00	9,279.27	19,817.67	10,072.93	238.29	222.68	-112.10	10,879.69	-1,182.19	2,109.17	1,672.54	436.63	4.831	
19,549.38	9,279.00	19,867.04	10,074.06	239.33	223.71	-112.13	10,929.04	-1,182.01	2,109.92	1,671.38	438.53	4.811 SF	



Phoenix Technology Services LP

Anticollision Report



Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Reference Site: HH SO 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Reference Depths are relative to GL + KB @ 3295.00usft (Patterson 815) Coordinates are relative to: 1H

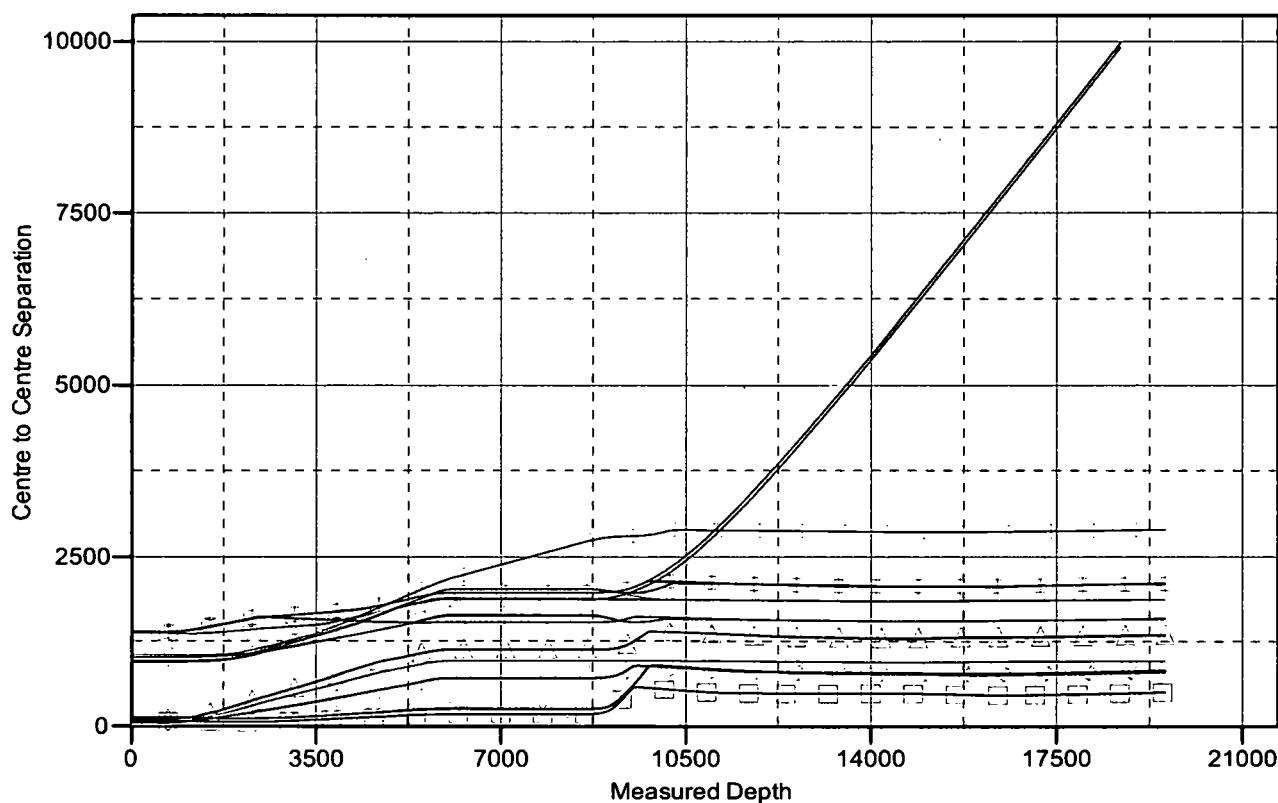
Offset Depths are relative to Offset Datum

Central Meridian is 104° 19' 60.00000 W

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

Grid Convergence at Surface is: 0.06°

Ladder Plot



LEGEND

- | | | |
|---|-----------------------------|--|
| 1H, OH, Plan 2 11-17-16 V0 | 11H, OH, Plan 1 11-01-16 V0 | 6HC, OH / Job #61219, Plan 3 06-09-17 VC |
| 1A, OH / Job #61217, Plan 4 06-09-17 V0 | 19H, OH, Plan 2 11-17-16 V0 | 4H, OH, Plan 1 06-16-17 V0 |
| 1A, OH / Job #61217, Surveys (Patterson 815) V0 | 2H, OH, Plan 1 06-16-17 V0 | 6H, OH, Plan 1 06-16-17 V0 |
| 1D, ST01 / Job #61221, Plan 4 06-09-17 V0 | 3H, OH, Plan 1 06-16-17 V0 | 5H, OH, Plan 1 06-16-17 V0 |
| 1D, OH / Job #61221, Plan 3 05-10-17 V0 | 28H, OH, Plan 2 11-17-16 V0 | |

CC - Min centre to center distance or covergent 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 8 5 Fed 003
Site Error: 0.00 usft
Reference Well: 1H
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 3.00 sigma
Database: Compass 5000 GCR
Offset TVD Reference: Reference Datum

Reference Depths are relative to GL + KB @ 3295.00usft (Patterson 815) Coordinates are relative to: 1H

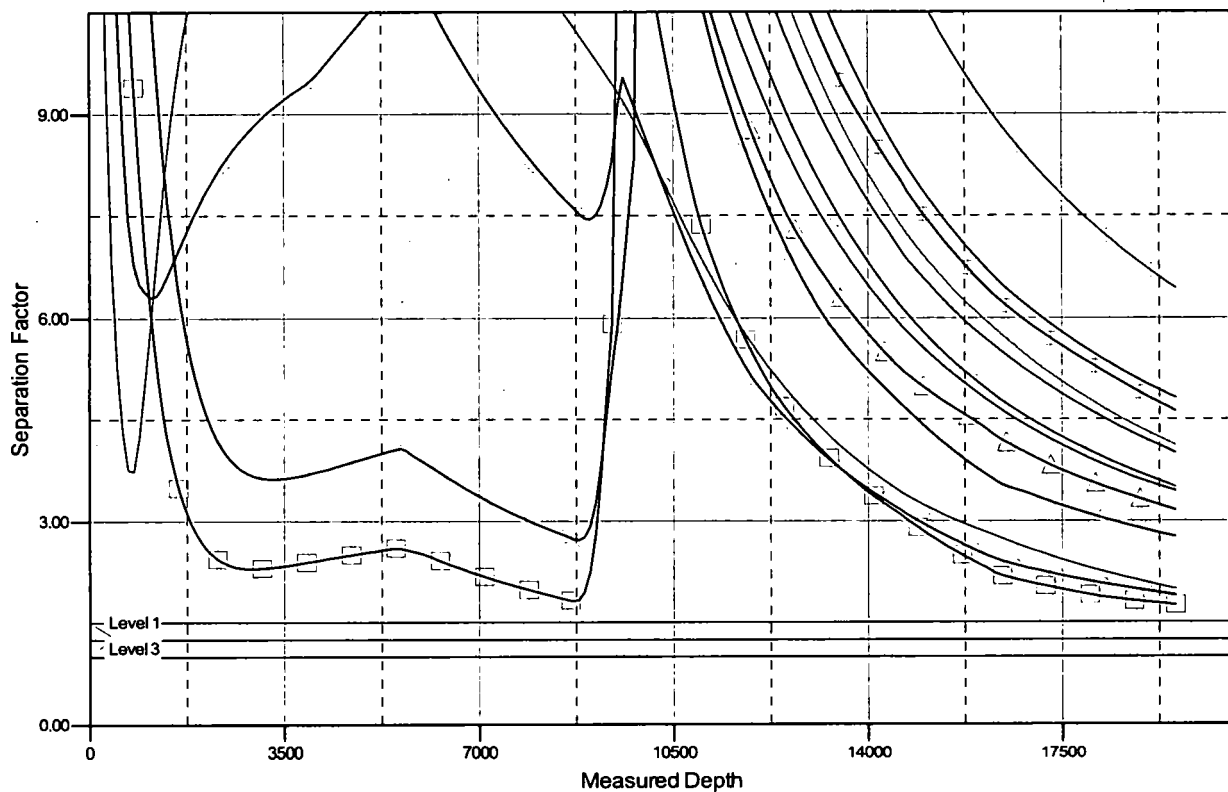
Offset Depths are relative to Offset Datum

Central Meridian is 104° 19' 60.00000 W

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, OH, Plan 2 11-17-16 V0 | 11H, OH, Plan 1 11-01-16 V0 | 6HC, OH / Job #61219, Plan 3 06-09-17 VC |
| 1A, OH / Job #61217, Plan 4 06-09-17 V0 | 19H, OH, Plan 2 11-17-16 V0 | 4H, OH, Plan 1 06-16-17 V0 |
| 1A, OH / Job #61217, Surveys (Patterson 815) V0 | 2H, OH, Plan 1 06-16-17 V0 | 6H, OH, Plan 1 06-16-17 V0 |
| 1D, ST01 / Job #61221, Plan 4 06-09-17 V0 | 3H, OH, Plan 1 06-16-17 V0 | 5H, OH, Plan 1 06-16-17 V0 |
| 1D, OH / Job #61221, Plan 3 05-10-17 V0 | 28H, OH, Plan 2 11-17-16 V0 | |

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



Project: Eddy County, NM (NAD27 NME)

Site: HH SO 8.5 Fed 003

Well: 1H

Wellbore: OH

Design: Plan 1 06-16-17

Rig: Patterson 815

WELL DETAILS

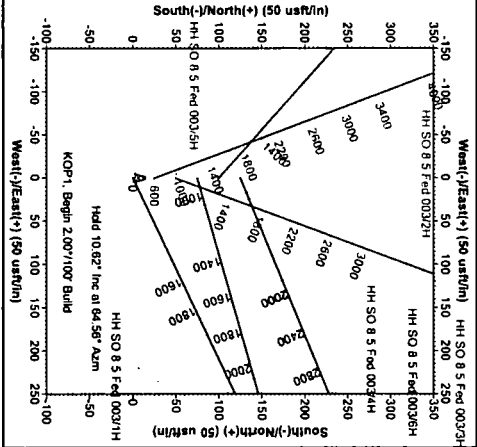
Well	North	East	Latitude	Longitude
HH-S	38176.89	53705.50	37° 52' 52.4880" N	106° 12' 46.5400" W

SECTION DETAILS

Sec	MD	Inc	As	T/O	Well	Depth	True	Target	Section
1	0.00	0.00	0.00	0.00	HH-S	0.00	0.00	0.00	KOP1, Begin 2.007100' Build
2	600.00	0.00	0.00	600.00	HH-S	600.00	0.00	0.00	Hold 10.62' Inc at 64.56° Azm
3	1130.00	10.62	64.56	1127.87	HH-S	1130.00	10.62	64.56	Begin 2.007100' Drop
4	5530.00	10.62	64.56	5427.13	HH-S	5530.00	10.62	64.56	Hold 10.62' Inc at 64.56° Azm
5	6500.00	0.00	0.00	6500.00	HH-S	6500.00	0.00	0.00	Begin 2.007100' Build
6	8671.84	0.00	0.00	8671.84	HH-S	8671.84	0.00	0.00	Hold 87.90' Inc at 0.54° Azm
7	9564.15	89.23	359.03	9163.00	HH-S	9564.15	89.23	359.03	KOP2, Begin 10.007100' Build
8	14561.83	89.23	359.03	9163.00	HH-S	14561.83	89.23	359.03	Hold 10.62' Inc at 64.56° Azm
9	14662.55	87.90	0.54	9294.00	HH-S	14662.55	87.90	0.54	Begin 2.007100' Drop
10	18340.06	87.90	0.54	9294.00	HH-S	18340.06	87.90	0.54	Hold 87.90' Inc at 0.54° Azm
11	18460.75	90.31	0.59	9253.00	HH-S	18460.75	90.31	0.59	Begin 2.007100' Build
12	19343.38	90.31	0.59	9253.00	HH-S	19343.38	90.31	0.59	Hold 87.90' Inc at 0.54° Azm

DESIGN TARGET DETAILS

Name	MD	Inc	As	T/O	Well	Depth	True	Target
FTP - HH SO 8.5 Fed 003 1H	9163.00	57.24	614.29	3821.34	HH-S	9163.00	57.24	614.29
MP - HH SO 8.5 Fed 003 1H	9203.00	59.53	778.39	3921.05	HH-S	9203.00	59.53	778.39
LTP - HH SO 8.5 Fed 003 1H	9279.00	109.93	88	3921.05	HH-S	9279.00	109.93	88
IP 4 - HH SO 8.5 Fed 003 1H	9294.00	77.30	77.30	3821.34	HH-S	9294.00	77.30	77.30

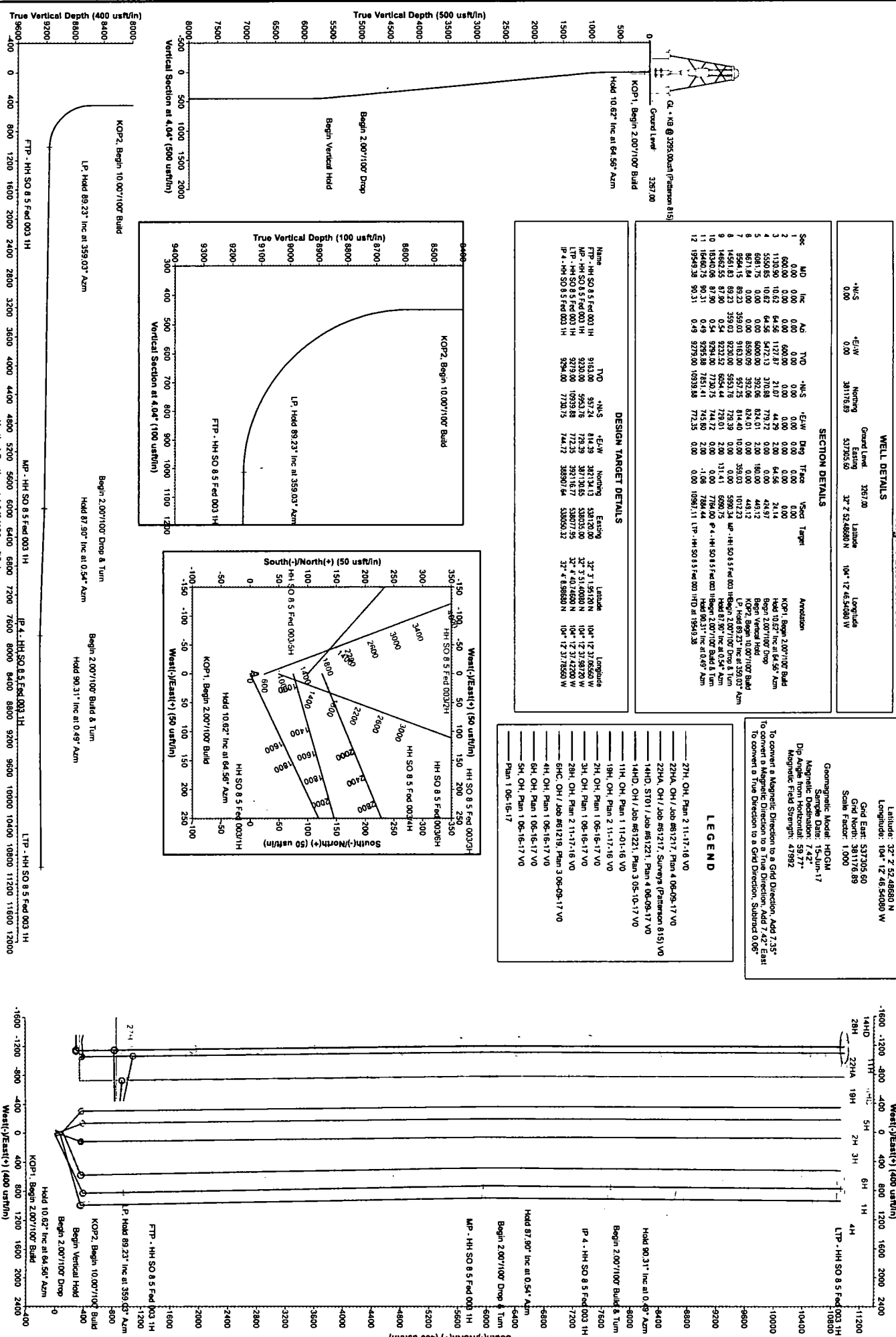


LEGEND

- 27H, OH, Plan 2 11-17-16 VO
- 22H, OH, Job #61217, Plan 4 06-09-17 VO
- 22H, OH, Job #61217, Surveys (Patterson 815) VO
- 14HD, ST01 / Job #61221, Plan 4 06-09-17 VO
- 14HD, OH / Job #61221, Plan 3 05-10-17 VO
- 11H, OH, Plan 1 11-01-16 VO
- 19H, OH, Plan 2 11-17-16 VO
- 2H, OH, Plan 1 06-16-17 VO
- 3H, OH, Plan 1 06-16-17 VO
- 28H, OH, Plan 2 11-17-16 VO
- 6HC, OH / Job #61219, Plan 3 06-09-17 VO
- 4H, OH, Plan 1 06-16-17 VO
- 5H, OH, Plan 1 06-16-17 VO
- Plan 1 06-16-17

PHOENIX
TECHNOLOGY SERVICES

Asimuths to Grid North
True North: 0.08°
Magnetic North: 7.35°
Magnetic Field
Strength: 47992.2 nT
Dip Angle: 53.77°
Date: 6/5/2017
Model: HDGM





NM OIL CONSERVATION

ARTESIA DISTRICT

JUL 17 2018

RECEIVED

Chevron

Eddy County, NM (NAD27 NME)

HH SO 8 5 Fed 003

1H

OH

Plan: Plan 1 06-16-17

Standard Planning Report

16 June, 2017





Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
 Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Site: HH SO 8 5 Fed 003
 Well: 1H
 Wellbore: OH
 Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 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 8 5 Fed 003			
Site Position:		Northing:	381,176.89 usft	Latitude: 32° 2' 52.48680 N
From:	Lat/Long	Easting:	537,305.60 usft	Longitude: 104° 12' 46.54080 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.06 °

Well	1H			
Well Position	+N/-S	0.00 usft	Northing:	381,176.89 usft
	+E/-W	0.00 usft	Easting:	537,305.60 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level: 3,267.00 usft

Wellbore	OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)
	HDGM	6/15/2017	7.42	59.77
				Field Strength (nT) 47,992

Design	Plan 1 06-16-17			
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	4.04

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	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,130.90	10.62	64.56	1,127.87	21.07	44.29	2.00	2.00	0.00	64.56	
5,550.85	10.62	64.56	5,472.13	370.98	779.72	0.00	0.00	0.00	0.00	
6,081.75	0.00	0.00	6,000.00	392.06	824.01	2.00	-2.00	0.00	180.00	
8,671.84	0.00	0.00	8,590.09	392.06	824.01	0.00	0.00	0.00	0.00	
9,564.15	89.23	359.03	9,163.00	957.25	814.40	10.00	10.00	0.00	359.03	
14,561.83	89.23	359.03	9,230.00	5,953.76	729.39	0.00	0.00	0.00	0.00	MP - HH SO 8 5 Fe
14,662.55	87.90	0.54	9,232.52	6,054.44	729.01	2.00	-1.32	1.50	131.41	
16,340.06	87.90	0.54	9,294.00	7,730.75	744.72	0.00	0.00	0.00	0.00	IP 4 - HH SO 8 5 Fe
16,460.75	90.31	0.49	9,295.88	7,851.41	745.80	2.00	2.00	-0.04	-1.06	
19,549.38	90.31	0.49	9,279.00	10,939.88	772.35	0.00	0.00	0.00	0.00	LTP - HH SO 8 5 Fe



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
 Company: Chevron
 Project: Eddy County, NM (NAD27 NME)
 Site: HH SO 8 5 Fed 003
 Well: 1H
 Wellbore: OH
 Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP1, Begin 2.00°/100' Build									
700.00	2.00	64.56	699.98	0.75	1.58	0.86	2.00	2.00	0.00
800.00	4.00	64.56	799.84	3.00	6.30	3.43	2.00	2.00	0.00
900.00	6.00	64.56	899.45	6.74	14.17	7.72	2.00	2.00	0.00
1,000.00	8.00	64.56	998.70	11.98	25.18	13.72	2.00	2.00	0.00
1,100.00	10.00	64.56	1,097.47	18.70	39.30	21.42	2.00	2.00	0.00
1,130.90	10.62	64.56	1,127.87	21.07	44.29	24.14	2.00	2.00	0.00
Hold 10.62° Inc at 64.56° Azm									
1,200.00	10.62	64.56	1,195.78	26.55	55.79	30.41	0.00	0.00	0.00
1,300.00	10.62	64.56	1,294.07	34.46	72.43	39.48	0.00	0.00	0.00
1,400.00	10.62	64.56	1,392.36	42.38	89.07	48.55	0.00	0.00	0.00
1,500.00	10.62	64.56	1,490.65	50.30	105.71	57.61	0.00	0.00	0.00
1,600.00	10.62	64.56	1,588.93	58.21	122.35	66.68	0.00	0.00	0.00
1,700.00	10.62	64.56	1,687.22	66.13	138.99	75.75	0.00	0.00	0.00
1,800.00	10.62	64.56	1,785.51	74.04	155.62	84.82	0.00	0.00	0.00
1,900.00	10.62	64.56	1,883.80	81.96	172.26	93.89	0.00	0.00	0.00
2,000.00	10.62	64.56	1,982.09	89.88	188.90	102.96	0.00	0.00	0.00
2,100.00	10.62	64.56	2,080.37	97.79	205.54	112.03	0.00	0.00	0.00
2,200.00	10.62	64.56	2,178.66	105.71	222.18	121.10	0.00	0.00	0.00
2,300.00	10.62	64.56	2,276.95	113.63	238.82	130.16	0.00	0.00	0.00
2,400.00	10.62	64.56	2,375.24	121.54	255.46	139.23	0.00	0.00	0.00
2,500.00	10.62	64.56	2,473.52	129.46	272.09	148.30	0.00	0.00	0.00
2,600.00	10.62	64.56	2,571.81	137.38	288.73	157.37	0.00	0.00	0.00
2,700.00	10.62	64.56	2,670.10	145.29	305.37	166.44	0.00	0.00	0.00
2,800.00	10.62	64.56	2,768.39	153.21	322.01	175.51	0.00	0.00	0.00
2,900.00	10.62	64.56	2,866.67	161.13	338.65	184.58	0.00	0.00	0.00
3,000.00	10.62	64.56	2,964.96	169.04	355.29	193.65	0.00	0.00	0.00
3,100.00	10.62	64.56	3,063.25	176.96	371.93	202.71	0.00	0.00	0.00
3,200.00	10.62	64.56	3,161.54	184.88	388.57	211.78	0.00	0.00	0.00
3,300.00	10.62	64.56	3,259.83	192.79	405.20	220.85	0.00	0.00	0.00
3,400.00	10.62	64.56	3,358.11	200.71	421.84	229.92	0.00	0.00	0.00
3,500.00	10.62	64.56	3,456.40	208.63	438.48	238.99	0.00	0.00	0.00
3,600.00	10.62	64.56	3,554.69	216.54	455.12	248.06	0.00	0.00	0.00
3,700.00	10.62	64.56	3,652.98	224.46	471.76	257.13	0.00	0.00	0.00
3,800.00	10.62	64.56	3,751.26	232.38	488.40	266.19	0.00	0.00	0.00
3,900.00	10.62	64.56	3,849.55	240.29	505.04	275.26	0.00	0.00	0.00
4,000.00	10.62	64.56	3,947.84	248.21	521.68	284.33	0.00	0.00	0.00
4,100.00	10.62	64.56	4,046.13	256.13	538.31	293.40	0.00	0.00	0.00
4,200.00	10.62	64.56	4,144.42	264.04	554.95	302.47	0.00	0.00	0.00
4,300.00	10.62	64.56	4,242.70	271.96	571.59	311.54	0.00	0.00	0.00
4,400.00	10.62	64.56	4,340.99	279.88	588.23	320.61	0.00	0.00	0.00
4,500.00	10.62	64.56	4,439.28	287.79	604.87	329.68	0.00	0.00	0.00
4,600.00	10.62	64.56	4,537.57	295.71	621.51	338.74	0.00	0.00	0.00
4,700.00	10.62	64.56	4,635.85	303.63	638.15	347.81	0.00	0.00	0.00
4,800.00	10.62	64.56	4,734.14	311.54	654.79	356.88	0.00	0.00	0.00
4,900.00	10.62	64.56	4,832.43	319.46	671.42	365.95	0.00	0.00	0.00
5,000.00	10.62	64.56	4,930.72	327.38	688.06	375.02	0.00	0.00	0.00
5,100.00	10.62	64.56	5,029.01	335.29	704.70	384.09	0.00	0.00	0.00
5,200.00	10.62	64.56	5,127.29	343.21	721.34	393.16	0.00	0.00	0.00
5,300.00	10.62	64.56	5,225.58	351.13	737.98	402.23	0.00	0.00	0.00
5,400.00	10.62	64.56	5,323.87	359.04	754.62	411.29	0.00	0.00	0.00
5,500.00	10.62	64.56	5,422.16	366.96	771.26	420.36	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 8 5 Fed 003
 Well: 1H
 Wellbore: OH
 Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 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)
5,550.85	10.62	64.56	5,472.13	370.98	779.72	424.97	0.00	0.00	0.00
Begin 2.00°/100' Drop									
5,600.00	9.63	64.56	5,520.52	374.70	787.52	429.23	2.00	-2.00	0.00
5,700.00	7.63	64.56	5,619.38	381.15	801.08	436.62	2.00	-2.00	0.00
5,800.00	5.63	64.56	5,718.71	386.11	811.51	442.30	2.00	-2.00	0.00
5,900.00	3.63	64.56	5,818.37	389.58	818.81	446.28	2.00	-2.00	0.00
6,000.00	1.63	64.56	5,918.26	391.56	822.96	448.54	2.00	-2.00	0.00
6,081.75	0.00	0.00	6,000.00	392.06	824.01	449.12	2.00	-2.00	-78.97
Begin Vertical Hold									
8,671.84	0.00	0.00	8,590.09	392.06	824.01	449.12	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
8,700.00	2.82	359.03	8,618.24	392.75	824.00	449.81	10.00	10.00	0.00
8,800.00	12.82	359.03	8,717.19	406.33	823.77	463.34	10.00	10.00	0.00
8,900.00	22.82	359.03	8,812.27	436.89	823.25	493.78	10.00	10.00	0.00
9,000.00	32.82	359.03	8,900.60	483.48	822.46	540.20	10.00	10.00	0.00
9,100.00	42.82	359.03	8,979.50	544.71	821.41	601.20	10.00	10.00	0.00
9,200.00	52.82	359.03	9,046.57	618.70	820.16	674.93	10.00	10.00	0.00
9,300.00	62.82	359.03	9,099.76	703.22	818.72	759.13	10.00	10.00	0.00
9,400.00	72.82	359.03	9,137.47	795.69	817.14	851.26	10.00	10.00	0.00
9,500.00	82.82	359.03	9,158.55	893.30	815.48	948.51	10.00	10.00	0.00
9,564.15	89.23	359.03	9,163.00	957.25	814.40	1,012.23	10.00	10.00	0.00
LP, Hold 89.23° Inc at 359.03° Azm									
9,600.00	89.23	359.03	9,163.48	993.09	813.79	1,047.93	0.00	0.00	0.00
9,700.00	89.23	359.03	9,164.82	1,093.07	812.09	1,147.54	0.00	0.00	0.00
9,800.00	89.23	359.03	9,166.16	1,193.04	810.38	1,247.15	0.00	0.00	0.00
9,900.00	89.23	359.03	9,167.50	1,293.02	808.68	1,346.76	0.00	0.00	0.00
10,000.00	89.23	359.03	9,168.84	1,393.00	806.98	1,446.37	0.00	0.00	0.00
10,100.00	89.23	359.03	9,170.18	1,492.97	805.28	1,545.98	0.00	0.00	0.00
10,200.00	89.23	359.03	9,171.52	1,592.95	803.58	1,645.59	0.00	0.00	0.00
10,300.00	89.23	359.03	9,172.86	1,692.93	801.88	1,745.19	0.00	0.00	0.00
10,400.00	89.23	359.03	9,174.20	1,792.90	800.18	1,844.80	0.00	0.00	0.00
10,500.00	89.23	359.03	9,175.54	1,892.88	798.48	1,944.41	0.00	0.00	0.00
10,600.00	89.23	359.03	9,176.88	1,992.86	796.78	2,044.02	0.00	0.00	0.00
10,700.00	89.23	359.03	9,178.22	2,092.83	795.08	2,143.63	0.00	0.00	0.00
10,800.00	89.23	359.03	9,179.56	2,192.81	793.38	2,243.24	0.00	0.00	0.00
10,900.00	89.23	359.03	9,180.91	2,292.79	791.68	2,342.85	0.00	0.00	0.00
11,000.00	89.23	359.03	9,182.25	2,392.76	789.97	2,442.45	0.00	0.00	0.00
11,100.00	89.23	359.03	9,183.59	2,492.74	788.27	2,542.06	0.00	0.00	0.00
11,200.00	89.23	359.03	9,184.93	2,592.72	786.57	2,641.67	0.00	0.00	0.00
11,300.00	89.23	359.03	9,186.27	2,692.69	784.87	2,741.28	0.00	0.00	0.00
11,400.00	89.23	359.03	9,187.61	2,792.67	783.17	2,840.89	0.00	0.00	0.00
11,500.00	89.23	359.03	9,188.95	2,892.64	781.47	2,940.50	0.00	0.00	0.00
11,600.00	89.23	359.03	9,190.29	2,992.62	779.77	3,040.11	0.00	0.00	0.00
11,700.00	89.23	359.03	9,191.63	3,092.60	778.07	3,139.71	0.00	0.00	0.00
11,800.00	89.23	359.03	9,192.97	3,192.57	776.37	3,239.32	0.00	0.00	0.00
11,900.00	89.23	359.03	9,194.31	3,292.55	774.67	3,338.93	0.00	0.00	0.00
12,000.00	89.23	359.03	9,195.65	3,392.53	772.97	3,438.54	0.00	0.00	0.00
12,100.00	89.23	359.03	9,196.99	3,492.50	771.27	3,538.15	0.00	0.00	0.00
12,200.00	89.23	359.03	9,198.33	3,592.48	769.56	3,637.76	0.00	0.00	0.00
12,300.00	89.23	359.03	9,199.68	3,692.46	767.86	3,737.37	0.00	0.00	0.00
12,400.00	89.23	359.03	9,201.02	3,792.43	766.16	3,836.97	0.00	0.00	0.00
12,500.00	89.23	359.03	9,202.36	3,892.41	764.46	3,936.58	0.00	0.00	0.00
12,600.00	89.23	359.03	9,203.70	3,992.39	762.76	4,036.19	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 8 5 Fed 003
 Well: 1H
 Wellbore: OH
 Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
 TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
 MD Reference: GL + KB @ 3295.00usft (Patterson 815)
 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)
12,700.00	89.23	359.03	9,205.04	4,092.36	761.06	4,135.80	0.00	0.00	0.00
12,800.00	89.23	359.03	9,206.38	4,192.34	759.36	4,235.41	0.00	0.00	0.00
12,900.00	89.23	359.03	9,207.72	4,292.32	757.66	4,335.02	0.00	0.00	0.00
13,000.00	89.23	359.03	9,209.06	4,392.29	755.96	4,434.63	0.00	0.00	0.00
13,100.00	89.23	359.03	9,210.40	4,492.27	754.26	4,534.23	0.00	0.00	0.00
13,200.00	89.23	359.03	9,211.74	4,592.25	752.56	4,633.84	0.00	0.00	0.00
13,300.00	89.23	359.03	9,213.08	4,692.22	750.86	4,733.45	0.00	0.00	0.00
13,400.00	89.23	359.03	9,214.42	4,792.20	749.15	4,833.06	0.00	0.00	0.00
13,500.00	89.23	359.03	9,215.76	4,892.18	747.45	4,932.67	0.00	0.00	0.00
13,600.00	89.23	359.03	9,217.10	4,992.15	745.75	5,032.28	0.00	0.00	0.00
13,700.00	89.23	359.03	9,218.45	5,092.13	744.05	5,131.88	0.00	0.00	0.00
13,800.00	89.23	359.03	9,219.79	5,192.11	742.35	5,231.49	0.00	0.00	0.00
13,900.00	89.23	359.03	9,221.13	5,292.08	740.65	5,331.10	0.00	0.00	0.00
14,000.00	89.23	359.03	9,222.47	5,392.06	738.95	5,430.71	0.00	0.00	0.00
14,100.00	89.23	359.03	9,223.81	5,492.03	737.25	5,530.32	0.00	0.00	0.00
14,200.00	89.23	359.03	9,225.15	5,592.01	735.55	5,629.93	0.00	0.00	0.00
14,300.00	89.23	359.03	9,226.49	5,691.99	733.85	5,729.54	0.00	0.00	0.00
14,400.00	89.23	359.03	9,227.83	5,791.96	732.15	5,829.14	0.00	0.00	0.00
14,500.00	89.23	359.03	9,229.17	5,891.94	730.45	5,928.75	0.00	0.00	0.00
14,561.83	89.23	359.03	9,230.00	5,953.76	729.39	5,990.34	0.00	0.00	0.00
Begin 2.00°/100' Drop & Turn									
14,600.00	88.73	359.60	9,230.68	5,991.92	728.94	6,028.38	2.00	-1.32	1.50
14,662.55	87.90	0.54	9,232.52	6,054.44	729.01	6,090.75	2.00	-1.32	1.50
Hold 87.90° Inc at 0.54° Azm									
14,700.00	87.90	0.54	9,233.89	6,091.86	729.36	6,128.10	0.00	0.00	0.00
14,800.00	87.90	0.54	9,237.56	6,191.79	730.30	6,227.85	0.00	0.00	0.00
14,900.00	87.90	0.54	9,241.22	6,291.72	731.23	6,327.59	0.00	0.00	0.00
15,000.00	87.90	0.54	9,244.89	6,391.65	732.17	6,427.34	0.00	0.00	0.00
15,100.00	87.90	0.54	9,248.55	6,491.58	733.11	6,527.09	0.00	0.00	0.00
15,200.00	87.90	0.54	9,252.22	6,591.50	734.04	6,626.83	0.00	0.00	0.00
15,300.00	87.90	0.54	9,255.88	6,691.43	734.98	6,726.58	0.00	0.00	0.00
15,400.00	87.90	0.54	9,259.55	6,791.36	735.92	6,826.33	0.00	0.00	0.00
15,500.00	87.90	0.54	9,263.21	6,891.29	736.85	6,926.07	0.00	0.00	0.00
15,600.00	87.90	0.54	9,266.88	6,991.22	737.79	7,025.82	0.00	0.00	0.00
15,700.00	87.90	0.54	9,270.54	7,091.15	738.73	7,125.56	0.00	0.00	0.00
15,800.00	87.90	0.54	9,274.21	7,191.08	739.66	7,225.31	0.00	0.00	0.00
15,900.00	87.90	0.54	9,277.87	7,291.00	740.60	7,325.06	0.00	0.00	0.00
16,000.00	87.90	0.54	9,281.54	7,390.93	741.53	7,424.80	0.00	0.00	0.00
16,100.00	87.90	0.54	9,285.20	7,490.86	742.47	7,524.55	0.00	0.00	0.00
16,200.00	87.90	0.54	9,288.87	7,590.79	743.41	7,624.30	0.00	0.00	0.00
16,300.00	87.90	0.54	9,292.53	7,690.72	744.34	7,724.04	0.00	0.00	0.00
16,340.06	87.90	0.54	9,294.00	7,730.75	744.72	7,764.00	0.00	0.00	0.00
Begin 2.00°/100' Build & Turn									
16,400.00	89.10	0.51	9,295.57	7,790.66	745.27	7,823.81	2.00	2.00	-0.04
16,460.75	90.31	0.49	9,295.88	7,851.41	745.80	7,884.44	2.00	2.00	-0.04
Hold 90.31° Inc at 0.49° Azm									
16,500.00	90.31	0.49	9,295.67	7,890.66	746.14	7,923.61	0.00	0.00	0.00
16,600.00	90.31	0.49	9,295.12	7,990.65	747.00	8,023.42	0.00	0.00	0.00
16,700.00	90.31	0.49	9,294.57	8,090.65	747.86	8,123.23	0.00	0.00	0.00
16,800.00	90.31	0.49	9,294.03	8,190.64	748.72	8,223.03	0.00	0.00	0.00
16,900.00	90.31	0.49	9,293.48	8,290.64	749.58	8,322.84	0.00	0.00	0.00
17,000.00	90.31	0.49	9,292.93	8,390.63	750.44	8,422.65	0.00	0.00	0.00
17,100.00	90.31	0.49	9,292.39	8,490.63	751.30	8,522.46	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 8 5 Fed 003
Well: 1H
Wellbore: OH
Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
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)
17,200.00	90.31	0.49	9,291.84	8,590.62	752.16	8,622.26	0.00	0.00	0.00
17,300.00	90.31	0.49	9,291.30	8,690.62	753.02	8,722.07	0.00	0.00	0.00
17,400.00	90.31	0.49	9,290.75	8,790.61	753.88	8,821.88	0.00	0.00	0.00
17,500.00	90.31	0.49	9,290.20	8,890.61	754.74	8,921.68	0.00	0.00	0.00
17,600.00	90.31	0.49	9,289.66	8,990.60	755.59	9,021.49	0.00	0.00	0.00
17,700.00	90.31	0.49	9,289.11	9,090.60	756.45	9,121.30	0.00	0.00	0.00
17,800.00	90.31	0.49	9,288.56	9,190.59	757.31	9,221.10	0.00	0.00	0.00
17,900.00	90.31	0.49	9,288.02	9,290.59	758.17	9,320.91	0.00	0.00	0.00
18,000.00	90.31	0.49	9,287.47	9,390.58	759.03	9,420.72	0.00	0.00	0.00
18,100.00	90.31	0.49	9,286.92	9,490.58	759.89	9,520.53	0.00	0.00	0.00
18,200.00	90.31	0.49	9,286.38	9,590.57	760.75	9,620.33	0.00	0.00	0.00
18,300.00	90.31	0.49	9,285.83	9,690.56	761.61	9,720.14	0.00	0.00	0.00
18,400.00	90.31	0.49	9,285.28	9,790.56	762.47	9,819.95	0.00	0.00	0.00
18,500.00	90.31	0.49	9,284.74	9,890.55	763.33	9,919.75	0.00	0.00	0.00
18,600.00	90.31	0.49	9,284.19	9,990.55	764.19	10,019.56	0.00	0.00	0.00
18,700.00	90.31	0.49	9,283.64	10,090.54	765.05	10,119.37	0.00	0.00	0.00
18,800.00	90.31	0.49	9,283.10	10,190.54	765.91	10,219.18	0.00	0.00	0.00
18,900.00	90.31	0.49	9,282.55	10,290.53	766.77	10,318.98	0.00	0.00	0.00
19,000.00	90.31	0.49	9,282.00	10,390.53	767.63	10,418.79	0.00	0.00	0.00
19,100.00	90.31	0.49	9,281.46	10,490.52	768.49	10,518.60	0.00	0.00	0.00
19,200.00	90.31	0.49	9,280.91	10,590.52	769.35	10,618.40	0.00	0.00	0.00
19,300.00	90.31	0.49	9,280.36	10,690.51	770.21	10,718.21	0.00	0.00	0.00
19,400.00	90.31	0.49	9,279.82	10,790.51	771.06	10,818.02	0.00	0.00	0.00
19,500.00	90.31	0.49	9,279.27	10,890.50	771.92	10,917.83	0.00	0.00	0.00
19,549.38	90.31	0.49	9,279.00	10,939.88	772.35	10,967.11	0.00	0.00	0.00

TD at 19549.38

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP - HH SO 8 5 Fed	0.00	0.00	9,163.00	957.24	814.39	382,134.13	538,120.00	32° 3' 1.95120 N	04° 12' 37.06560 W
- hit/miss target									
- Shape									
- plan misses target center by 0.01usft at 9564.14usft MD (9162.99 TVD, 957.24 N, 814.40 E)									
- Point									
MP - HH SO 8 5 Fed	0.00	0.00	9,230.00	5,953.76	729.39	387,130.65	538,035.00	32° 3' 51.40080 N	04° 12' 37.98720 W
- plan hits target center									
- Point									
LTP - HH SO 8 5 Fed	0.00	0.00	9,279.00	10,939.88	772.35	392,116.77	538,077.95	32° 4' 40.74600 N	04° 12' 37.42200 W
- plan hits target center									
- Point									
IP 4 - HH SO 8 5 Fed	0.00	0.00	9,294.00	7,730.75	744.72	388,907.64	538,050.32	32° 4' 8.98680 N	04° 12' 37.78560 W
- plan hits target center									
- Point									



Phoenix Technology Services LP

Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Eddy County, NM (NAD27 NME)
Site: HH SO 8 5 Fed 003
Well: 1H
Wellbore: OH
Design: Plan 1 06-16-17

Local Co-ordinate Reference: Well 1H
TVD Reference: GL + KB @ 3295.00usft (Patterson 815)
MD Reference: GL + KB @ 3295.00usft (Patterson 815)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
600.00	600.00	0.00	0.00	KOP1, Begin 2.00°/100' Build
1,130.90	1,127.87	21.07	44.29	Hold 10.62° Inc at 64.56° Azm
5,550.85	5,472.13	370.98	779.72	Begin 2.00°/100' Drop
6,081.75	6,000.00	392.06	824.01	Begin Vertical Hold
8,671.84	8,590.09	392.06	824.01	KOP2, Begin 10.00°/100' Build
9,564.15	9,163.00	957.25	814.40	LP, Hold 89.23° Inc at 359.03° Azm
14,561.83	9,230.00	5,953.76	729.39	Begin 2.00°/100' Drop & Turn
14,662.55	9,232.52	6,054.44	729.01	Hold 87.90° Inc at 0.54° Azm
16,340.06	9,294.00	7,730.75	744.72	Begin 2.00°/100' Build & Turn
16,460.75	9,295.88	7,851.41	745.80	Hold 90.31° Inc at 0.49° Azm
19,549.38	9,279.00	10,939.88	772.35	TD at 19549.38

H2S Monitor Locations

- Bop/Cellar
- Rig Floor
- Shaker Skid
- Bell Nipple

Flag Locations

- Sign-in Shack
- Rig Floor
- Dog House

10 Minute Escape Packs

- 1 at Pits
- 1 at Trip Tank
- 1 at Accumulator
- 4 at Rig Floor

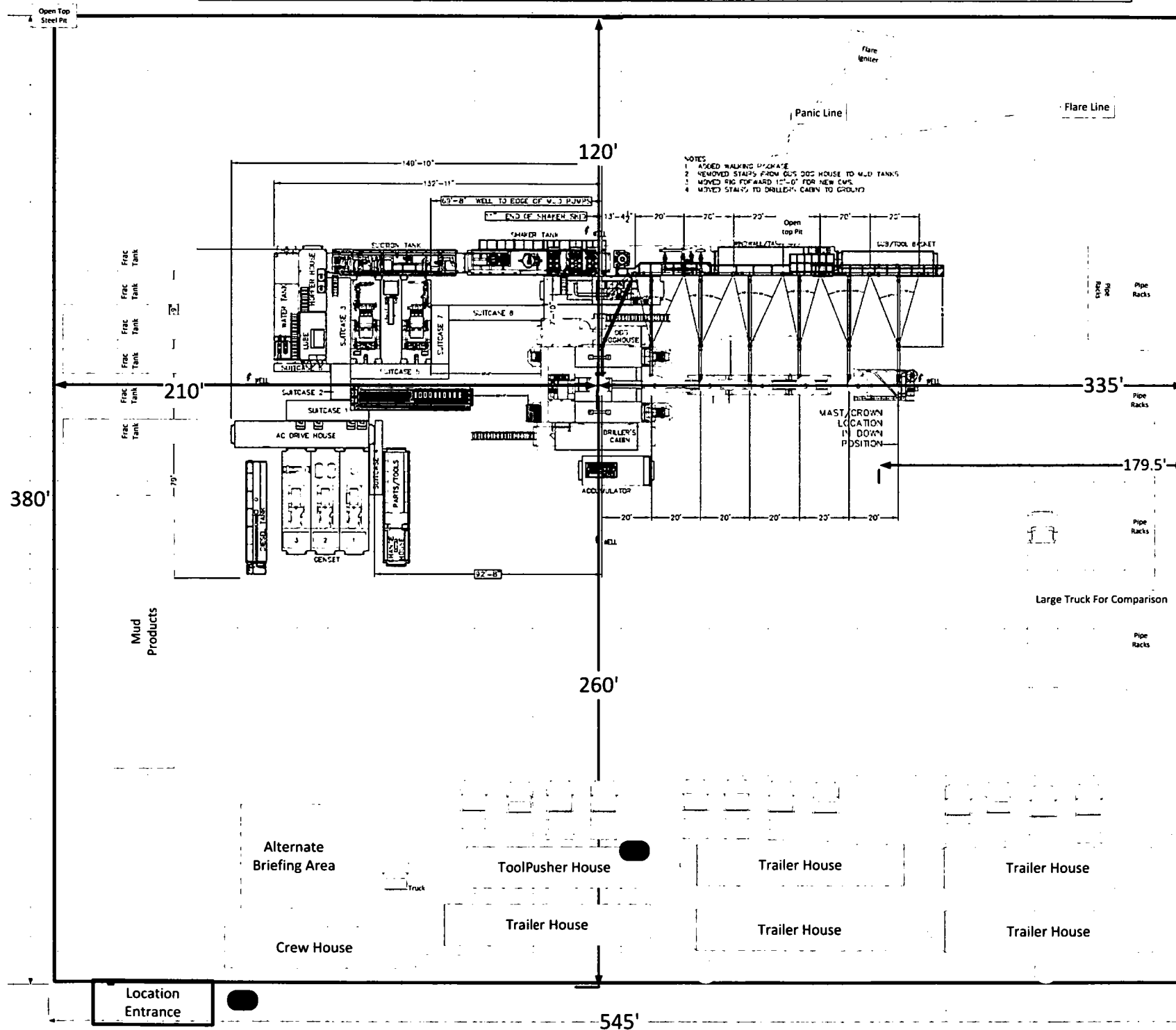
45 Minute Escape Packs

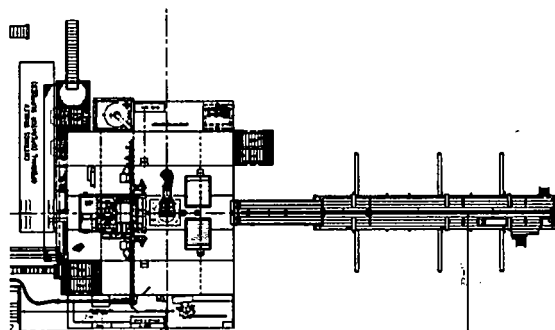
- 2 at Briefing Area
- 2 at Alternate Briefing Area

Legend

- **H2S Monitor**

Flag







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

SUPO Data Report

07/16/2018

APD ID: 10400014948

Submission Date: 07/12/2017

Operator Name: CHEVRON USA INCORPORATED

Highlighted data
reflects the most
recent changes

Well Name: HH SO 8 5 FED 003

Well Number: 1H

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_8_5_FED_003_1H_Road_Plat_07-10-2017.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 that 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 improvement project, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

HH_SO_8_5_FED_003_1H_New_Road_Plat_20180713063342.pdf

New road type: LOCAL

Length: 5148

Feet

Width (ft.): 24

Max slope (%): 2

Max grade (%): 3

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 24

New road access erosion control: Erosion / Drainage: Drainage control system shall be constructed on the entire length of road by the use of any of the following: ditches, sidehill out-sloping and in-sloping, lead-off ditches, culvert installation, or low water crossings.

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: NONE

Access topsoil source: ONSITE

Access surfacing type description:

Access onsite topsoil source depth: 0

Offsite topsoil source description:

Onsite topsoil removal process: none needed

Access other construction information: Exclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation. Fencing will remain in place while no activity is present and until back-filling takes place.

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: CULVERT,OTHER

Drainage Control comments: Sediment traps (hay bales suggested by BLM) we don't use every time but keep handy.

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

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

HH_SO_8_5_FED_3_1H_1_Mile_06-27-2017.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Existing production facilities located in the NE corner of section 10, T26S-R27E where oil and gas sales will take place. The existing facility is 500' X 700'. Gas compression will occur within the proposed facility boundaries, Gas purchaser pipeline is in place at the tank battery, open top tanks or open containments will

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

be netted, open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting. Facilities will have a secondary containment 1.5 times the holding capacity of largest storage tank. All above ground structures will be painted non-reflective shale green for blending with surrounding environment, the permanent water disposal system will be determine prior to construction of any water transfer pipeline. Until permanent water takeaway is available, produced water will be hauled off location in trucks. Notification will be provided to BLM upon site selection and survey - plats (including SWD well information) will be provided. Pipelines Include: 4583 of flowlines carrying production (buried), 4600' Gas lift line carrying pressurized gas (buried), 4608' 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

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): 775006.3

Source volume (acre-feet): 99.89297

Source volume (gal): 32550266

Water source and transportation map:

HH_SO_8_5_FED_003_1H_Aerial_detail_07-10-2017.pdf

Water source comments: Existing ponds in Section 9 & 10, T26S-R27E will be utilized for fresh water or recycled water. Fresh water will be obtained from a private water source.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

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 pit in Section 13, T24S R27E in Eddy County, NM.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: GARBAGE

Waste content description: garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly in an NMOCD approved disposal facility. All trash on and around the well site will be collected for disposal. Human waste and grey water will be properly contained and disposed of properly in an State approved disposal facility.

Amount of waste: 200 pounds

Waste disposal frequency : Daily

Safe containment description: Drill fluids and produced oil and water from the well during drilling and completion operations will be stored safely, collected in a trash container and disposed of properly in an NMOCD approved facility. After drilling and completion operations, trash, chemicals, salts, frac sand, and other waste material will be removed and disposed of properly at a State approved disposal facility. The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD 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

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.)

Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

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

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

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_8_5_FED_003_1H_Well_Plat_07-10-2017.pdf

Comments: Exterior well pad dimensions are 380' x 545' Interior well pad dimensions from point of entry (well head) are N-335, S-210, E-125, W-260. The length to the west includes 25' spacing for next well on multi-well pad. Total disturbance area needed for construction of well pad will be 4.81 acres. Topsoil placement where reclamation is planned to be completed upon completion of well and evaluation of best management practices. cut and fill will be minimal.

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: HH SO 8 5 FED 003

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

Recontouring attachment:

HH_SO_8_5_FED_003_1H_Cut_Fill_06-27-2017.pdf

HH_SO_8_5_FED_003_1H_Reclamation_06-27-2017.pdf

HH_SO_8_5_FED_003_1H_APD_SUP_07-11-2017.pdf

HH_SO_8_5_FED_003_1H_Fac_Layout_07-11-2017.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): 3.26

Access road long term disturbance (acres): 0.06

Access road short term disturbance (acres): 0.06

Pipeline long term disturbance (acres): 0.08953168

Pipeline short term disturbance (acres): 0.08953168

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.6395317

Total short term disturbance: 3.4095316

Disturbance Comments: All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be re-contoured to the contour existing prior to initial construction.

Reconstruction method: reducing the pad size to approximately 1.5 acres from the proposed temporary size of 3.26 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 will be evenly re-spread and aggressively re-vegetated over the entire disturbed area not needed for all-weather operations including cuts and fills.

Soil treatment: To seed the area, the proper BLM mixture free of noxious weeds, will be used.

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

Existing Vegetation at the well pad attachment:

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

Existing Vegetation Community at the road attachment:

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

Existing Vegetation Community at the pipeline attachment:

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

Existing Vegetation Community at other disturbances attachment:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

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

Existing invasive species treatment description:

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 8 5 FED 003

Well Number: 1H

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 8 5 FED 003

Well Number: 1H

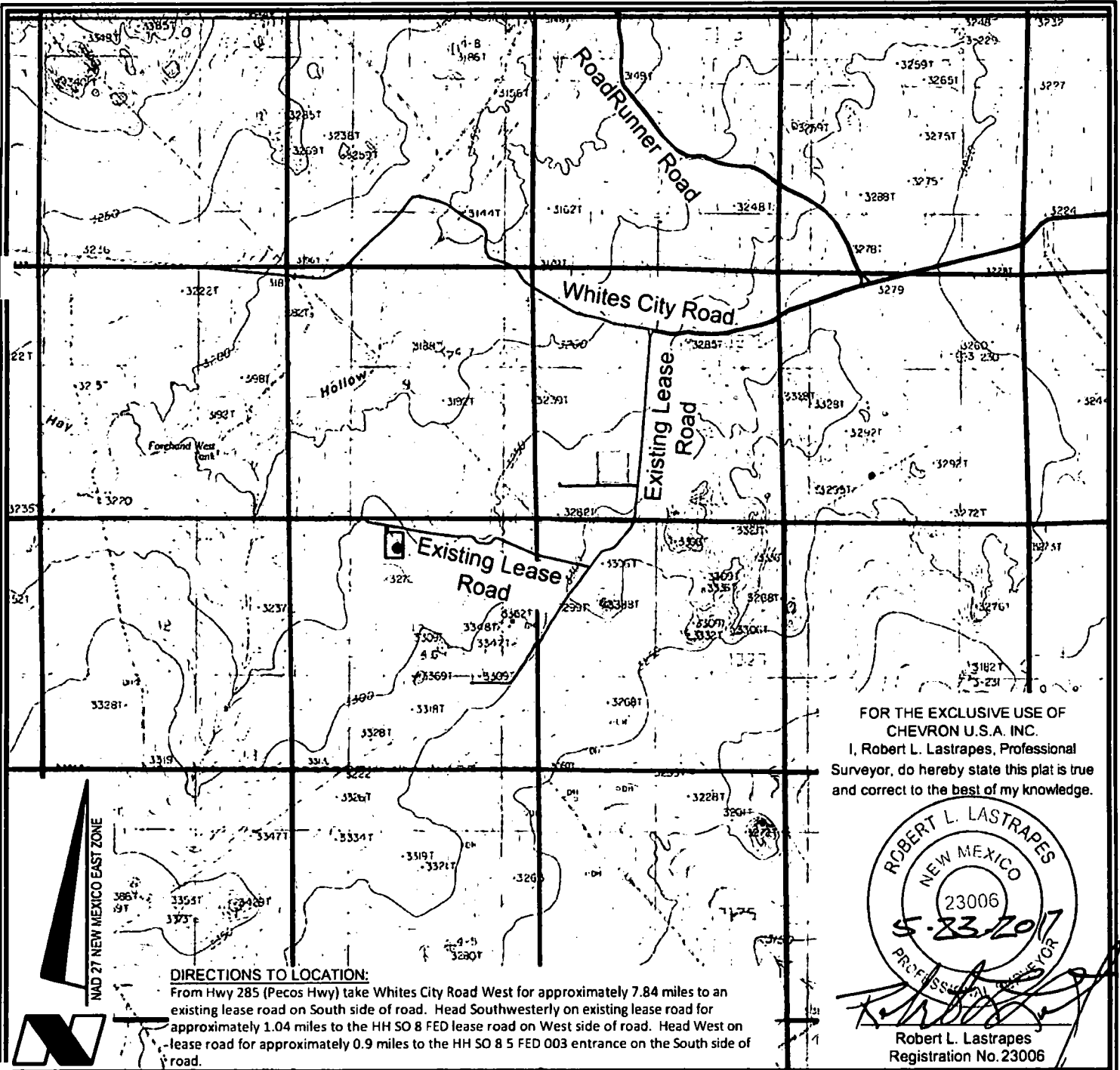
ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: On-site performed by BLM NRS Paul Murphy 01/06/2017.

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
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 on South side of road. Head Southwesterly on existing lease road for approximately 1.04 miles to the HH SO 8 FED lease road on West side of road. Head West on lease road for approximately 0.9 miles to the HH SO 8 5 FED 003 entrance on the South side of road.

ROAD PLAT

SCALE: 1" = 3000'

3000' 0 1500' 3000'

LEGEND

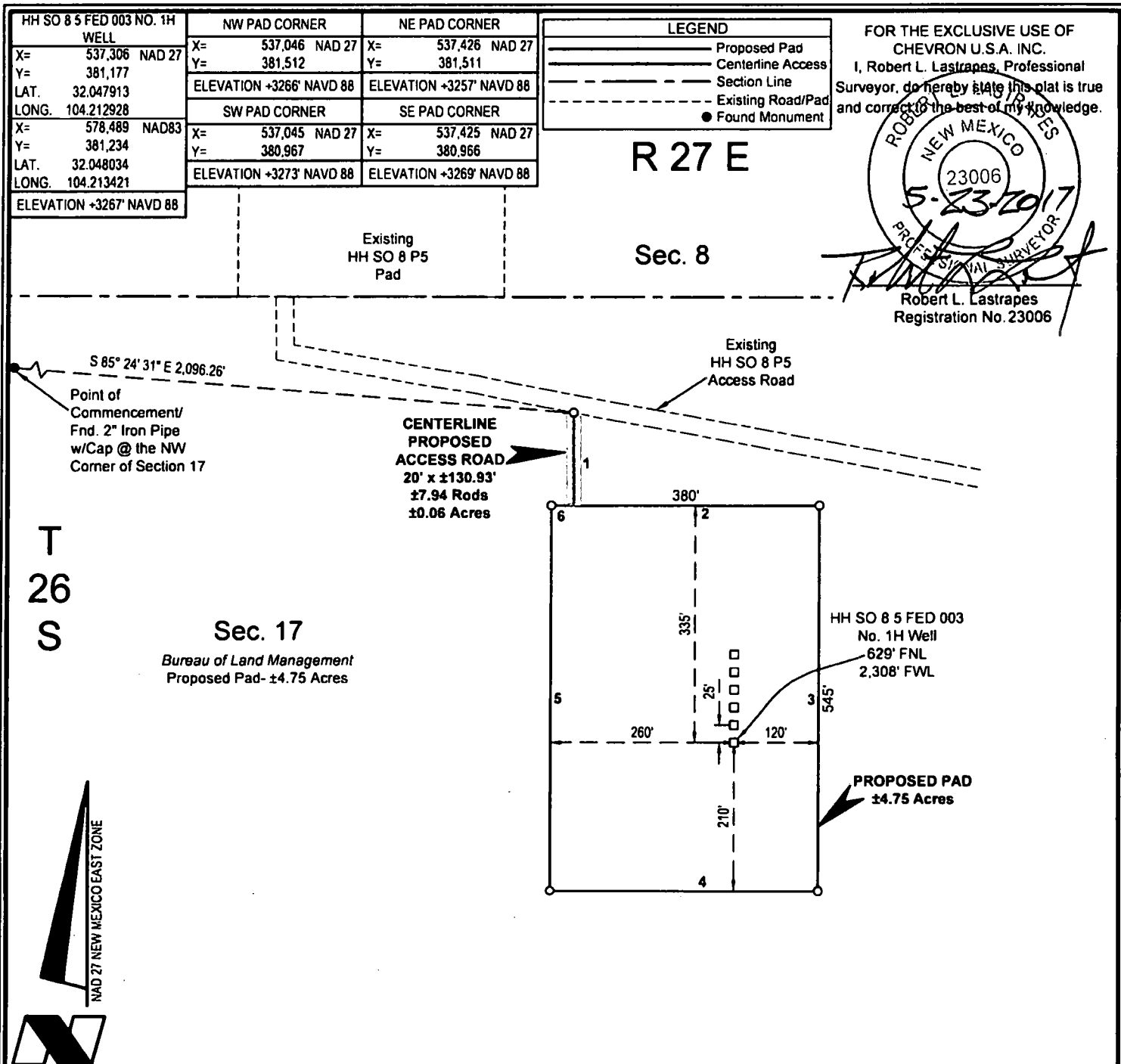
- Proposed Well
- Proposed Access Road
- Proposed Drillsite
- Existing Road
- Section Line
- Proposed Frac Pond

CHEVRON U.S.A. INC.
HH SO 8 5 FED 003 NO. 1H WELL
LOCATED 629' FNL AND 2,308' FWL
SECTION 17, 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

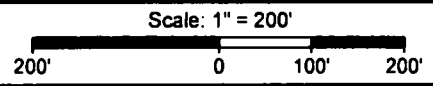
DRAWN BY: DBM		REVISIONS	
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 04/12/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 1H_Road Plat_041217.dwg			



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
NEW MEXICO
23006
5-23-2017
PROFESSIONAL SURVEYOR

Robert L. Lastrapes
Registration No. 23006



CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 1H WELL
SECTION 17, 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: DBM		REVISIONS	
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 04/12/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 1H_Well Plat_041217.dwg			

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

CENTERLINE PROPOSED ACCESS ROAD		
COURSE	BEARING	DISTANCE
1	S 00° 16' 28" E	130.93'

NOTE:

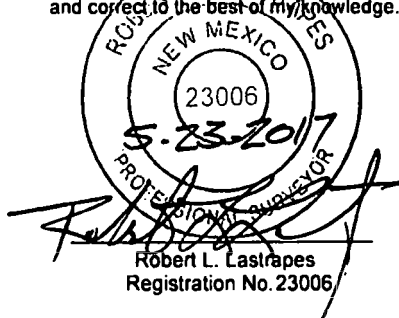
Please be advised, that while reasonable efforts are made to locate and verify pipelines and anomalies using our standard pipeline locating equipment, it is impossible to be 100 % effective. As such, we advise using caution when performing work as there is a possibility that pipelines and other hazards,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

PROPOSED PAD		
COURSE	BEARING	DISTANCE
2	S 89° 52' 43" E	348.07'
3	S 00° 07' 17" W	545.00'
4	N 89° 52' 43" W	380.00'
5	N 00° 07' 17" E	545.00'
6	S 89° 52' 43" E	31.93'

NOTE:

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.

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.



PAGE 2 OF 2

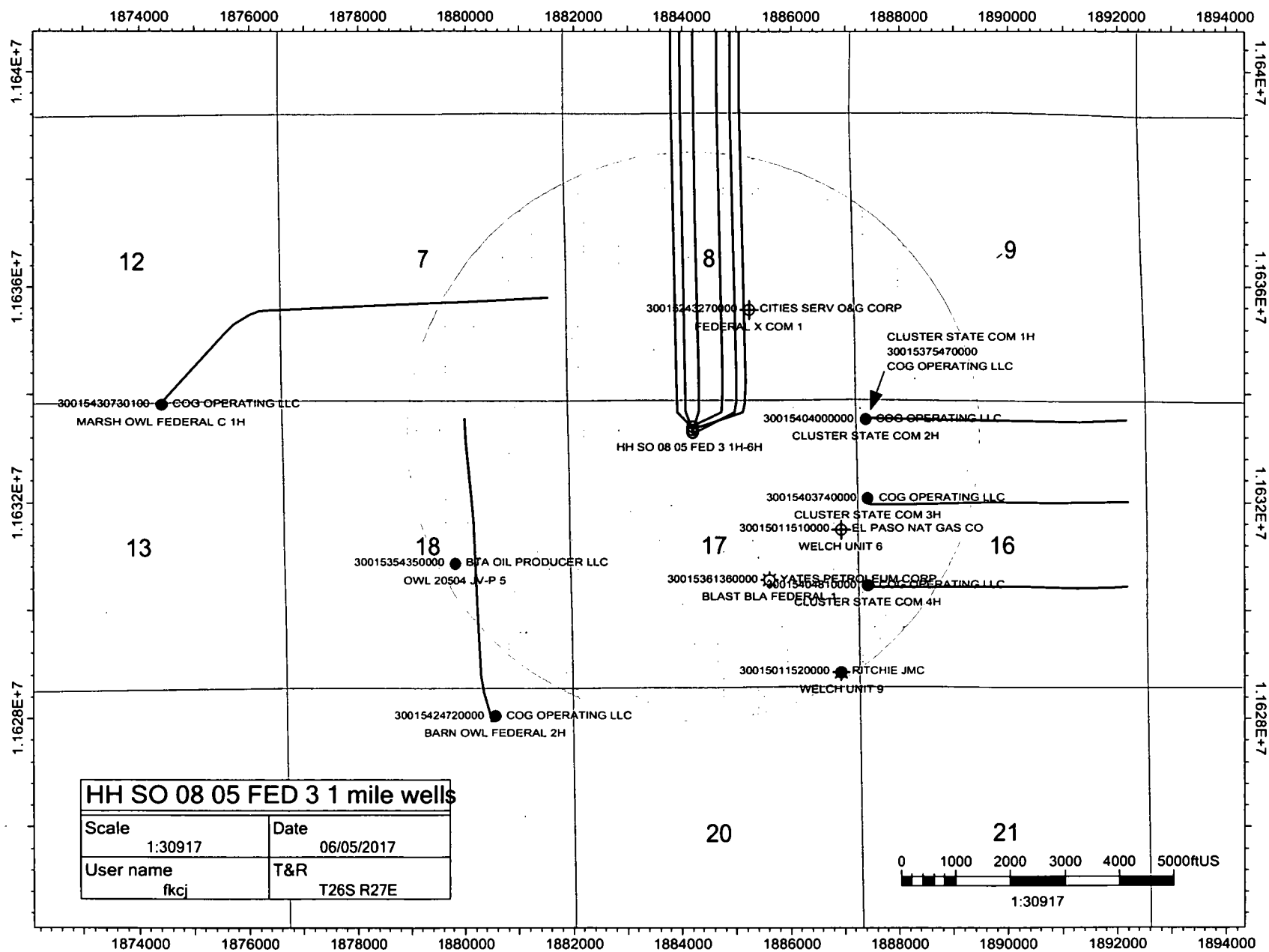
WELL PLAT

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 1H WELL
SECTION 17, 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: DBM		REVISIONS	
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 04/12/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 1H_Well Plat_041217.dwg			



R 27 E

Sec. 8

Bureau of Land Management
Proposed WFMP Flowline(Cluster) ±931', ±56.42 Rods
Proposed Gas Lift Flowline ±914', ±55.39 Rods
Proposed Temporary Water Line ±911', ±55.21 Rods

Sec. 9

Bureau of Land Management
Proposed WFMP Flowline(Cluster) ±512', ±37.09 Rods
Proposed Gas Lift Flowline ±613', ±37.15 Rods
Proposed Temporary Water Line ±613', ±37.15 Rods

SEE INSET B

T
26
S

Sec. 16
State of New Mexico

Sec. 17

Bureau of Land Management
Proposed 65' ROW ±75.79', ±4.59 Rods, ±0.12 Acres
Proposed WFMP Flowline(Cluster) ±3,101' ±187.94 Rods
Proposed Gas Lift Flowline ±3,019', ±182.97 Rods
Proposed Temporary Water Line ±3,016', ±182.79 Rods
Proposed Utility Line ±87' ±5.27 Rods

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.

Not to be used for construction,
bidding, recordation, conveyance,
sales, or engineering design.

PRELIMINARY

Robert L. Lastrapes
Registration No. 23006

NOTE: No field work was performed by C.H. Fenstermaker & Associates, L.L.C. on the proposed pipelines depicted in these drawings. Pipelines shown are preliminary and are based on previous survey data and digitized client-furnished information. Pipeline positions and distances should be considered approximate. Following final staking, revised plats will reflect as-staked pipeline positions, bearings and distances.

LEGEND	
---	Section Line
- - - -	Right of Way
- - - -	WFMP Flowline
- - - -	Gas Lift Flowline
- - - -	Contourline Access
- - - -	Utility Line
- - - -	Temporary Water Line
- - - -	Fence Line
- - - -	Lease Road/Pads
●	Found Monument

DETAIL

PAGE 1 OF 2

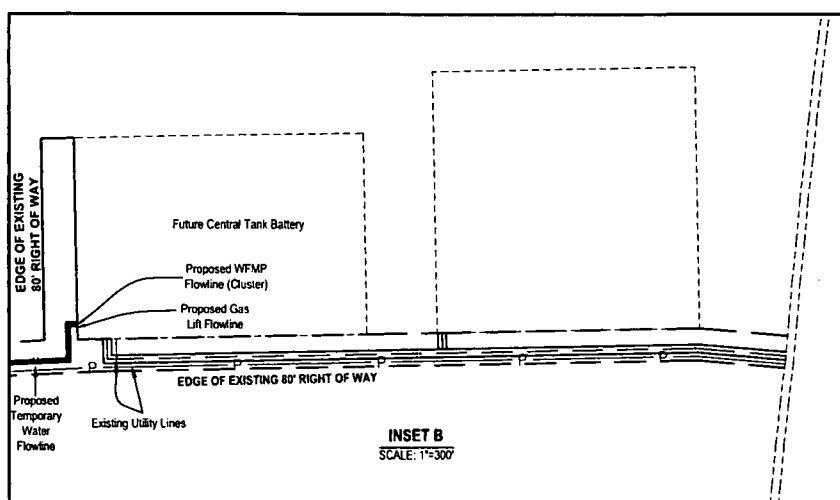
CHEVRON U.S.A. INC.

PROPOSED 65' RIGHT OF WAY EASEMENT & EXISTING 80' ROW TO BE USED FOR FLOWLINE
HH SO 8 5 FED 003 ROW
SECTIONS 8, 9 & 17, 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: BOR		REVISIONS	
PROJ. MGR.: GDG	No. 1	DATE: 09/19/2016	REVISED BY: GDG
DATE: 09/01/2016	No. 2	DATE: 05/24/2017	REVISED BY: AMT
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 ROW2.dwg			



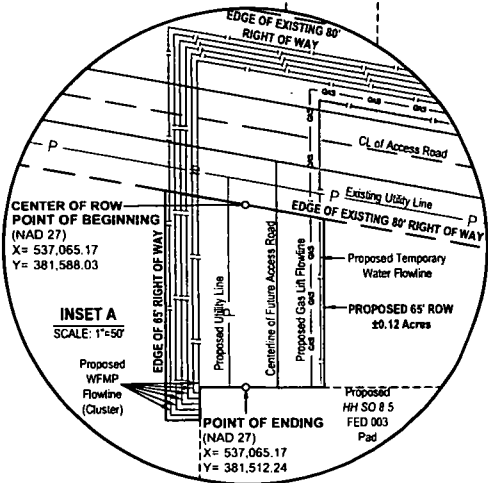
INSET B
SCALE: 1"=300'

S 83° 52' 27" E 2,088.90'
To a Fnd. 2" Iron Pipe w/Cap
@ the NW Corner of Sec. 17

SEE INSET A

PROPOSED 65' ROW
±75.79', ±4.59 Rods,
±0.12 Acres

Proposed
HH SO 8 5
FED 003
PAD



INSET A
SCALE: 1"=50'



Scale: 1" = 500'
500' 0 250' 500'

DISCLAIMER: At this time, C.H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:

1. 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.
2. 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.
3. No field work was performed by C.H. Fenstermaker & Associates, L.L.C. on the proposed pipelines depicted in these drawings. Pipelines shown are preliminary and are based on previous survey data and digitized client-furnished information. Pipeline positions and distances should be considered approximate. Following final staking, revised plats will reflect as-staked pipeline positions, bearings and distances.

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.

Not to be used for construction,
bidding, recordation, conveyance,
sales, or engineering design



Robert L. Lastrapes
Registration No. 23006

**METES AND BOUNDS DESCRIPTION OF A
PROPOSED RIGHT OF WAY EASEMENT LOCATED IN
SECTIONS 8, 9 AND 17 OF T26S-R27E
EDDY COUNTY, NEW MEXICO**

HH SO 8 5 FED 003 RIGHT OF WAY

Description of the centerline of a proposed 65 feet wide by 75.79 feet or 4.59 rods right of way easement (40 feet each side of centerline) across Bureau of Land Management property located in section 17 of Township 26 South, Range 27 East, and described as follows:

Commencing at the Northwest corner of said section 17 Township 26 South Range 27 East at a found 2" Iron Pipe; Thence South 83 degrees 52 minutes 27 seconds East 2,088.90 feet to the **Point of Beginning**. Said Point of Beginning having the following coordinates: X = 537,065.17 Y = 381,588.03 (New Mexico State Plane Coordinate System, East Zone, NAD 27).

Thence South 75.79 feet to the **Point of Ending**, having the following coordinates X=537,065.17 and Y=381,512.24 (New Mexico State Plane Coordinate System, East Zone, NAD 27).

The bearings recited hereon are oriented to New Mexico State Plane Coordinate System, East Zone, NAD 27.

This description represents a survey made on the ground for a right of way easement and intended solely for that purpose. This description does not represent a boundary survey.

DETAIL

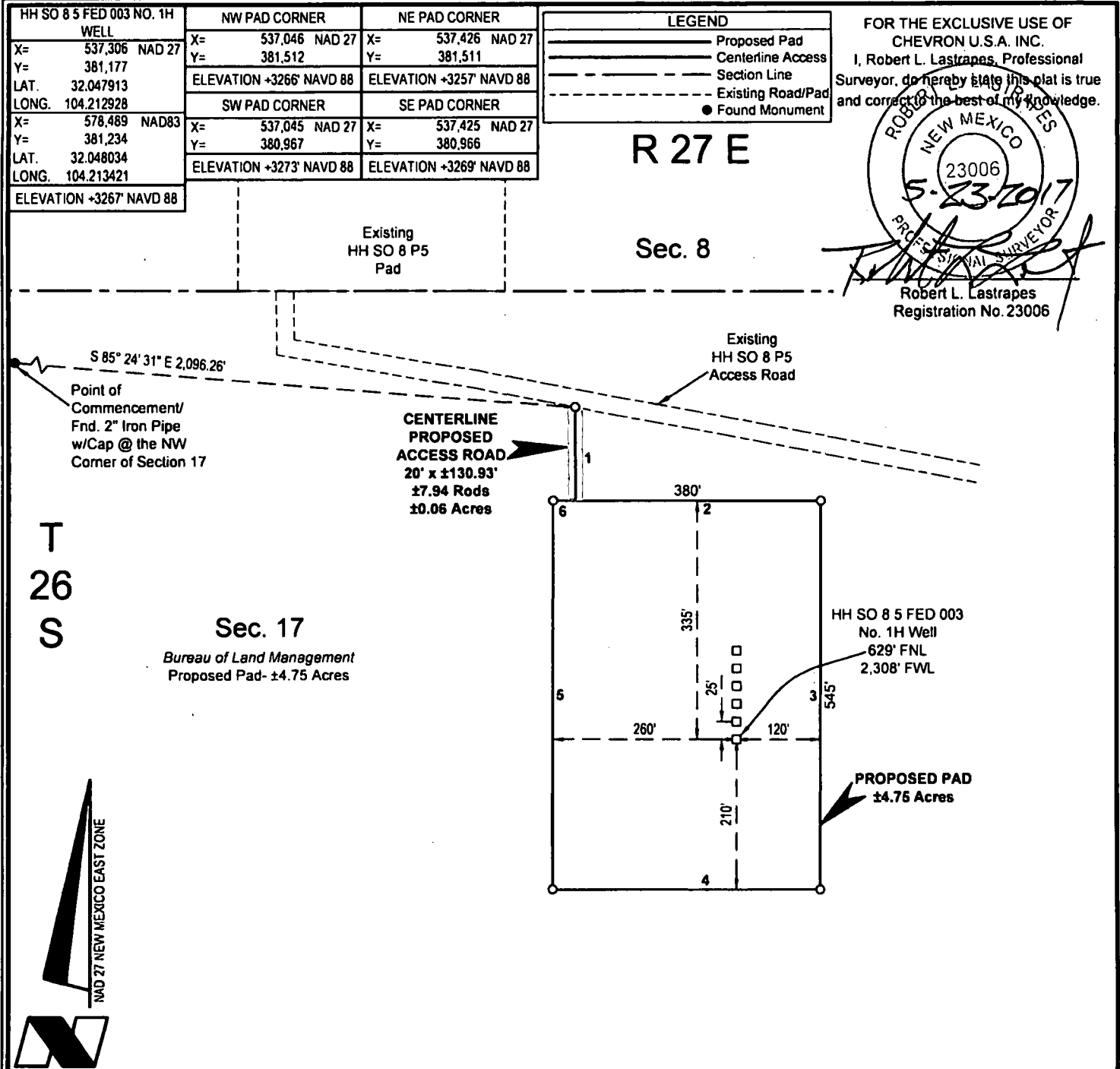
PAGE 2 OF 2

CHEVRON U.S.A. INC.
PROPOSED 65' RIGHT OF WAY EASEMENT & EXISTING 80' ROW TO BE USED FOR FLOWLINE
HH SO 8 5 FED 003 ROW
SECTIONS 8, 9 & 17, 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: BOR		REVISIONS			
PROJ. MGR.: GDG	No. 1	DATE: 09/19/2016	REVISED BY: GDG		
DATE: 09/01/2016	No. 2	DATE: 05/24/2017	REVISED BY: AMT		
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 ROW2.dwg					



PAGE 1 OF 2

WELL PLAT

Scale: 1" = 200'

200' 0 100' 200'

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 1H WELL
SECTION 17, 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: DBM		REVISIONS	
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 04/12/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 1H_Well Plat_041217.dwg			

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

CENTERLINE PROPOSED ACCESS ROAD		
COURSE	BEARING	DISTANCE
1	S 00° 16' 28" E	130.93'

NOTE:

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.

PROPOSED PAD		
COURSE	BEARING	DISTANCE
2	S 89° 52' 43" E	348.07'
3	S 00° 07' 17" W	545.00'
4	N 89° 52' 43" W	380.00'
5	N 00° 07' 17" E	545.00'
6	S 89° 52' 43" E	31.93'

NOTE:

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.

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.



PAGE 2 OF 2

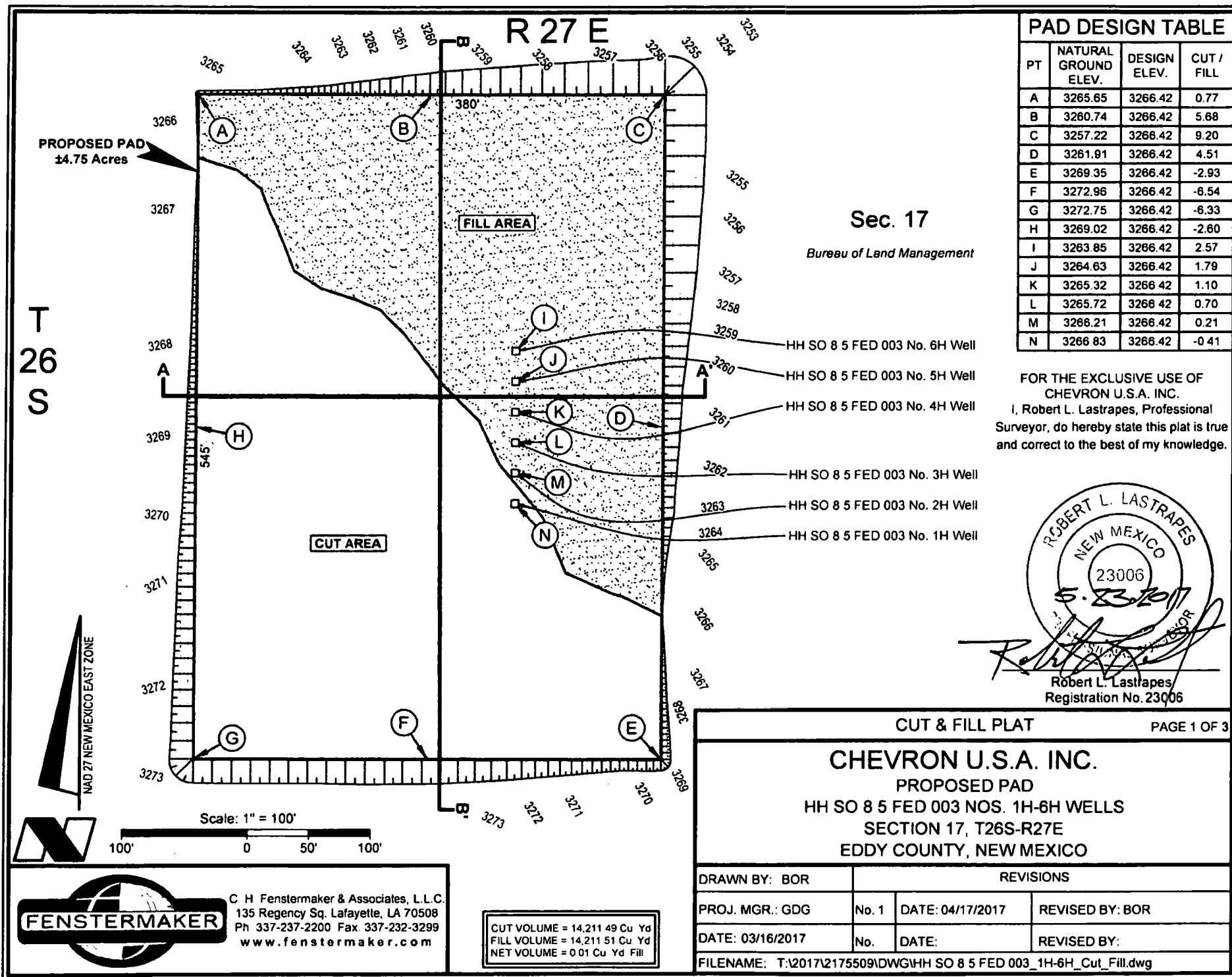
WELL PLAT

CHEVRON U.S.A. INC.
PROPOSED PAD & ACCESS ROAD
HH SO 8 5 FED 003 NO. 1H WELL
SECTION 17, 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: DBM		REVISIONS	
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 04/12/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 1H_Well Plat_041217.dwg			



PAD DESIGN TABLE

PT	NATURAL GROUND ELEV.	DESIGN ELEV.	CUT / FILL
A	3265.65	3266.42	0.77
B	3260.74	3266.42	5.68
C	3257.22	3266.42	9.20
D	3261.91	3266.42	4.51
E	3269.35	3266.42	-2.93
F	3272.96	3266.42	-6.54
G	3272.75	3266.42	-6.33
H	3269.02	3266.42	-2.60
I	3263.85	3266.42	2.57
J	3264.63	3266.42	1.79
K	3265.32	3266.42	1.10
L	3265.72	3266.42	0.70
M	3266.21	3266.42	0.21
N	3266.83	3266.42	-0.41

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
Registration No. 23006



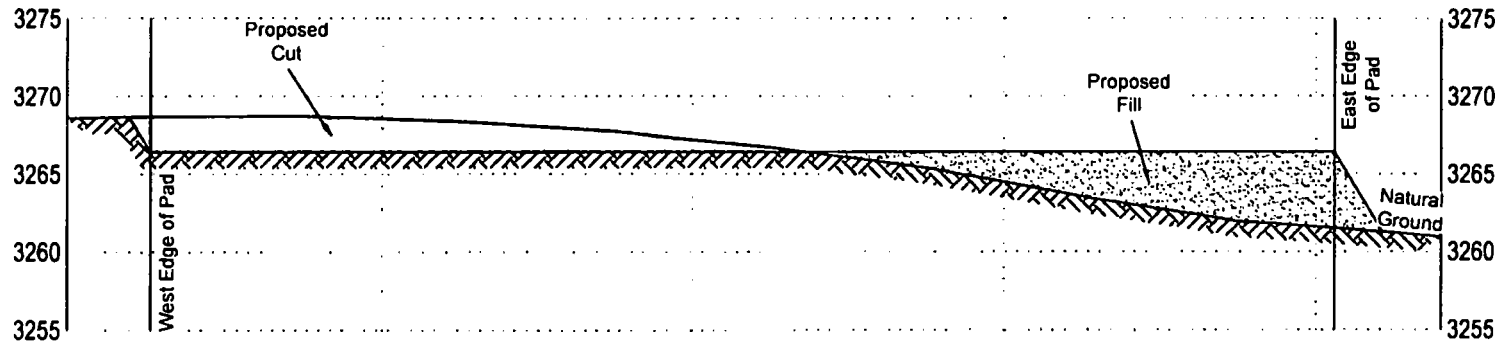
Scale: 1" = 100'
100' 0 50' 100'



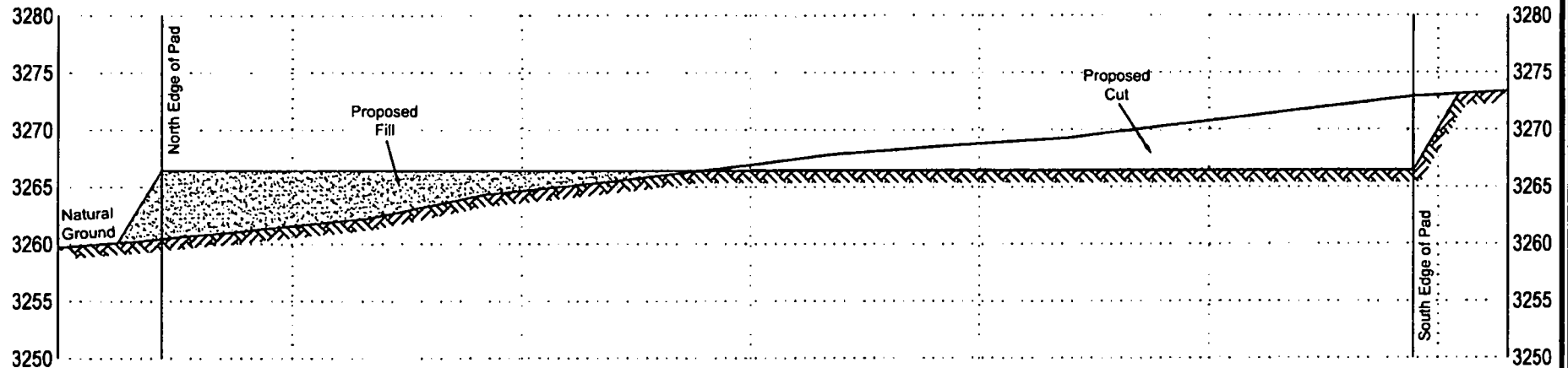
C. H. Fenstermaker & Associates, L.L.C.
135 Regency Sq. Lafayette, LA 70508
Ph 337-237-2200 Fax 337-232-3299
www.fenstermaker.com

CUT VOLUME = 14,211.49 Cu Yd
FILL VOLUME = 14,211.51 Cu Yd
NET VOLUME = 0.01 Cu Yd Fill

CROSS SECTION A-A'



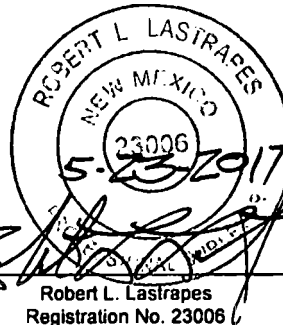
CROSS SECTION B-B'



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.



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



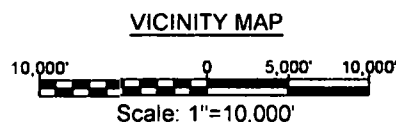
CUT & FILL PLAT

PAGE 2 OF 3

CHEVRON U.S.A. INC.

PROPOSED PAD
HH SO 8 5 FED 003 NOS. 1H-6H WELLS
SECTION 17, T26S-R27E
EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR		REVISIONS	
PROJ. MGR.: GDG	No. 1	DATE: 04/17/2017	REVISED BY: BOR
DATE: 03/16/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003_1H-6H_Cut_Fill.dwg			



AREA OF
WORK

Roadrunner
Road

Whites City Road

HWY 285 (Pecos Hwy)

Existing
Lease Road

Wijiholt Ranch Road
Dusty Trail

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.nmonecall.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.

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.

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

CUT & FILL PLAT

PAGE 3 OF 3

CHEVRON U.S.A. INC.

PROPOSED PAD

HH SO 8 5 FED 003 NOS. 1H-6H WELLS

SECTION 17, T26S-R27E

EDDY COUNTY, NEW MEXICO

DRAWN BY: BOR

REVISIONS

PROJ. MGR.: GDG

No. 1

DATE: 04/17/2017

REVISED BY: BOR

DATE: 03/16/2017

No.

DATE:

REVISED BY:

FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003_1H-6H_Cut_Fill.dwg



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



HH SO 8 5 FED 003 NO. 1H WELL	NW PAD CORNER	NE PAD CORNER
X= 537,306 NAD 27	X= 537,046 NAD 27	X= 537,426 NAD 27
Y= 381,177	Y= 381,512	Y= 381,511
LAT. 32.047913	ELEVATION +3266' NAVD 88	ELEVATION +3257' NAVD 88
LONG. 104.212928	SW PAD CORNER	SE PAD CORNER
X= 578,489 NAD83	X= 537,045 NAD 27	X= 537,425 NAD 27
Y= 381,234	Y= 380,967	Y= 380,966
LAT. 32.048034	ELEVATION +3273' NAVD 88	ELEVATION +3269' NAVD 88
LONG. 104.213421		
ELEVATION +3267' NAVD 88		

LEGEND	
	Proposed Pad
	Centerline Access
	Section Line
	Existing Road/Pad
	Found Monument

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.

Not to be used for construction,
bidding, recordation, conveyance,
sales, or engineering design.



Robert L. Lastrapes
Registration No. 23006

R 27 E

Sec. 8

Existing
HH SO 8 P5
Pad

S 85° 24' 31" E 2,096.26'
Point of
Commencement/
Fnd. 2" Iron Pipe
w/Cap @ the NW
Corner of Section 17

Existing
HH SO 8 P5
Access Road

CENTERLINE
PROPOSED
ACCESS ROAD
20' x ±130.93'
±7.94 Rods
±0.06 Acres

PROPOSED
PERMANENT
PAD AREA
±1.49 Acres

HH SO 8 5 FED 003
No. 6H Well

HH SO 8 5 FED 003
No. 5H Well

HH SO 8 5 FED 003
No. 4H Well

HH SO 8 5 FED 003
No. 3H Well

HH SO 8 5 FED 003
No. 2H Well

HH SO 8 5 FED 003
No. 1H Well

PROPOSED
TEMPORARY
PAD AREA
±3.26 Acres

T
26
S

Sec. 17

Bureau of Land Management
Proposed Pad- ±4.75 Acres



PAGE 1 OF 2

WELL PLAT

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

CHEVRON U.S.A. INC.
INTERIM RECLAMATION
HH SO 8 5 FED 003 NOS. 1H-6H WELLS
SECTION 17, 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: GDG

REVISIONS

PROJ. MGR.: GDG

No.

DATE:

REVISED BY:

DATE: 06/19/2017

No.

DATE:

REVISED BY:

FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 Reclamation.dwg

DISCLAIMER: At this time, C. H. Fenstermaker & Associates, L.L.C. has not performed nor was asked to perform any type of engineering, hydrological modeling, flood plain, or "No Rise" certification analyses, including but not limited to determining whether the project will impact flood hazards in connection with federal/FEMA, state, and/or local laws, ordinances and regulations. Accordingly, Fenstermaker makes no warranty or representation of any kind as to the foregoing issues, and persons or entities using this information shall do so at their own risk.

NOTE:

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.

NOTE:

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.

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.

*Not to be used for construction,
bidding, recordation, conveyance,
sales, or engineering design.*



Robert L. Lastrapes
Registration No. 23006

PAGE 2 OF 2

WELL PLAT

CHEVRON U.S.A. INC.
INTERIM RECLAMATION
HH SO 8 5 FED 003 NOS. 1H-6H WELLS
SECTION 17, 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: GDG		REVISIONS	
PROJ. MGR.: GDG	No.	DATE:	REVISED BY:
DATE: 06/19/2017	No.	DATE:	REVISED BY:
FILENAME: T:\2017\2175509\DWG\HH SO 8 5 FED 003 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	Exhibit 1, 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 6.8 miles on White City Road until the road reaches an intersection with Roadrunner Rd. Turn right onto this and travel 100 yards, then the access road and well location is on the right.

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

- There will be 1,136.45' of new road construction for this proposal (.52 acres)
- Ditches: See MDP
- Culverts: See MDP
- Road Cuts: See MDP

Location of Existing Wells

- 1-Mile radius map is attached

CHEVRON U.S.A. INC.

HH SO 8 5 FED 003 1H

NMNM 118108

SECTION 17, T26S, R27E (Off Lease SHL) SECTION 5, T26S, R27E

SHL 629' FNL & 2308' FWL

BHL 280' FNL & 2178' FEL

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

- **Facilities:** Existing production facilities located in the NE corner of Sec. 10, T26S-R27E where oil and gas sales will take place.
 - The existing facility is 500' X 700'
 - Gas compression will occur within the proposed facility boundaries
 - Gas purchaser pipeline is in place at the tank battery.
 - Open top tanks or open containments will be netted.
 - Open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting.
 - Facilities will have a secondary containment 1.5 times the holding capacity of largest storage tank.
 - All above ground structures will be painted non-reflective shale green for blending with surrounding environment.
 - The permanent water disposal system will be determined prior to construction of any water transfer pipeline. Until permanent water takeaway is available, produced water will be hauled off location in trucks.

Notification will be provided to BLM upon site selection and survey - plats (including SWD well information) will be provided.
- **Pipelines:** See Detail
 - Pipelines Include:
 - 4,583' of Flowlines carrying production (buried)
 - 4,600' Gas Lift Line carrying pressurized gas (buried)
 - 4,608' 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.

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

- Existing ponds in Section 9 & 10, T26S-R27E will be utilized for fresh water or recycled water.
- Fresh water will be obtained from a private water source.

CHEVRON U.S.A. INC.

HH SO 8 5 FED 003 1H

NMNM 118108

SECTION 17, T26S, R27E (Off Lease SHL) SECTION 5, T26S, R27E

SHL 629' FNL & 2308' FWL

BHL 280' FNL & 2178' FEL

Construction Materials (MDP SUPO Pg. 6)

- Caliche will be sourced from a Chevron operated NMSLO pit in S2 NW4 Section 16 T26S R27E, or an alternate private pit in Section 13, T24S R27E in Eddy County, NM.

Methods for Handling Waste

- Drilling fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility.
- Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.
- Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.
- After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at a state approved disposal facility.
- The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Well Site Layout

- Surveyor Plat
 - Exterior well pad dimensions are 545' x 380'
 - Interior well pad dimensions from point of entry (well head) of the well are N-335', S-210', E-120', W-260'. Total disturbance area needed for construction of well pad will be approximately 4.81 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 (see diagram)

Plans for Surface Reclamation (MDP SUPA Pg. 8)

Interim Reclamation Procedures

- Reclaimed pad size: 200' x 325' (approximately 1.5 acres)
- Reclaimed pad layout, topsoil location & erosion control features

CHEVRON U.S.A. INC.

HH SO 8 5 FED 003 1H

NMNM 118108

SECTION 17, T26S, R27E (Off Lease SHL) SECTION 5, T26S, R27E

SHL 629' FNL & 2308' FWL

BHL 280' FNL & 2178' FEL

Surface Ownership

- BLM Surface
 - Surface Tenant – Forehand Ranches, Inc.
- **Nearest Post Office:** Malaga Post Office; 11.4 Miles north

Other Information

- On-site performed by BLM NRS: Paul Murphy 1/6/2017
- Cultural report attached: Yes Participating Agreement attached: N/A

Chevron Representatives

Primary point of contact:

Jennifer Van Curen

Jennifer.VanCuren@arcadis-us.com

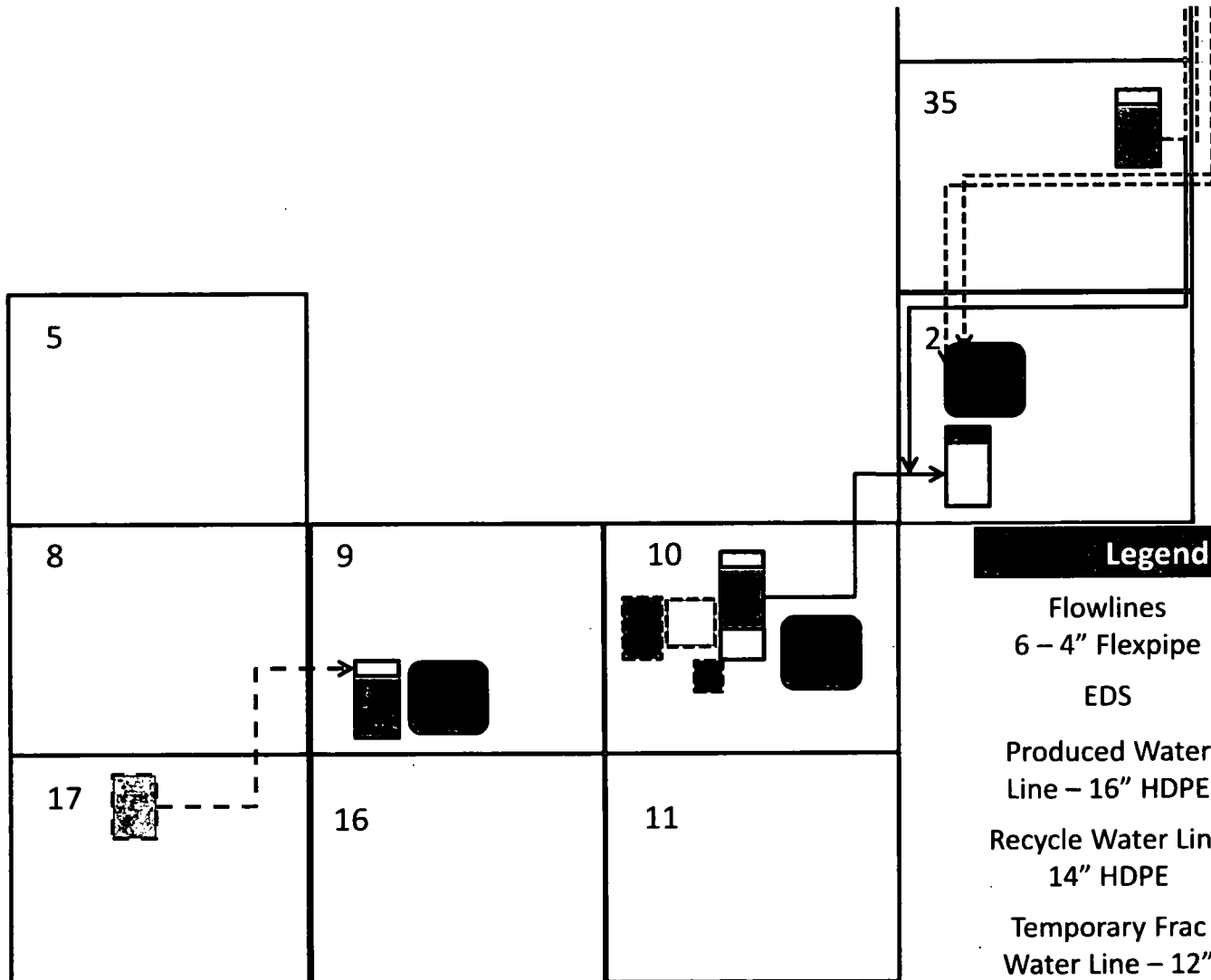
M- 432-270-8753

CHEVRON U.S.A. INC.
HH SO 8 5 FED 003 1H
NMNM 118108
SECTION 17, T26S, R27E (Off Lease SHL) SECTION 5, T26S, R27E
SHL 629' FNL & 2308' FWL BHL 280' FNL & 2178' FEL

Chevron Functional Contacts

Project Manager Name: Justin Freeman Address: 1400 Smith Street Houston, TX 77002 Phone: 713-372-2151 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: 432-770-7564 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 K. Fuentes Address: 6301 Deauville BLVD Midland TX 79706 Office: (432) 687-7631 Email: djvo@chevron.com

PKG 5 DETAILS



Legend	
Flowlines	----
6 – 4" Flexpipe	----
EDS	----
Produced Water Line – 16" HDPE	----
Recycle Water Line 14" HDPE	----
Temporary Frac Water Line – 12" Layflat	----

Legend	
Wellpad	
Gravitas SWD wellpad	
IT Tower	
CTB 35	
Electric Compressor	
Electric Sub-station	
Gravitas SWD Facility	
Recycle	

HHNM Rig 2/3

Facilities Scope – 2017/8

HH SO 8/5 P3 (6 wells x 10,000 ft) PKG 6

- SPUD:
- CTB 9: *Upgrade Adding HP Header, LP Header VRU, LACT, LP Tester*
- New SWD Sec 26:
 - 2-Trains; 7 H-pumps
 - 10,000 BBL recycle Train ~ \$850,000
 - SWD WellPad
 - SWD Injection Line
 - Recycle Water P/L from SWD 26 to Pond 4
 - EDS from CTB 35 to SWD 26
 - P/L: 1.0 Mile (Produced Water from CTB 35 to SWD 26)
- Electrical Compressor
 - Sub-Station
 - Sub-Station Transformer Upgrade for EDS
 - Compressor Pad
- Well: Pad, 2.0 mi F/L x 6 well
- Gas Lift: 0.5 mi
- IT Towers (2)
 - Pad Locations
 - Fiber Optic Cable ROW ~ 1.5 miles





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

07/16/2018

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: