AFMSS

U.S. Department of the Interior
Bureau of Land Management

Application for Permit to Drill

APD Package Report

Date Printed: 09/20/2023 07:23 AM

APD ID:	10400085829	Well Status:	AAPD
APD Received Date:	06/03/2022 08:14 AM	Well Name:	KOALA 9 FED COM
Operator:	COLGATE OPERATING LLC	Well Number:	114H

APD Package Report Contents

- Form 3160-3

- Operator Certification Report

- Application Report
- Application Attachments
  -- Well Plat: 2 file(s)

- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 1 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 1 file(s)
  -- Casing Spec Documents: 2 file(s)
  -- Casing Design Assumptions and Worksheet(s): 4 file(s)
  -- Hydrogen sulfide drilling operations plan: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 2 file(s)
  -- Other Facets: 1 file(s)
  -- Other Variances: 2 file(s)

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 1 file(s)
  -- New Road Map: 1 file(s)
  -- Attach Well map: 1 file(s)
  -- Production Facilities map: 1 file(s)
  -- Water source and transportation map: 1 file(s)
  -- Construction Materials source location attachment: 1 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Recontouring attachment: 1 file(s)
  -- Other SUPO Attachment: 2 file(s)

- PWD Report
- PWD Attachments

-- None

- Bond Report
- Bond Attachments
  -- None

Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM15003

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.: KOALA 9 FED COM 114H

2. Name of Operator: COLGATE OPERATING LLC

9. API Well No.: 30-015-54198

3a. Address: 300 N MARIENFELD STREET SUITE 1000, MIDLAND, TX

3b. Phone No. *(include area code)*: (432) 695-4272

10. Field and Pool, or Exploratory: 1ST BONE SPRING SAND/BURTON FLA

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

At surface: SESE / 1144 FSL / 105 FEL / LAT 32.5839683 / LONG -104.1915225

At proposed prod. zone: SESE / 330 FSL / 10 FEL / LAT 32.581881 / LONG -104.156685

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 8/T20S/R28E/NMP

14. Distance in miles and direction from nearest town or post office*: 11 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 105 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 320.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1260 feet

19. Proposed Depth: 6303 feet / 16890 feet

20. BLM/BIA Bond No. in file: FED: NMB001382

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3274 feet

22. Approximate date work will start*: 09/30/2022

23. Estimated duration: 90 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	MIKAH THOMAS / Ph: (432) 695-4224	06/03/2022

Title: Regulatory Manager

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	CODY LAYTON / Ph: (575) 234-5959	08/25/2023

Title	Office
Assistant Field Manager Lands & Minerals	Carlsbad Field Office

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 08/25/2023

INSTRUCTIONS

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

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

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

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

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

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

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

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

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

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

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

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

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

(Continued on page 3)

Approval Date: 08/25/2023

Additional Operator Remarks

Location of Well

0. SHL: SESE / 1144 FSL / 105 FEL / TWSP: 20S / RANGE: 28E / SECTION: 8 / LAT: 32.5839683 / LONG: -104.1915225 (TVD: 0 feet, MD: 0 feet)

PPP: SWSW / 330 FSL / 100 FWL / TWSP: 20S / RANGE: 28E / SECTION: 9 / LAT: 32.581733 / LONG: -104.190914 (TVD: 6303 feet, MD: 6400 feet)

PPP: SWSE / 330 FSL / 2667 FWL / TWSP: 20S / RANGE: 28E / SECTION: 9 / LAT: 32.581767 / LONG: -104.182578 (TVD: 6303 feet, MD: 9167 feet)

PPP: SWSW / 330 FSL / 0 FEL / TWSP: 20S / RANGE: 28E / SECTION: 10 / LAT: 32.581685 / LONG: -104.173916 (TVD: 6303 feet, MD: 11834 feet)

BHL: SESE / 330 FSL / 10 FEL / TWSP: 20S / RANGE: 28E / SECTION: 10 / LAT: 32.581881 / LONG: -104.156685 (TVD: 6303 feet, MD: 16890 feet)

BLM Point of Contact

Name: GAVIN MICKWEE
Title: Land Law Examiner
Phone: (575) 234-5972
Email: gmickwee@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.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Colgate**
LEASE NO.:	**NMNM15003**
LOCATION:	Section 8, T.20 S, R.28 E., NMPM
COUNTY:	Eddy County, New Mexico
WELL NAME & NO.:	Koala 9 Fed Com 114H
SURFACE HOLE FOOTAGE:	1144'/S & 105'/E
BOTTOM HOLE FOOTAGE:	330'/S & 10'/E

COA

H_2S	◉ Yes	○ No		
Potash / WIPP	◉ None	○ Secretary	○ R-111-P	☐ WIPP
Cave / Karst	○ Low	○ Medium	◉ High	○ Critical
Wellhead	○ Conventional	◉ Multibowl	○ Both	○ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Break Testing	☐ Water Disposal	☑ COM	☐ Unit
Variance	☑ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☑ Capitan Reef
Variance	☐ Four-String	☑ Offline Cementing	☐ Fluid-Filled	☐ Open Annulus
☐ **Batch APD / Sundry**				

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware Group** formation. As a result, the Hydrogen Sulfide area must meet all requirements from **43 CFR 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **340** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite, above the salt, and below usable fresh water) 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

 Approval Date: 08/25/2023

include the lead cement)

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

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef.

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

❖ In <u>Capitan Reef Areas</u> if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)

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

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

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
   - Cement should tie-back at least **200 feet** into the previous casing, whichever is greater. **Excess calculates to 1%. Additional cement maybe required.**

 Approval Date: 08/25/2023

C. PRESSURE CONTROL

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

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the casing shoe shall be **5000 (5M)** psi.

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

Offline Cementing

Contact the BLM prior to the commencement of any offline cementing procedure. Offline Cementing will be conducted on the surface and intermediate casings.

GENERAL REQUIREMENTS

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

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

☒ Eddy County
Email **or** call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, **BLM_NM_CFO_DrillingNotifications@BLM.GOV**
(575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

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 **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

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

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

A. CASING

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

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

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

 Approval Date: 08/25/2023

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 **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

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

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

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

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

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

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

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

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

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

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.

ZS 8/22/2023

 Approval Date: 08/25/2023

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

Operator Certification Data Report

09/20/2023

Operator

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: MIKAH THOMAS **Signed on:** 07/21/2023

Title: Regulatory Manager

Street Address: 1400 WOODLOCH FOREST DR SUITE 300

City: THE WOODLANDS **State:** TX **Zip:** 77380

Phone: (432)661-7106

Email address: MTHOMAS@EARTHSTONEENERGY.COM

Field

Representative Name:

Street Address:

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

Phone:

Email address:

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

Application Data
09/20/2023

APD ID: 10400085829
Submission Date: 06/03/2022
Operator Name: COLGATE OPERATING LLC
Well Name: KOALA 9 FED COM
Well Number: 114H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400085829
Tie to previous NOS? N
Submission Date: 06/03/2022
BLM Office: Carlsbad
User: MIKAH THOMAS
Title: Regulatory Manager
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM15003
Lease Acres:
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? Y
Permitting Agent? NO
APD Operator: COLGATE OPERATING LLC
Operator letter of

Operator Info

Operator Organization Name: COLGATE OPERATING LLC
Operator Address: 300 N MARIENFELD STREET SUITE 1000
Zip: 79701
Operator PO Box:
Operator City: MIDLAND
State: TX
Operator Phone: (432)695-4272
Operator Internet Address: MTHOMAS@COLGATEENERGY.COM

Section 2 - Well Information

Well in Master Development Plan? NO
Master Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: KOALA 9 FED COM
Well Number: 114H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: 1ST BONE SPRING SAND
Pool Name: BURTON FLAT, MORROW (PRO GAS)

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

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

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** N **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** KOALA 9 FED COM SOUTH **Number:** 1

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 11 Miles **Distance to nearest well:** 1260 FT **Distance to lease line:** 105 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: 10327__KOALA_9_FED_COM_114H_C102_SIGNED_20230307152746.pdf

10327__KOALA_9_FED_COM_114H_C102_Rev_1_20230307152751.pdf

Well work start Date: 09/30/2022 **Duration:** 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 12177 **Reference Datum:** KELLY BUSHING

Wellbore	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	Will this well produce from this
SHL Leg #1	1144	FSL	105	FEL	20S	28E	8	Aliquot SESE	32.5839683	-104.1915225	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	3274	0	0	N
KOP Leg #1	414	FSL	70	FEL	20S	28E	8	Aliquot SESE	32.5819619	-104.1916491	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-2451	5785	5725	N

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

Wellbore	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	Will this well produce from this
PPP Leg #1-1	330	FSL	100	FWL	20S	28E	9	Aliquot SWSW	32.581733	-104.190914	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 15003	-3029	6400	6303	Y
PPP Leg #1-2	330	FSL	2667	FWL	20S	28E	9	Aliquot SWSE	32.581767	-104.182578	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 13232	-3029	9167	6303	Y
PPP Leg #1-3	330	FSL	0	FEL	20S	28E	10	Aliquot SWSW	32.581685	-104.173916	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 16101	-3029	11834	6303	Y
EXIT Leg #1	330	FSL	100	FEL	20S	28E	10	Aliquot SESE	32.58188	-104.156977	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 15003	-3029	16780	6303	Y
BHL Leg #1	330	FSL	10	FEL	20S	28E	10	Aliquot SESE	32.581881	-104.156685	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 15003	-3029	16890	6303	N

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-54198	73280	Burton Flat; Morrow (Pro Gas)

4 Property Code	5 Property Name	6 Well Number
334680	KOALA 9 FED COM	114H

7 OGRID No.	8 Operator Name	9 Elevation
371449	COLGATE ENERGY LLC	3274.06'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	8	20-S	28-E		1144'	SOUTH	105'	EAST	EDDY

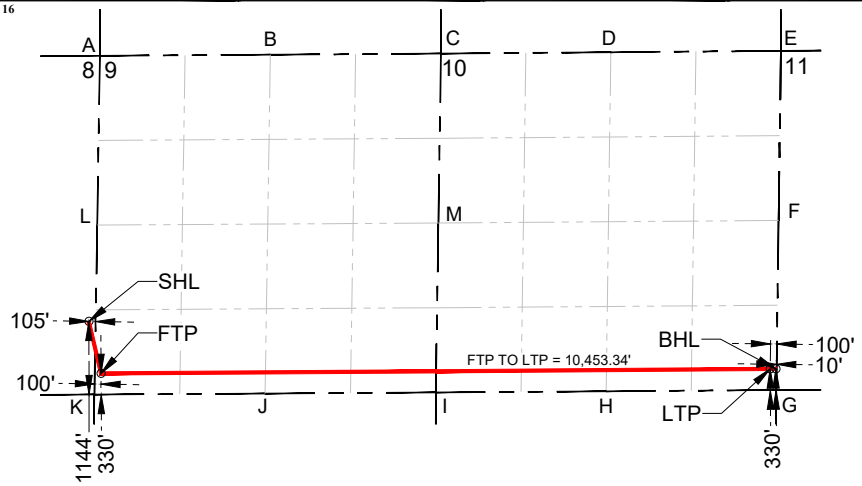
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	10	20-S	28-E		330'	SOUTH	10'	EAST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16



SURFACE HOLE LOCATION (SHL)
NEW MEXICO EAST - NAD 83
X=585013.28 LAT.= 32.58396830° N
Y=576207.48 LONG.= 104.19153225° W
NEW MEXICO EAST - NAD 27
X=543833.09 LAT.= 32.58385106° N
Y=576146.07 LONG.= 104.19102480° W
1144' FSL, 105' FEL - SECTION 8

FIRST TAKE POINT (FTP)
NEW MEXICO EAST - NAD 83
X=585204.76 LAT.= 32.58173336° N
Y=575394.66 LONG.= 104.19091412° W
NEW MEXICO EAST - NAD 27
X=544024.55 LAT.= 32.58161609° N
Y=575333.27 LONG.= 104.19040675° W
330' FSL, 100' FWL - SECTION 9

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=595657.87 LAT.= 32.58187985° N
Y=575463.61 LONG.= 104.15697685° W
NEW MEXICO EAST - NAD 27
X=554477.63 LAT.= 32.58176222° N
Y=575402.14 LONG.= 104.15647035° W
330' FSL, 100' FEL - SECTION 10

BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=595747.89 LAT.= 32.58188120° N
Y=575464.25 LONG.= 104.15668460° W
NEW MEXICO EAST - NAD 27
X=554567.65 LAT.= 32.58176356° N
Y=575402.77 LONG.= 104.15617811° W
330' FSL, 10' FEL - SECTION 10

CORNER DATA
NEW MEXICO EAST - NAD 83
A - FOUND IRON PIPE W/BRASS CAP N:580356.62' E:585185.65'
B - FOUND 1" IRON PIPE N:580373.68' E:587849.16'
C - FOUND 1" IRON PIPE N:580391.30' E:590513.47'
D - FOUND 1" IRON PIPE N:580412.62' E:593168.80'
E - FOUND 1" IRON PIPE N:580433.88' E:595824.69'
F - FOUND IRON PIPE W/ BRASS CAP N:577783.78' E:595789.28'
G - FOUND IRON PIPE W/ BRASS CAP N:575134.28' E:595753.43'
H - FOUND IRON PIPE W/ BRASS CAP N:575115.45' E:593094.38'
I - FOUND 2" IRON PIPE N:575097.10' E:590435.59'
J - FOUND 1 1/4" IRON PIPE N:575080.69' E:587767.05'
K - FOUND IRON PIPE W/BRASS CAP N:575063.99' E:585099.23'
L - FOUND IRON PIPE W/ BRASS CAP N:577711.68' E:585143.38'
M - FOUND 1" IRON PIPE N:577744.14' E:590473.87'

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

E-mail Address

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyor:

MARK J. MURRAY
NEW MEXICO
12177
REGISTERED PROFESSIONAL SURVEYOR

5/5/2022

Certificate Number

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
	73280	BURTON FLAT, MORROW (PRO GAS)

4 Property Code	5 Property Name	6 Well Number
	KOALA 9 FED COM	114H

7 OGRID No.	8 Operator Name	9 Elevation
371449	COLGATE OPERATING, LLC	3274.06'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	8	20-S	28-E		1144'	SOUTH	105'	EAST	EDDY

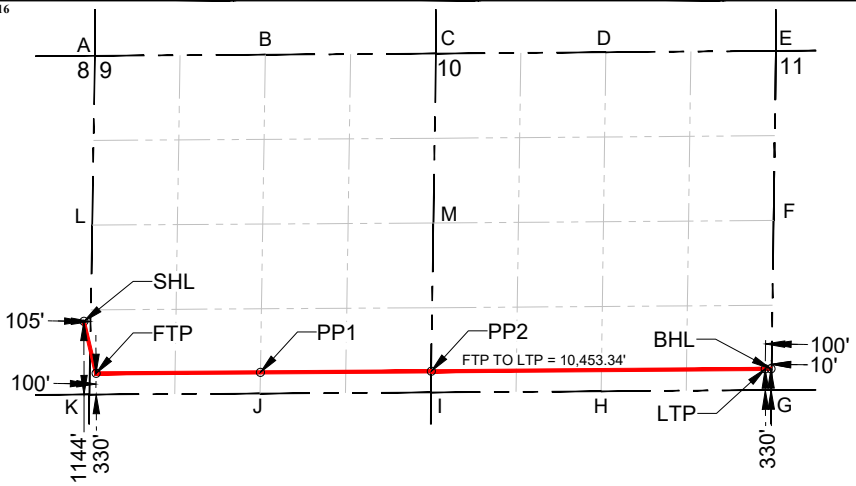
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	10	20-S	28-E		330'	SOUTH	10'	EAST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]



SURFACE HOLE LOCATION (SHL)
NEW MEXICO EAST - NAD 83
X=585013.28 LAT.= 32.58396830° N
Y=576207.48 LONG.= 104.19153225° W
NEW MEXICO EAST - NAD 27
X=543833.09 LAT.= 32.58385106° N
Y=576146.07 LONG.= 104.19102480° W
1144' FSL, 105' FEL - SECTION 8

FIRST TAKE POINT (FTP)
NEW MEXICO EAST - NAD 83
X=585204.76 LAT.= 32.58173336° N
Y=575394.66 LONG.= 104.19091412° W
NEW MEXICO EAST - NAD 27
X=544024.55 LAT.= 32.58161609° N
Y=575333.27 LONG.= 104.19040675° W
330' FSL, 100' FWL - SECTION 9

CORNER DATA
NEW MEXICO EAST - NAD 83
A - FOUND IRON PIPE W/BRASS CAP N:580356.62' E:585185.65'
B - FOUND 1" IRON PIPE N:580373.68' E:587849.16'
C - FOUND 1" IRON PIPE N:580391.30' E:590513.47'
D - FOUND 1" IRON PIPE N:580412.62' E:593168.80'
E - FOUND 1" IRON PIPE N:580433.88' E:595824.69'
F - FOUND IRON PIPE W/ BRASS CAP N:577783.78' E:595789.28'
G - FOUND IRON PIPE W/ BRASS CAP N:575134.28' E:595753.43'
H - FOUND IRON PIPE W/ BRASS CAP N:575115.45' E:593094.38'
I - FOUND 2" IRON PIPE N:575097.10' E:590435.59'
J - FOUND 1 1/4" IRON PIPE N:575080.69' E:587767.05'
K - FOUND IRON PIPE W/BRASS CAP N:575063.99' E:585099.23'
L - FOUND IRON PIPE W/ BRASS CAP N:577711.68' E:585143.38'
M - FOUND 1" IRON PIPE N:577744.14' E:590473.87'

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=595657.87 LAT.= 32.58187985° N
Y=575463.61 LONG.= 104.15697685° W
NEW MEXICO EAST - NAD 27
X=554477.63 LAT.= 32.58176222° N
Y=575402.14 LONG.= 104.15647035° W
330' FSL, 100' FEL - SECTION 10

BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=595747.89 LAT.= 32.58188120° N
Y=575464.25 LONG.= 104.15668460° W
NEW MEXICO EAST - NAD 27
X=554567.65 LAT.= 32.58176356° N
Y=575402.77 LONG.= 104.15617811° W
330' FSL, 10' FEL - SECTION 10

PENETRATION POINT 1 (PP1)
NEW MEXICO EAST - NAD 83
X=587772.17 LAT.= 32.58176742° N
Y=575410.59 LONG.= 104.18257873° W
NEW MEXICO EAST - NAD 27
X=546591.95 LAT.= 32.58165006° N
Y=575349.18 LONG.= 104.18207157° W
330' FSL, 2667' FWL - SECTION 9

PENETRATION POINT 2 (PP2)
NEW MEXICO EAST - NAD 83
X=590440.36 LAT.= 32.58180223° N
Y=575427.14 LONG.= 104.17391614° W
NEW MEXICO EAST - NAD 27
X=549260.14 LAT.= 32.58168478° N
Y=575365.71 LONG.= 104.17340921° W
330' FSL, 0' FEL - SECTION 9

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

01/18/2023
Date of Survey

Signature and Seal of Professional Surveyor:

CHARLES G. URIOA NEW MEXICO 25490 PROFESSIONAL SURVEYOR

Certificate Number

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

Drilling Plan Data Report
09/20/2023

APD ID: 10400085829
Submission Date: 06/03/2022

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM
Well Number: 114H

Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12017440	RUSTLER	3274	227	227	ANHYDRITE, LIMESTONE, SALT	NONE	N
12017445	TOP SALT	2906	368	368	ANHYDRITE, SALT	NONE	N
12017446	TANSILL	2570	704	704	ANHYDRITE, DOLOMITE	NONE	N
12017451	YATES	2495	779	779	DOLOMITE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017448	SEVEN RIVERS	2120	1154	1154	ANHYDRITE, DOLOMITE, SANDSTONE, SHALE	NONE	N
12017449	QUEEN	1450	1824	1824	ANHYDRITE, DOLOMITE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017453	GRAYBURG	1220	2054	2054	ANHYDRITE, DOLOMITE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017455	SAN ANDRES	870	2404	2404	ANHYDRITE, DOLOMITE	NATURAL GAS, OIL	N
12017457	CHERRY CANYON	295	2979	2979	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017473	BRUSHY CANYON	-80	3354	3354	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017458	BONE SPRING LIME	-1380	4654	4654	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017463	BONE SPRING 1ST	-2830	6104	6104	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y
12017470	BONE SPRING 2ND	-3880	7154	7154	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017471	BONE SPRING 3RD	-5030	8304	8304	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017472	WOLFCAMP	-5430	8704	8704	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

Pressure Rating (PSI): 5M **Rating Depth:** 6403

Equipment: BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing;

Requesting Variance? YES

Variance request: Flex hose and offline cement variances, see attachments in section 8.

Testing Procedure: The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30-day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed OP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Choke Diagram Attachment:

Choke_Diagram_Attachment_20230718130320.pdf

BOP Diagram Attachment:

BOP_Diagram_Attachment_20230718130323.pdf

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

Choke_Diagram_Attachment_20230718130320.pdf

BOP_Diagram_Attachment_20230718130323.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	378	0	378	3274	2896	378	J-55	54.5	BUTT	6.05	3.07	DRY	7.54	DRY	7.07
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2929	0	2929	3274	345	2929	J-55	36	BUTT	3.63	1.83	DRY	3.11	DRY	2.75
3	PRODUCTION	8.75	5.5	NEW	NON API	N	0	6385	0	6221	3274	-2947	6385	P-110	17	OTHER - GEOCONN	2.28	2.38	DRY	2.64	DRY	2.64
4	PRODUCTION	7.875	5.5	NEW	NON API	N	6385	16890	6221	6303	-2947	-3029	10505	P-110	17	OTHER - GEOCONN	2.28	2.38	DRY	2.64	DRY	2.64

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Worksheet_20230718130420.pdf

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

Casing Attachments

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Worksheet_20230718130450.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Connection_Data_Sheet_P110RY_GeoConn_SC_20230718130518.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Worksheet_20230718130539.pdf

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

Connection_Data_Sheet_P110RY_GeoConn_SC_20230718130619.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Worksheet_20230718130636.pdf

Section 4 - Cement

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	0	0	0	0	0		0	0
SURFACE	Tail		0	378	300	1.34	14.8	400	50	Class C	Accelerator
INTERMEDIATE	Lead		0	2340	510	2.08	12.7	1060	50	Class C	Salt, Extender & LCM Additives
INTERMEDIATE	Tail		2340	2929	210	1.34	14.8	280	50	Class C	Accelerator
PRODUCTION	Lead		2429	5785	480	2.41	11.5	1150	40	Class H	POZ, Extender, Fluid Loss, Dispersant & Retarder
PRODUCTION	Tail		5785	16890	1430	1.73	12.5	2470	25	Class H	POZ, Extender, Fluid Loss, Dispersant & Retarder
PRODUCTION	Lead		2429	5785	480	2.41	11.5	1150	40	Class H	POZ, Extender, Fluid Loss, Dispersant & Retarder
PRODUCTION	Tail		5785	16890	1430	1.73	12.5	2470	25	Class H	POZ, Extender, Fluid Loss, Dispersant & Retarder

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: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

Circulating Medium Table

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

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	378	WATER-BASED MUD	8.6	9.5							
378	2929	SALT SATURATED	10	10							
2929	6385	OTHER : BRINE	9	10							
6385	16890	OIL-BASED MUD	9	10							

Section 6 - Test, Logging, Coring

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

Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.

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

GAMMA RAY LOG,DIRECTIONAL SURVEY,

Coring operation description for the well:

N/A.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 3280 **Anticipated Surface Pressure:** 1893

Anticipated Bottom Hole Temperature(F): 122

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

Colgate_H2S_Contingency_Plan_20220602142028.pdf

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM **Well Number:** 114H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

_B08__Koala_9_Fed_Com_114H_APD_Rev00_20220603071448.pdf

_B08__Koala_9_Fed_Com_114H_APD_Rev00_AC_20230721075625.pdf

Other proposed operations facets description:

Please see attached Drilling Plan, including multi-bowl diagram and procedure, proposed WBD, and casing connection data sheet. We also plan to batch drill this well along with offline cementing, see details under variance request below. Permian Resources Operating, LLC requests to use a flex hose on H&P choke manifold for this well. The Flex Hose specifications are attached below.

Other proposed operations facets attachment:

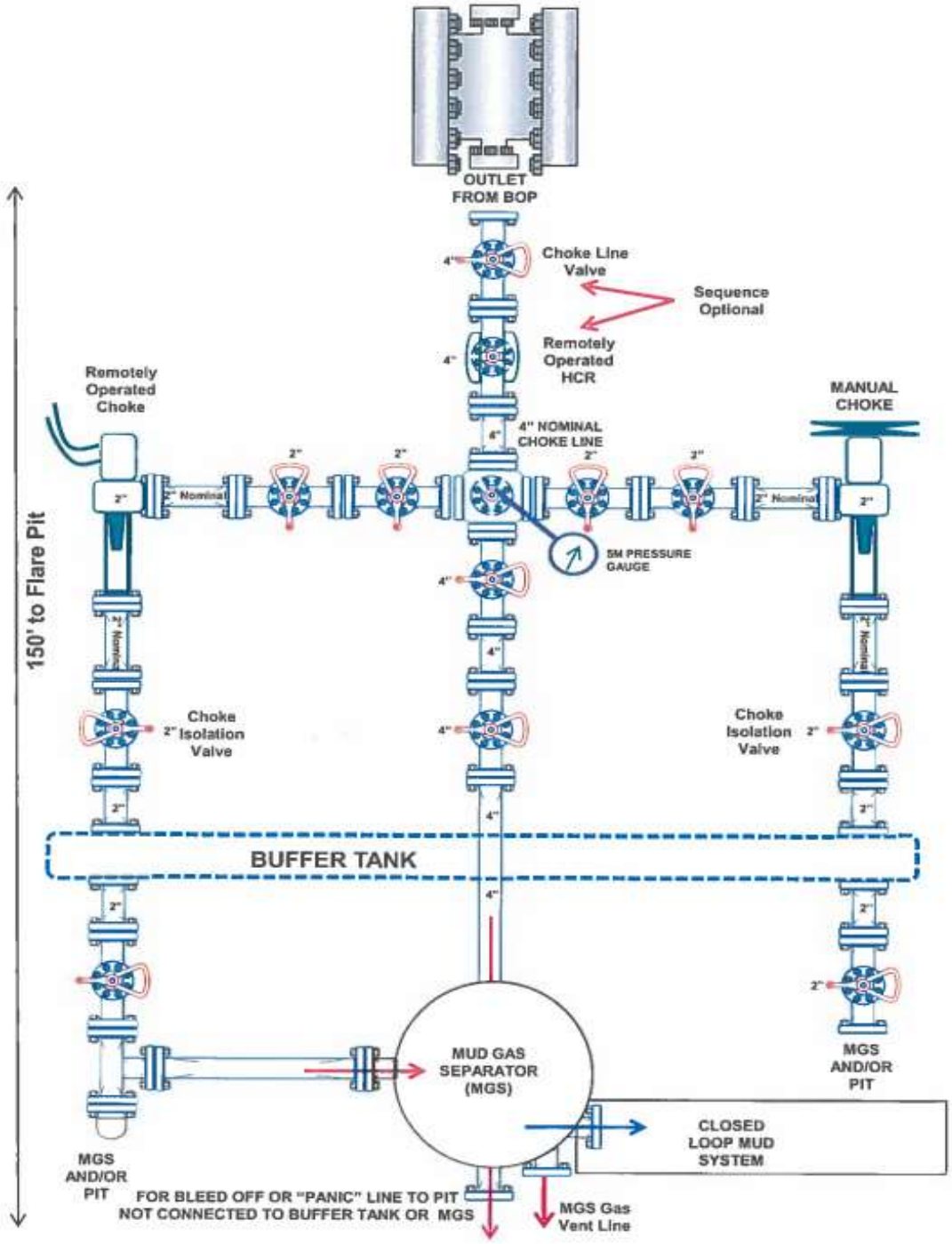
Koala_9_Fed_Com_114H_drilling_packet_20230721075653.pdf

Other Variance attachment:

Flex_Hose_Data_Sheet_20230721075708.pdf

Multi_well_Pad_Batch_Drilling___Offline_Cement_Procedure_20230721075712.pdf

5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



Continental
ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 9 / 113

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE					CERT. N°:	504	
PURCHASER:	ContiTech Oil & Marine Corp.				P.O. N°:	4500409659	
CONTITECH RUBBER order N°:	538236		HOSE TYPE:	3" ID	Choke and Kill Hose		
HOSE SERIAL N°:	67255		NOMINAL / ACTUAL LENGTH:		10,67 m / 10,77 m		
W.P. 68,9 MPa	10000 psi		T.P. 103,4 MPa	15000 psi	Duration:	60	min.

Pressure test with water at
ambient tempecature

See attachment. (1 page)

↑ 10 mm = 10 Min.
→ 10 mm = 20 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	9251	9254	AISI 4130	A0579N
4 1/16" 10K API b.w. Flange end			AISI 4130	035608

Not Designed For Well Testing

API Spec 16 C

Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

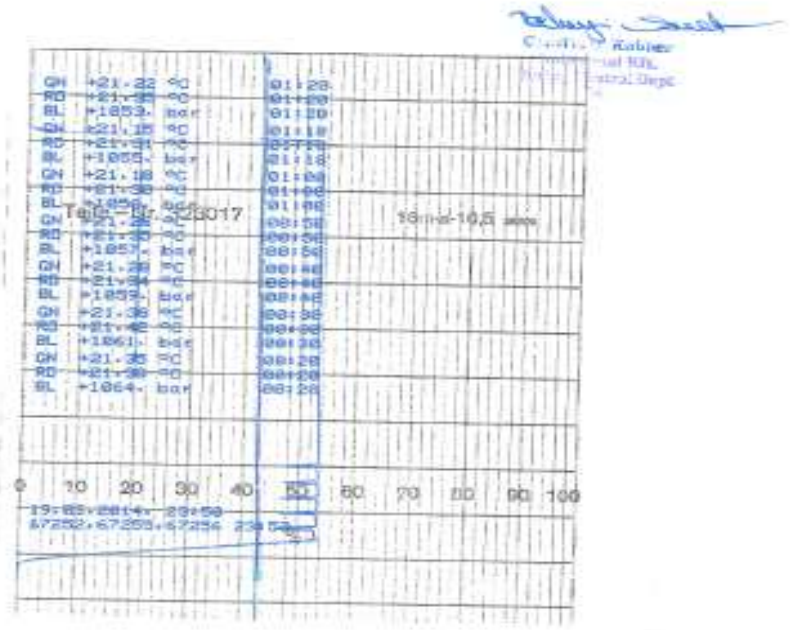
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

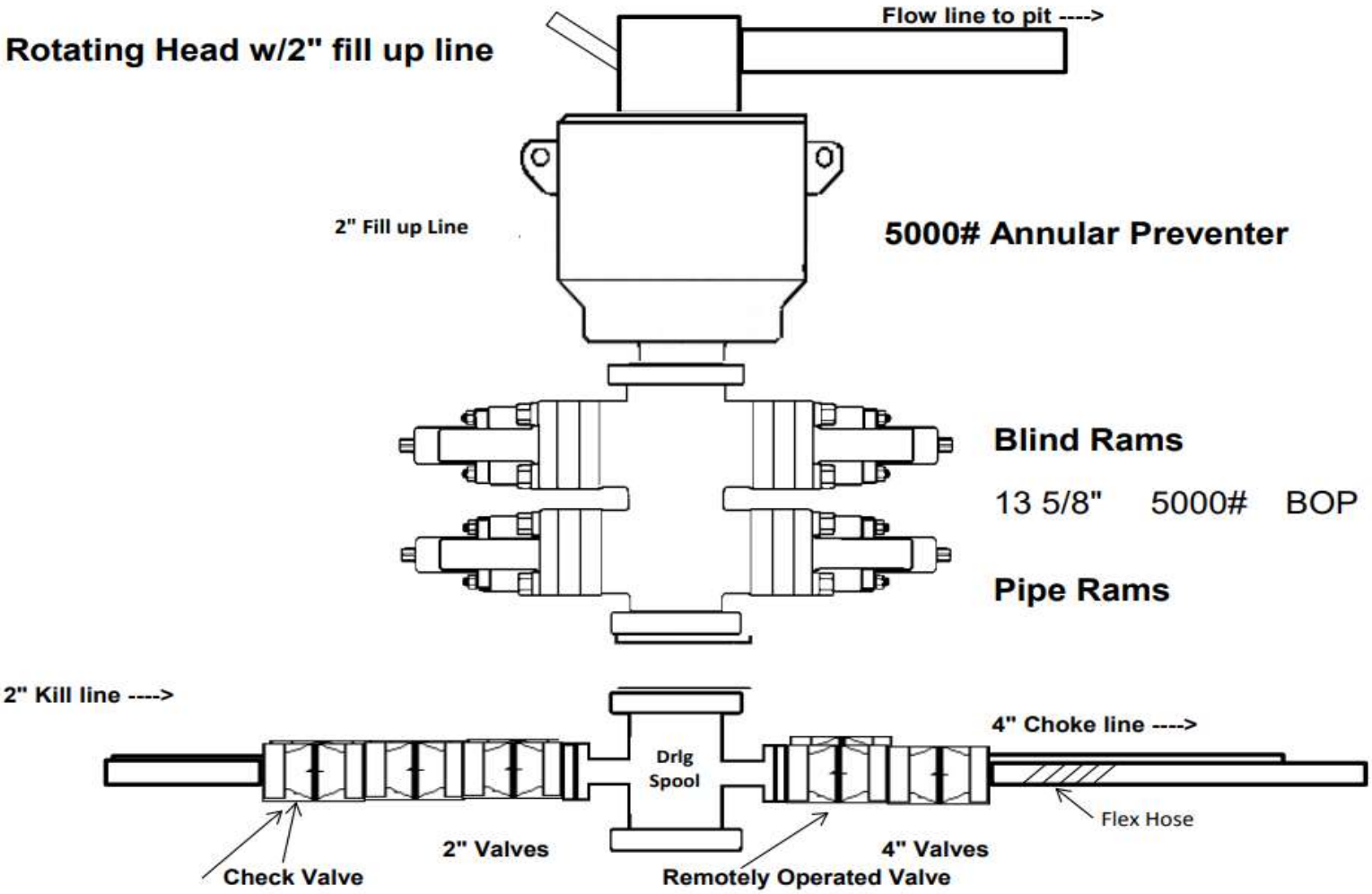
Date:	Inspector	Quality Control
20. March 2014.		

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 501, 504, 505

Page: 1 / 1



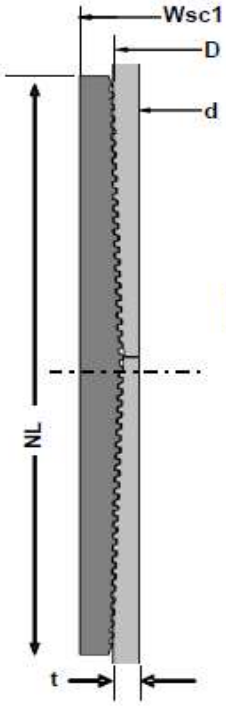
5,000 psi BOP Schematic



Metal One Corp.	GEOCONN-SC Pipe: SeAH P110RY 95%PBW (SMYS110ksi) *1 Coupling: P110RY (SMYS110ksi) Connection Data Sheet	Page	MAI GC 5.5 17 SeAH P110RY 95%RBW+SC-Cplg6.050 P110RY
Metal One		Date	3-Feb-21
		Rev.	0

Geometry

GEOCONN-SC



Pipe Body

		Imperial		S.I.	
Grade *1	P110RY	-	P110RY	-
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	17.00	lb/ft	25.33	kg/m
Wall Thickness (t)	0.304	in	7.72	mm
Pipe ID (d)	4.892	in	124.26	mm
Drift Dia.	4.767	in	121.08	mm

Connection

Coupling SMYS	110	ksi	110	ksi
SC-Coupling OD (Wsc1)	6.050	in	153.67	mm
Coupling Length (NL)	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	4.96	in^2	3,202	mm^2
Box Critical Area	6.10	in^2	3,937	mm^2
Thread Taper	1 / 16 (3/4" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

		Imperial		S.I.	
S.M.Y.S. *1	546	kips	2,428	kN
M.I.Y.P. *1	11,550	psi	79.66	MPa
Collapse Strength *1	7,480	psi	51.59	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1: SeAH P110RY 95%RBW: SMYS110ksi, MIYP11,550psi

Performance Properties for Connection

Min. Connection Joint Strength	100% of S.M.Y.S.
Min. Compression Yield	100% of S.M.Y.S.
Internal Pressure	100% of M.I.Y.P.
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	>90

Recommended Torque

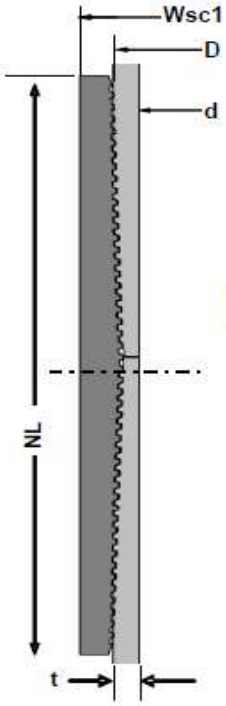
Min.	10,800	ft-lb	14,600	N-m
Opti.	12,000	ft-lb	16,200	N-m
Max.	13,200	ft-lb	17,800	N-m
Operational Max.	15,600	ft-lb	21,100	N-m

Note : Operational Max. torque can be applied for high torque application

Metal One Corp.	GEOCONN-SC Pipe: SeAH P110RY 95%PBW (SMYS110ksi) *1 Coupling: P110RY (SMYS110ksi) Connection Data Sheet	Page	MAI GC 5.5 17 SeAH P110RY 95%RBW+SC-Cplg6.050 P110RY
Metal One		Date	3-Feb-21
		Rev.	0

Geometry

GEOCONN-SC



Pipe Body	Imperial		S.I.	
Grade *1	P110RY	-	P110RY	-
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	17.00	lb/ft	25.33	kg/m
Wall Thickness (t)	0.304	in	7.72	mm
Pipe ID (d)	4.892	in	124.26	mm
Drift Dia.	4.767	in	121.08	mm

Connection				
Coupling SMYS	110	ksi	110	ksi
SC-Coupling OD (Wsc1)	6.050	in	153.67	mm
Coupling Length (NL)	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	4.96	in^2	3,202	mm^2
Box Critical Area	6.10	in^2	3,937	mm^2
Thread Taper	1 / 16 (3/4" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body	Imperial		S.I.	
S.M.Y.S. *1	546	kips	2,428	kN
M.I.Y.P. *1	11,550	psi	79.66	MPa
Collapse Strength *1	7,480	psi	51.59	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1: SeAH P110RY 95%RBW: SMYS110ksi, MIYP11,550psi

Performance Properties for Connection	
Min. Connection Joint Strength	100% of S.M.Y.S.
Min. Compression Yield	100% of S.M.Y.S.
Internal Pressure	100% of M.I.Y.P.
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	>90

Recommended Torque				
Min.	10,800	ft-lb	14,600	N-m
Opti.	12,000	ft-lb	16,200	N-m
Max.	13,200	ft-lb	17,800	N-m
Operational Max.	15,600	ft-lb	21,100	N-m

Note : Operational Max. torque can be applied for high torque application

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate or Intermediate II

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

H_2S Contingency Plan

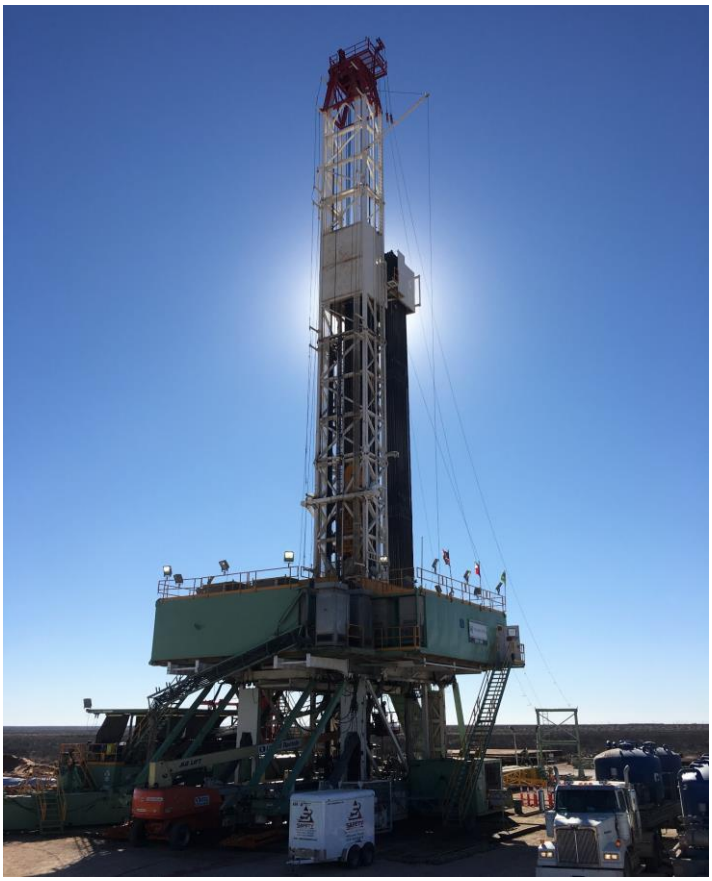


Table of Contents

I. EMERGENCY ASSISTANCE TELEPHONE LIST 3
II. H_2S CONTINGENCY PLAN SECTION 5
III. OPERATING PROCEDURES 7
IV. OPERATING CONDITIONS 10
V. EMERGENCY PROCEDURES 11
VI. POST EMERGENCY ACTIONS 14
VII. IGNITION PROCEDURES 15
VIII. TRAINING PROGRAM 16
IX. EMERGENCY EQUIPMENT 16
X. CHECKLISTS 20
XI. BRIEFING PROCEDURES 22
XII. EVACUATION PLAN 23
XIII. APPENDICES AND GENERAL INFORMATION 24

I. EMERGENCY ASSISTANCE TELEPHONE LIST

PUBLIC SAFETY	**911 or**
Sheriff's Department:	
Eddy County Sherriff's Office	(575) 887-7551
Fire Department:	
Carlsbad Fire Department	(575) 885-3125
Artesia Fire Department	(575) 746-5051
Ambulance:	
Elite Medical Transport (Carlsbad)	(915) 542-1144
Trans Aero MedEvac (Artesia)	(970) 657-7449
Hospitals:	
Carlsbad Medical Center	(575) 887-4100
Artesia General Hospital	(575) 748-3333
New Mexico Dept. of Transportation:	
Highway & Transportation Department	(505) 795- 1401
New Mexico Railroad Commission:	
Main Line	(505) 476-3441
OSHA 24 Hr. Reporting	(800) 321-6742
(8 hrs. after death or 24 hrs. after in-patient, amputation, loss of an eye)	

Office Contacts	911 or
Colgate Energy LLC.	**(432) 695-4222**
Vice President of Operations:	
Casey McCain	(432) 664-6140
Drilling Engineering Supervisor	
Rafael Madrid	(432) 556-6387
Drilling Engineering Technical Adviser	
Steven Segrest	(405) 550-0277
Operations Superintendent	
Rick Lawson	(432) 530- 3188
Drilling Superintendent	
Daniel Cameron	(405) 933-0435
Onsite Supervision (H&P 481 Rig Managers)	
Juan Gutierrez	(970)394-4768
Jonathan Jackson	(970)394-4768
Onsite Supervision (H&P 481 Company Men)	
Pierre Dupuis	(432)438-0114
Eric Rutherford	(432)438-0114
Rolando Torres	(432)438-0114
Trevor Hein	(432)438-0114

Emergency Accommodations	
Safety Solutions Office	(432) 563-0400
Safety Solutions Dispatch	(432) 556-2002
Craig Strasner	(432) 894-0341 (Cell)

II. H_2S CONTINGENCY PLAN SECTION

Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H_2S).

Objective:

Prevent any and all accidents and prevent the uncontrolled release of H_2S into the atmosphere.
Provide proper evacuation procedures to cope with emergencies.
Provide immediate and adequate medical attention should an injury occur.

Purpose, Distribution and Updating of Contingency Plan:

The Purpose of this contingency plan is to protect the general public from the harmful effects of H_2S accidentally escaping from the subject producing well. This plan is designed to accomplish its purpose by assuring the preparedness necessary to:

1. Minimize the possibility of releasing H_2S into the atmosphere during related operations.
2. Provide for the logical, efficient, and safe emergency actions required to protect the general public in the event of an accidental release of a potentially hazardous quantity of H_2S.

Supplemental information is included with this plan and is intended as reference material for anyone needing a more detailed understanding of the many factors pertinent to H_2S drilling operations safety. The release of a potentially hazardous quantity of H_2S is highly unlikely. If such a release should occur however, obviously the exact time, rate, duration, and other pertinent facts will be known in advance thus, this contingency plan must necessarily be somewhat general. The plan does review in detail, as is reasonably possible, the type of accidental release that could possibly endanger the general public, the probable extent of such danger, and the emergency actions generally appropriate. In the event of such an accidental release, the specific actions to be taken will have to be determined at the time of release by the responsible personnel at the drilling location. Complete familiarity with this plan will help such personnel make the proper decisions rapidly. Familiarity with this plan is so required all operators, operator representatives, and drilling contractor supervisory personnel who could possibly be on duty at the drilling location at the time of an H_2S emergency.

IT IS THE RESPONSIBILITY OF THE OPERATOR TO ASSURE SUCH FAMILIARITY BEFORE DRILLING WITHIN 1000' OR THREE DAYS PRIOR TO PENETRATION OF THE SHALLOWEST FORMATION KNOWN OR SUSPECTED TO CONTAIN H_2S IN POTENTIALLY HAZARDOUS QUANTITIES, AND ALSO TO ASSURE THE TIMELY ACCOMPLISHMENT OF ALL THE OTHER ACTION SPECIFIED HERE IN.

As this contingency plan was prepared considerably in advance of the anticipated H_2S operation, the plan must be kept current if it is to effectively serve its purpose. The operators will be responsible for seeing that all copies are updated. Updating the plan is required when any changes to the personnel Call List (Section) including telephone numbers occur or when any pertinent data or plans for the well are altered. The plan must also be updated when any changes in the general public likely to be within the exposure area in the event of an

accidental release from the well bore of a potentially hazardous quantity of H_2S. Two copies of this plan shall be retained at the office of Colgate Energy. Two copies shall be retained at the drilling location.

Discussion of Plan:

Suspected Problem Zones:

Implementation: This plan, with all details, is to be fully implemented 1000' before drilling into the first sour zone.

Emergency Response Procedure: This section outlines the conditions and denotes steps to be taken in the event of an emergency.

Emergency Equipment and Procedure: This section outlines the safety and emergency equipment that will be required for the drilling of this well.

Training Provisions: This section outlines the training provisions that must be adhered to 1000' before drilling into the first sour zone.

Emergency call list: Included are the telephone numbers of all persons that would need to be contacted, should an H_2S emergency occur.

Briefing: This section deals with the briefing of all persons involved with the drilling of this well.

Public Safety: Public Safety Personnel will be made aware of the drilling of this well.

Check Lists: Status check lists and procedural check lists have been included to ensure adherence to the plan.

General Information: A general information section has been included to supply support information.

III. OPERATING PROCEDURES

A. Blowout Preventer Drills

Due to the special piping and Mani folding necessary to handle poisonous gas, particular care will be taken to ensure that all rig personnel are completely familiar with their jobs during the drills. The Drilling Consultant and Tool Pusher (Rig Superintendent) are thoroughly familiar with the additional controls and piping necessary.

B. H_2S Alarm Drills

The Company Man and/ or designee will conduct frequent H_2S alarm drills for each crew by injecting a trace of H_2S where the detector will give an alarm. Under these conditions all personnel on location will put on air equipment and remain masked until all clear is announced.

C. Surface Annular Preventer/ Diverter System Testing

After installation of the surface annular preventer, Hydraulic Control Valve and diverter system, both are to be function tested. They also should be function tested frequently while drilling surface hole.

D. Blowout Preventer

After installation of the Blowout Preventer Stack, the stack will be pressure tested. The Choke manifold is also to be pressure tested at this time. This procedure will be repeated as required by the NMOCD, the BLM, or if any of the stack is nipped down. Also, at this time, the Blind and Pipe Rams are checked for correct operation.

E. Well Control Practice Drills and Safety Meeting for Crew Members

Pit drills are for the purpose of acquainting each member of the drilling crew with his duties in the event of an emergency. Drills will be held with each crew as frequently as required to thoroughly familiarize each man with his duties. Drills are to be held at least weekly from that time forward.

1. BOP Drill while on Bottom Drilling:
   A. Signal will be three or more long blast given by driller on the horn.

   B. Procedure will be as follows:
      1. Tool Pusher: Supervises entire operation.
      2. Driller
         a. Gives signal.
         b. Picks up Kelly.
         c. Stops pumps.
         d. Observes flow.
         e. Signal to close (pipe rams if necessary).
         f. Check that Choke Manifold is closed.
         g. Record drill pipe pressure, casing pressure and determine mud volume gain.
      3. Motorman
         a. Go to closing unit and standby for signal to close BOP.
         b. Close BOP in signal.
         c. Check on BOP closing.
         d. Go to floor to assist driller. (NOTE: During test drills the BOP

need not be completely closed at the discretion of the supervisor. Supervisor should make it very clear that it is a test drill only!)

4. Derrickman
    a. Check pumps.
    b. Go to floor for directions from the driller.
5. Floorman
    a. Go to manifold.
    b. Observe and record pressure.
    c. Check manifold and BOP for leaks.
    d. Check with driller for additional instructions.

2. BOP Drill While Making Trip:
    A. During trip driller will fill hole every five (5) stands and check the pits to be sure hole is taking mud.
    B. Drill Procedure is as follows:
        1. Driller
            a. Order Safety valve installed.
            b. Alert those not on the floor.
            c. Go to stations as described in above drill.

3. Safety Meetings
    A. Every person involved in the operating will be informed of the characteristics of H_2S, its danger and safety procedures to be used when it is encountered, and recommended first-aid procedure for regular rig personnel. This will be done through a series of talks made before spud.

    B. The Safety Advisor or Drilling Supervisor will conduct these training sessions and will repeat them as deemed necessary by him or as instructed by Colgate Energy. Talks may include the following subjects:
        1. Dangers of Hydrogen Sulfide (H_2S).
        2. Use and limitations of air equipment.
        3. Use of resuscitator.
        4. Organize Buddy System.
        5. First Aid procedures.
        6. Use of H_2S detection devices.
        7. Designate responsible people.
        8. Explain rig layout and policy to visitors.
            a. Designate smoking and safety or Muster area.
            b. Emphasize the importance of wind directions.
        9. Describe and explain operation of BOP stack, manifold, separator, and pit piping. Include maximum allowable pressure for casing procedure.
        10. Explain functions of Safety Supervisor.
        11. Explain organize H_2S Drills.
        12. Explain the overall emergency plan with emphasis given to the evacuation phase of the plans.

- Note: The above talks will be attended by every person involved in the operation. When drilling has reached a depth where H_2S is anticipated, temporary service personnel and visitors will be directed to the Drilling Consultant, who will designate the air equipment to be used by them in case of emergency, acquaint them with the dangers involved and be sure of their safety while they are in the area. He will point out the Briefing Areas, Windsocks, and Smoking Areas. He may refuse entrance to anyone, who in his opinion should not be admitted because of lack of safety equipment, special operations in progress or for other reasons involving personnel safety.

F. Outside Service Personnel

All service people such as cementing crews, logging crews, specialist, mechanics, and welders will furnish their own safety equipment. The Company Man/ or designee will be sure that the number of people on location does not exceed the number of masks on location, and they have been briefed regarding safety procedures. He will also be sure each of these people know about smoking and "Briefing Areas" and know what to do in case of an emergency alert or drill. Visitors will be restricted, except with special permission from the Drilling Consultant, when H_2S might be encountered. They will be briefed as to what to do in case of an alert or drill.

G. Onsite/ off shift workers

All workers that are staying on site must be identified as to where they are staying while off tour. If a drill/ or emergency takes place related to an H_2S release, each crew must have a designated person(s) that will wake them up and ensure that they are cleared to the appropriate muster area immediately.

H. Simultaneous Operations (SIMOPS)

If work is going on adjacent to the location is the responsibility of the Drilling Consultant or designee to communicate any applicable risks that may affect personnel working on that adjacent location. In the case of an H2S drill or event, there should be a designated crew member that is responsible for contacting personnel on adjacent locations. This could include just communication on potential events or in case of an event, notification to evacuate location. Drilling Consultant or designee are the Point of Contact and oversee all activities at such point of an H_2S event occurrence.

I. Area Residences/ Occupied Locations/ Public Roads

Any occupied residences/ businesses that are within a reasonable perimeter of the location (attached map will identify a 3000' radius around location) should be identified as part of this contingency and a reasonable effort will be made to gain contact information for them. As part of the briefing of the contingency plan, the team reviewing should identify where these potential receptors are and plan on who will contact them in case of a release that may impact that area.

J. Drilling Fluids

Drilling Fluid Monitoring – On Any Hazardous H_2S gas well, the earlier the warning of danger the better chance to control operations. Mud Company will be in daily contact with Colgate Energy Consultant. The Mud Engineer will take samples of the mud, analyze these samples, and make necessary recommendations to prevent H_2S gas from the formation, the pH will be increased as necessary for corrosion control.

pH Control – For normal drilling, pH of 10.5 – 11.5. Would be enough for corrosion protection. If there is an influx of H_2S gas from the formation, the pH will be increased as necessary for corrosion control.

H_2S Scavengers – If necessary H_2S scavengers will be added to the drilling mud.

IV. OPERATING CONDITIONS

A. Posting Well Condition Flags

Post the green, yellow or red well condition flag, as appropriate, on the well condition sign at the location entrance, and take necessary precautions as indicated below:

1. **Green Flag**: Potential Danger- When Drilling in known H_2S zones or when H_2S has been detected in the drilling fluid atmosphere. Protective breathing equipment shall be inspected, and all personnel on duty shall be alerted to be ready to use this equipment.
2. **Yellow Flag**: Potential Danger- When the threshold limit value of H_2S (10 PPM) or of SO_2 (5 PPM) is reached. If the concentration of H_2S or SO_2 reaches 10 PPM, protective breathing equipment shall be worn by all working personnel, and non-working personnel shall go to the upwind Safe Briefing Area.
3. **Red Flag**: Extreme danger*- When the ambient concentration of H_2S or SO_2 is reasonably believed or determined to have exceeded the potentially hazardous level. All non-essential personnel shall leave the drilling location taking the route most likely to exposure to escaping gas.

B. Requiring Air Masks Conditions

1. Whenever air masks are used, the person must be clean shaven as shown in the APC Guidelines
2. When breaking out any line where H_2S can reasonably be expected.
3. When sampling air in areas to determine if toxic concentrations of H_2S exist.
4. When working in areas where 10 PPM or more of H_2S has been detected.
5. At any time, there is doubt as to the H_2S level in the area to be entered.

C. Kick Procedure

1. It is very important that the driller be continuously alert, especially when approaching a gas formation.
2. Should gas come into the well bore, it is very important to be aware of a kick at the earliest time.
3. If a kick is identified, follow appropriate diverter or shut in procedures according to the situation that is presented utilizing appropriate kick procedures.

V. EMERGENCY PROCEDURES

I. In the event of any evidence of H_2S level above 10ppm, take the following steps immediately:
   a. Secure breathing apparatus.
   b. Order non-essential personnel out of the danger zone.
   c. Take steps to determine if the H_2S level can be corrected or suppressed, and if so, proceed with normal operations.

II. If uncontrollable conditions occur, proceed with the following:
   a. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel.
   b. Remove all personnel to the Safe Briefing Area.
   c. Notify public safety personnel for help with maintaining roadblocks, thus limiting traffic and implementing evacuation.
   d. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.

III. Responsibility
   a. The Company Approved Supervisor shall be responsible for the total implementation of the plan.
   b. The Company Approved Supervisor shall be in complete command during any emergency.
   c. The Company Approved Supervisor shall designate a backup Supervisor if he/she is not available.

IV. Actions to be taken

   a. Assign specific tasks to drilling location personnel
   b. Evacuate the general public from the exposure area
   c. Cordon off the exposure area to prevent entry by unauthorized persons
   d. Request assistance if and as needed and initiate emergency notifications
   e. Stop the dispersion of H_2S
   f. Complete emergency notifications as required
   g. Return the situation to normal

EMERGENCY PROCEDURE IMPLEMENTATION

I. Drilling or Tripping

a. *All Personnel*

i. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
ii. Check status of other personnel (buddy system).
iii. Secure breathing apparatus.
iv. Wait for orders from supervisor.

b. *Drilling Consultant*

i. Report to the upwind Safe Briefing Area.
ii. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
iii. Determine the concentration of H_2S.
iv. Assess the situation and take appropriate control measures.

c. *Tool Pusher*

i. Report to the upwind Safe Briefing Area.
ii. Don Breathing Apparatus and return to the point of release with the Drilling Consultant or the Driller (buddy system).
iii. Determine the concentration of H_2S.
iv. Assess the situation and take appropriate control measures.

d. *Driller*

i. Check the status of other personnel (in a rescue attempt, always use the buddy system).
ii. Assign the least essential person to notify the Drilling Consultant and Tool Pusher, in the event of their absence.
iii. Assume the responsibility of the Drilling Consultant and the Tool Pusher until they arrive, in the event of their absence.

e. *Derrick Man and Floor Hands*

i. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

f. *Mud Engineer*

i. Report to the upwind Safe Briefing Area.
ii. When instructed, begin check of mud for pH level and H_2S level.

g. *Safety Personnel*

i. Don Breathing Apparatus.
ii. Check status of personnel.
iii. Wait for instructions from Drilling Consultant or Tool Pusher.

II. Taking a Kick

a. All Personnel report to the upwind Safe Briefing Area.
b. Follow standard BOP/ diverter procedures.

III. Open Hole Logging

a. All unnecessary personnel should leave the rig floor.

b. Drilling Consultant and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

IV. Running Casing or Plugging

a. Follow “Drilling or Tripping” procedures.

b. Assure that all personnel have access to protective equipment.

VI. POST EMERGENCY ACTIONS

In the event this plan is activated, the following post emergency actions shall be taken in an effort to reduce the possibility of a reoccurrence of the type of problem that required its activation, and/or assure that any future activation of a similar plan will be as effective as possible.

A. Review the factors that caused or permitted the emergency occur, and if the need is indicated, modify operating, maintance and/or surveillance procedures.
B. If the need is indicated, retrain employees in blowout prevention, H_2S emergency procedures and etc.
C. Clean up, recharge, restock, reapair, and/ or repalce H_2S emergency equipment as necessary , and return it to its proper place. (For whatever rental equipment is used, this will be the resposibility of Rental Company).
D. See that future H_2S drilling contingency plans are modified accordingly, if the need is indicated.

VII. IGNITION PROCEDURES

Responsibilities:

The decision to ignite the well is the responsibility of the DRILLING CONSULTANT in concurrence with the STATE POLICE. In the event the Drilling Consultant is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.

2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

Instructions for Igniting the Well:

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Consultant is responsible for igniting the well.

2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.

3. Ignite from upwind and do not approach any closer than is warranted.

4. Select the ignition site best suited for protection and which offers an easy escape route.

5. Before igniting, check for the presence of combustible gases.

6. After igniting, continue emergency actions and procedures as before.

7. All unassigned personnel will limit their actions to those directed by the Drilling Consultant.

Note: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Also, both are heavier than air. Do not assume the area is safe even after the well is ignited.

VIII. TRAINING PROGRAM

When working in an area where Hydrogen Sulfide (H_2S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

1. Hazards and characteristics of Hydrogen Sulfide (H_2S).
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H_2S detection, Emergency alarm and sensor location.
5. Don and Doff of SCBA and be clean shaven.
6. Emergency rescue.
7. Resuscitators.
8. First aid and artificial resuscitation.
9. The effects of Hydrogen Sulfide on metals.
10. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H_2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

IX. EMERGENCY EQUIPMENT

Lease Entrance Sign:

Should be located at the lease entrance with the following information:

CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

Respiratory Equipment:

- Fresh air breathing equipment should be placed at the safe briefing areas and should include the following:
- Two SCBA's at each briefing area.
- Enough airline units to operate safely, anytime the H_2S concentration reaches the IDLH level (100 ppm).

- Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

Windsocks or Wind Streamers:

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should always be placed at various locations on the well site to ensure wind consciousness. (Corners of location).

Hydrogen Sulfide Detector and Alarms:

- 1 - Four channel H_2S monitor with alarms.
- Three (3) sensors located as follows: #1 – Rig Floor, #2 – Shale Shaker, #3 – Cellar.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

Well Condition Sign and Flags:

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions
YELLOW – Potential Danger
RED – Danger, H_2S Gas Present

Auxiliary Rescue Equipment:

- Stretcher
- 2 – 100' Rescue lines.
- First Aid kit properly stocked.

Mud Inspection Equipment:

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

Blowout Preventer:

- The well shall have hydraulic BOP equipment for the anticipated bottom hole pressure (BHP).
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

Confined Space Monitor:

There should be a portable multi-gas monitor with at least 3 sensors (O_2, LEL H_2S), preferably 4 (O_2, LEL, H_2S, CO). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

Communication Equipment:

- Proper communication equipment such as cell phones or 2-way radios should be available at the rig.
- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

Special Control Equipment:

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.

Evacuation Plan:

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

Designated Areas:

Parking and Visitor area:

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- Designated smoking area.

Safe Briefing Areas:

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds, or they are at a 180-degree angle if wind directions tend to shift in the area.

- Personal protective equipment should be stored at both briefing areas and if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

Note:

- Additional equipment will be available at the H_2S Provider Safety office.

- Additional personal H_2S monitors are available for all employees on location.

- Automatic Flare Igniters are recommended for installation on the rig.

X. CHECKLISTS

Rig-up & Equipment Status Check List

Note: Initial & Date each item as they are implemented. Multiple wells require additional Columns to be Dated/ Initialed

	Date & Initial 1st Well	Date & Initial 2nd Well	Date & Initial 3rd Well	Date & Initial 4th Well
Sign at location entrance.				
Two (2) windsocks (in required locations).				
Wind Streamers (if required).				
SCBA's on location (Minimum of 2 @ each Muster Area)				
Air packs (working packs and escape packs), inspected and ready for use.				
Spare bottles for each air pack (if required).				
Cascade system and hose line hook up.				
Choke manifold hooked-up and tested. (before drilling out surface casing.)				
Remote Hydraulic BOP control tested (before drilling out surface casing).				
BOP tested (before drilling out surface casing).				
Safe Briefing Areas set-up				
Well Condition sign and flags on location and ready.				
Hydrogen Sulfide detection/ alarm system hooked-up & tested.				
Stretcher on location				
2 – 100' Lifelines on location.				
1 – 20# Fire Extinguisher in safety trailer.				
Confined Space monitor on location and tested.				
All rig crews and supervisor trained (as required).				
All rig crews and supervision medically qualified and fit tested on proper respirators				
Access restricted for unauthorized personnel.				
Pre-spud meeting held reviewing Contingencies				
Drills on H_2S and well control procedures.				
All outside service contractors advised of potential H_2S on the well.				
25mm Flare Gun on location w/flares.				

Procedural Check List

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to ensure that they have not been tampered with.
3. Check pressure on the supply air bottles to make sure they are capable of recharging.
4. Make sure all the Hydrogen Sulfide detection systems are operative.
5. Ensure that all BOP/ Surface Annular/ Diverter systems are functioning and operational.

Perform the following each week:

1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened, and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.
2. BOP skills.
3. Check supply pressure on BOP accumulator stand-by source.
4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready for use.
5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
6. Check all cascade system regulators to make sure they work properly.
7. Perform breathing drills with on-site personnel.
8. Check the following supplies for availability (may be with H_2S Techs On-call):
    - Stretcher
    - Safety Belts and Ropes
    - Spare air Bottles
    - Spare Oxygen Bottles (if resuscitator required)
    - Gas Detector Pump and Tubes
    - Emergency telephone lists
    - Test the Confined Space Monitor to verify the batteries are good.

XI. BRIEFING PROCEDURES

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

Pre-Spud Meeting

Date: Prior to spudding the well.

Attendance:
Drilling Supervisor
Drilling Engineer
Drilling Consultant
Rig Tool Pushers
Rig Drillers
Mud Engineer
All Safety Personnel
Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

XII. EVACUATION PLAN

General Plan

The direct lines of action prepared by Colgate Energy to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Consultant, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the area map.

2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists, and evacuation needs to be implemented.

3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.

4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining roadblocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" personnel will determine when the area is safe for re-entry.

6. If a major release is secured, all exposed housing, vehicles, rig buildings, and low-lying areas and other structures downwind must be tested and clear with SCBAs donned to ensure that all residual H_2S is cleared. Fans, or opening of doors is recommended to ensure that areas are cleared out as part of this process.

XIII. APPENDICES AND GENERAL INFORMATION

Radius of Exposure
Affected Notification List

(within a 65' radius of exposure @100ppm)

The geologic zones that will be encountered during drilling are known to contain hazardous quantities of H_2S. The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

Evacuee Description:
Residents:

Notification Process:

A continuous siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

Evacuation Plan:

All evacuees will migrate lateral to the wind direction.

The Operating Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.

Toxic Effects of H_2S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity – 1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen Sulfide and other gases are compared below in Table 1. Toxicity table for H_2S and physical effects are shown in Table 2.

Table 1
Permissible Exposure Limits of Various Gases

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	4.7 ppm	50 ppm
Hydrogen Sulfide	H_2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO_2	2.21	2 ppm	5 ppm	100 ppm
Chlorine	CL	2.45	.5 ppm	1 ppm	10 ppm
Carbon Monoxide	CO	.97	25 ppm	200 ppm	1200 ppm
Carbon Dioxide	CO_2	1.52	5000 ppm	30,000 ppm	40,000 ppm
Methane	CH_4	.55	5% LEL	15% UEL	

Definitions

A. TLV – Threshold Limit Value is the concentration employees may be exposed based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists) and regulated by OSHA.

B. STEL – Short Term Exposure Limit is the 15-minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H_2S is 20 PPM.

C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H_2S is 100 PPM.

D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed based on a TWA.

Toxicity Table of H_2S

Percent %	PPM	Physical Effects
.0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure.
.0015	15	STEL for 15 minutes of exposure.
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins **in a few minutes.**
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

PHYSICAL PROPERTIES OF H_2S

The properties of all gases are usually described in the context of seven major categories:

COLOR
ODOR
VAPOR DENSITY
EXPLOSIVE LIMITS
FLAMMABILITY
SOLUBILITY (IN WATER)
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a complete picture of the properties of the gas.

COLOR – TRANSPARENT

Hydrogen Sulfide is colorless, so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. In fact, that makes this gas extremely dangerous to be around.

ODOR – ROTTEN EGGS

Hydrogen Sulfide has a distinctive offensive smell, like "rotten eggs". For this reason, it earned its common name "sour gas". However, H_2S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

Hydrogen Sulfide is heavier than air, so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H_2S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – 4.0% TO 44%

Mixed with the right proportion of air or oxygen, H_2S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

FLAMMABILITY

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO_2), another hazardous gas that irritates the eyes and lungs.

SOLUBILITY – 4 TO 1 RATIO WITH WATER

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H_2S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H_2S may release the gas into the air.

BOILING POINT – (-77° Fahrenheit)

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

RESPIRATOR USE

The Occupational Safety and Health Administration (OSHA) regulate the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete an OSHA mandated medical evaluation questionnaire. The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gases.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone who may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H_2S.

B. When breaking out any line where H_2S can reasonably be expected.

C. When sampling air in areas where H_2S may be present.

D. When working in areas where the concentration of H_2S exceeds the Threshold Limit Value for H_2S (10 ppm).

E. At any time where there is a doubt as to the H_2S level in the area to be entered.

EMERGENCY RESCUE PROCEDURES

DO NOT PANIC!!!

Remain Calm – Think

1. Before attempting any rescue, you must first get out of the hazardous area yourself. Go to a safe briefing area.

2. Sound alarm and activate the 911 system.

3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.

4. Rescue the victim and return them to a safe briefing area.

5. Perform an initial assessment and begin proper First Aid/CPR procedures.

6. Keep victim lying down with a blanket or coat, etc.., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.

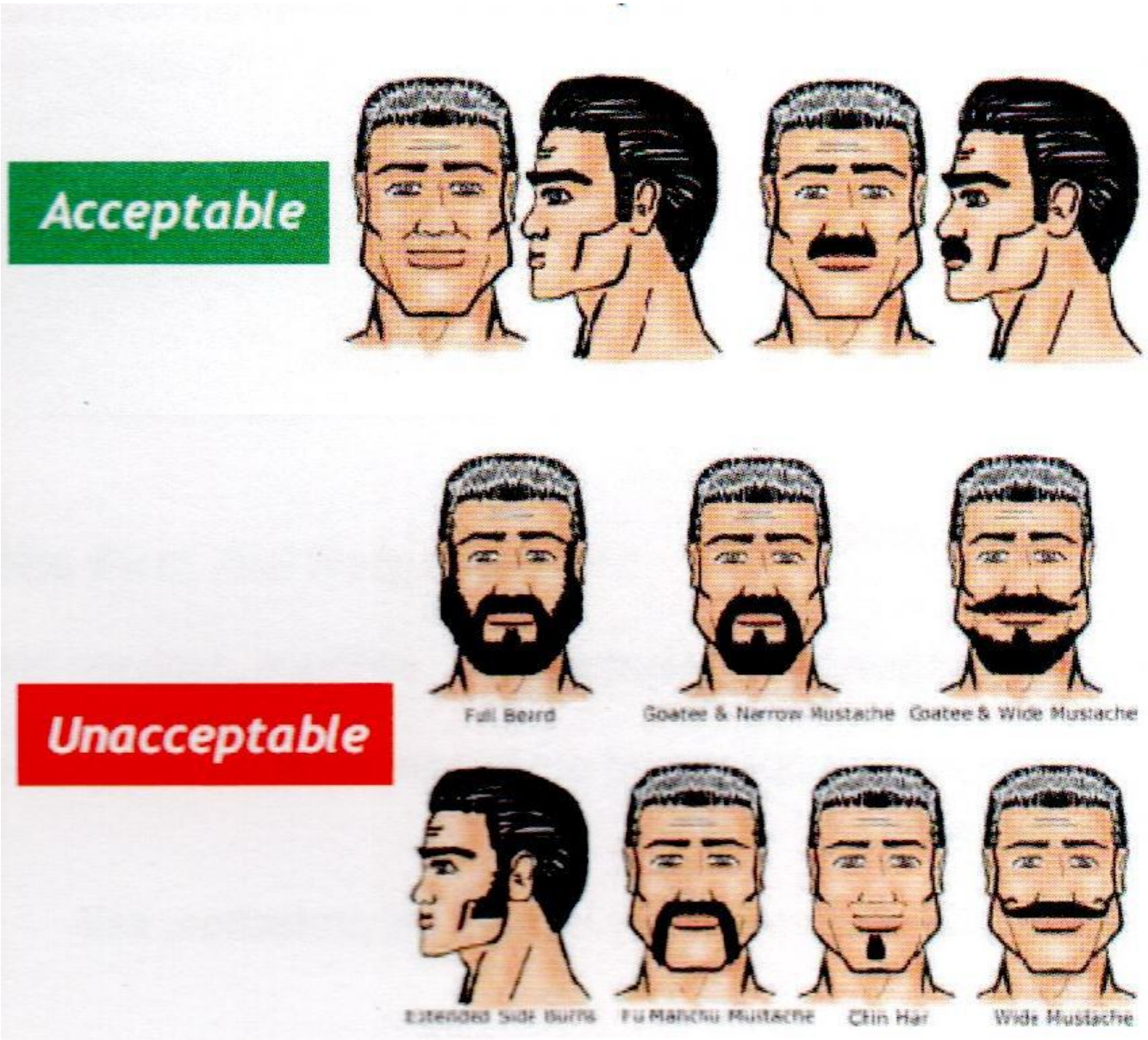
7. If the eyes are affected by H_2S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.

8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.

9. Any personnel overcome by H_2S should always be examined by medical personnel. They should always be transported to a hospital or doctor.

Facial Hair – Clean Shaven Examples

Purpose: To define clean shaven expectations in the field for: 1) Respirator Use, if applicable and 2) First Aid Administration, if situation occurs related to H_2S exposure, having no facial hair can greatly benefit response time and treatment ability.



Colgate Energy

(Permit) Eddy County, NM (83-NME)
(Permit) Koala 9 Fed Com
(B08) Koala 9 Fed Com 114H

Permit

Plan: APD-Rev00

Standard Planning Report

12 May, 2022

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

Project (Permit) Eddy County, NM (83-NME)

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

Site (Permit) Koala 9 Fed Com

Site Position:		**Northing:**	579,560.58 usft	**Latitude:**	32.59318638
From:	Map	**Easting:**	584,661.65 usft	**Longitude:**	-104.19265949
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "		

Well (B08) Koala 9 Fed Com 114H

Well Position	**+N/-S**	0.00 usft	**Northing:**	576,207.48 usft	**Latitude:**	32.58396830
	+E/-W	0.00 usft	**Easting:**	585,013.28 usft	**Longitude:**	-104.19153226
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,274.00 usft
Grid Convergence:		0.08 °				

Wellbore Permit

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/6/2022	6.76	60.11	47,550.55576203

Design APD-Rev00

Audit Notes:

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

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	89.62

Plan Survey Tool Program **Date** 5/12/2022

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,889.95	APD-Rev00 (Permit)	MWD+IFR1+SAG+FDIR (SQC	
				OWSG MWD + IFR1 + Sag + F	

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

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	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,465.39	9.98	182.74	1,462.03	-57.74	-2.77	1.50	1.50	0.00	182.74	
5,015.05	9.98	182.74	4,957.97	-672.26	-32.23	0.00	0.00	0.00	0.00	
5,680.44	0.00	0.00	5,620.00	-730.00	-35.00	1.50	-1.50	0.00	180.00	
5,785.38	0.00	0.00	5,724.94	-730.00	-35.00	0.00	0.00	0.00	0.00	
6,385.38	60.00	101.00	6,221.14	-784.66	246.22	10.00	10.00	0.00	101.00	
6,704.35	90.00	89.62	6,303.00	-810.64	549.14	10.00	9.41	-3.57	-21.93	
16,890.04	90.00	89.62	6,303.00	-743.23	10,734.61	0.00	0.00	0.00	0.00	PBHL(K9- 114H)

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
227.00	0.00	0.00	227.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
368.00	0.00	0.00	368.00	0.00	0.00	0.00	0.00	0.00	0.00
T/Salt									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
704.00	0.00	0.00	704.00	0.00	0.00	0.00	0.00	0.00	0.00
Tansill									
779.00	0.00	0.00	779.00	0.00	0.00	0.00	0.00	0.00	0.00
Yates									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	1.50	182.74	899.99	-1.31	-0.06	-0.07	1.50	1.50	0.00
1,000.00	3.00	182.74	999.91	-5.23	-0.25	-0.29	1.50	1.50	0.00
1,100.00	4.50	182.74	1,099.69	-11.76	-0.56	-0.64	1.50	1.50	0.00
1,154.51	5.32	182.74	1,154.00	-16.42	-0.79	-0.90	1.50	1.50	0.00
Seven Rivers									
1,200.00	6.00	182.74	1,199.27	-20.90	-1.00	-1.14	1.50	1.50	0.00
1,300.00	7.50	182.74	1,298.57	-32.64	-1.56	-1.78	1.50	1.50	0.00
1,400.00	9.00	182.74	1,397.54	-46.97	-2.25	-2.56	1.50	1.50	0.00
1,465.39	9.98	182.74	1,462.03	-57.74	-2.77	-3.15	1.50	1.50	0.00
1,500.00	9.98	182.74	1,496.12	-63.73	-3.06	-3.48	0.00	0.00	0.00
1,600.00	9.98	182.74	1,594.60	-81.05	-3.89	-4.42	0.00	0.00	0.00
1,700.00	9.98	182.74	1,693.09	-98.36	-4.72	-5.37	0.00	0.00	0.00
1,800.00	9.98	182.74	1,791.58	-115.67	-5.55	-6.31	0.00	0.00	0.00
1,832.92	9.98	182.74	1,824.00	-121.37	-5.82	-6.62	0.00	0.00	0.00
Queen									
1,900.00	9.98	182.74	1,890.06	-132.98	-6.38	-7.26	0.00	0.00	0.00
2,000.00	9.98	182.74	1,988.55	-150.29	-7.21	-8.20	0.00	0.00	0.00
2,066.46	9.98	182.74	2,054.00	-161.80	-7.76	-8.83	0.00	0.00	0.00
Grayburg									
2,100.00	9.98	182.74	2,087.04	-167.61	-8.04	-9.15	0.00	0.00	0.00
2,200.00	9.98	182.74	2,185.52	-184.92	-8.87	-10.09	0.00	0.00	0.00
2,300.00	9.98	182.74	2,284.01	-202.23	-9.70	-11.04	0.00	0.00	0.00
2,400.00	9.98	182.74	2,382.50	-219.54	-10.53	-11.98	0.00	0.00	0.00
2,421.84	9.98	182.74	2,404.00	-223.32	-10.71	-12.19	0.00	0.00	0.00
San Andres									
2,500.00	9.98	182.74	2,480.98	-236.85	-11.36	-12.93	0.00	0.00	0.00
2,600.00	9.98	182.74	2,579.47	-254.17	-12.19	-13.87	0.00	0.00	0.00
2,700.00	9.98	182.74	2,677.96	-271.48	-13.02	-14.82	0.00	0.00	0.00
2,800.00	9.98	182.74	2,776.44	-288.79	-13.85	-15.76	0.00	0.00	0.00
2,900.00	9.98	182.74	2,874.93	-306.10	-14.68	-16.71	0.00	0.00	0.00
3,000.00	9.98	182.74	2,973.41	-323.41	-15.51	-17.65	0.00	0.00	0.00
3,005.67	9.98	182.74	2,979.00	-324.39	-15.55	-17.70	0.00	0.00	0.00
CYCN									
3,100.00	9.98	182.74	3,071.90	-340.73	-16.34	-18.60	0.00	0.00	0.00
3,200.00	9.98	182.74	3,170.39	-358.04	-17.17	-19.54	0.00	0.00	0.00
3,300.00	9.98	182.74	3,268.87	-375.35	-18.00	-20.49	0.00	0.00	0.00

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

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)
3,400.00	9.98	182.74	3,367.36	-392.66	-18.83	-21.43	0.00	0.00	0.00
3,500.00	9.98	182.74	3,465.85	-409.97	-19.66	-22.37	0.00	0.00	0.00
3,600.00	9.98	182.74	3,564.33	-427.28	-20.49	-23.32	0.00	0.00	0.00
3,700.00	9.98	182.74	3,662.82	-444.60	-21.32	-24.26	0.00	0.00	0.00
3,800.00	9.98	182.74	3,761.31	-461.91	-22.15	-25.21	0.00	0.00	0.00
3,900.00	9.98	182.74	3,859.79	-479.22	-22.98	-26.15	0.00	0.00	0.00
4,000.00	9.98	182.74	3,958.28	-496.53	-23.81	-27.10	0.00	0.00	0.00
4,100.00	9.98	182.74	4,056.77	-513.84	-24.64	-28.04	0.00	0.00	0.00
4,200.00	9.98	182.74	4,155.25	-531.16	-25.47	-28.99	0.00	0.00	0.00
4,300.00	9.98	182.74	4,253.74	-548.47	-26.30	-29.93	0.00	0.00	0.00
4,400.00	9.98	182.74	4,352.23	-565.78	-27.13	-30.88	0.00	0.00	0.00
4,500.00	9.98	182.74	4,450.71	-583.09	-27.96	-31.82	0.00	0.00	0.00
4,600.00	9.98	182.74	4,549.20	-600.40	-28.79	-32.77	0.00	0.00	0.00
4,700.00	9.98	182.74	4,647.69	-617.72	-29.62	-33.71	0.00	0.00	0.00
4,706.41	9.98	182.74	4,654.00	-618.83	-29.67	-33.77	0.00	0.00	0.00
BSGL									
4,800.00	9.98	182.74	4,746.17	-635.03	-30.45	-34.66	0.00	0.00	0.00
4,900.00	9.98	182.74	4,844.66	-652.34	-31.28	-35.60	0.00	0.00	0.00
5,000.00	9.98	182.74	4,943.15	-669.65	-32.11	-36.55	0.00	0.00	0.00
5,015.05	9.98	182.74	4,957.97	-672.26	-32.23	-36.69	0.00	0.00	0.00
5,100.00	8.71	182.74	5,041.79	-686.03	-32.89	-37.44	1.50	-1.50	0.00
5,200.00	7.21	182.74	5,140.82	-699.86	-33.55	-38.20	1.50	-1.50	0.00
5,300.00	5.71	182.74	5,240.19	-711.09	-34.09	-38.81	1.50	-1.50	0.00
5,400.00	4.21	182.74	5,339.81	-719.72	-34.51	-39.28	1.50	-1.50	0.00
5,500.00	2.71	182.74	5,439.63	-725.74	-34.80	-39.61	1.50	-1.50	0.00
5,600.00	1.21	182.74	5,539.56	-729.15	-34.96	-39.79	1.50	-1.50	0.00
5,680.44	0.00	0.00	5,620.00	-730.00	-35.00	-39.84	1.50	-1.50	0.00
5,700.00	0.00	0.00	5,639.56	-730.00	-35.00	-39.84	0.00	0.00	0.00
5,785.38	0.00	0.00	5,724.94	-730.00	-35.00	-39.84	0.00	0.00	0.00
KOP: 5785.38' MD, -39.84' VS,5724.94' TVD									
5,800.00	1.46	101.00	5,739.56	-730.04	-34.82	-39.66	10.00	10.00	0.00
5,850.00	6.46	101.00	5,789.42	-730.69	-31.43	-36.27	10.00	10.00	0.00
5,900.00	11.46	101.00	5,838.80	-732.18	-23.78	-28.64	10.00	10.00	0.00
5,950.00	16.46	101.00	5,887.30	-734.48	-11.95	-16.82	10.00	10.00	0.00
6,000.00	21.46	101.00	5,934.58	-737.58	4.00	-0.89	10.00	10.00	0.00
6,050.00	26.46	101.00	5,980.25	-741.45	23.93	19.01	10.00	10.00	0.00
6,100.00	31.46	101.00	6,023.98	-746.07	47.68	42.74	10.00	10.00	0.00
6,150.00	36.46	101.00	6,065.44	-751.40	75.09	70.11	10.00	10.00	0.00
6,199.59	41.42	101.00	6,104.00	-757.35	105.68	100.66	10.00	10.00	0.00
FBSG									
6,200.00	41.46	101.00	6,104.31	-757.40	105.95	100.92	10.00	10.00	0.00
6,250.00	46.46	101.00	6,140.29	-764.02	140.01	134.94	10.00	10.00	0.00
6,300.00	51.46	101.00	6,173.10	-771.21	177.02	171.90	10.00	10.00	0.00
6,319.42	53.40	101.00	6,184.94	-774.15	192.13	186.99	10.00	10.00	0.00
100'FWL									
6,350.00	56.46	101.00	6,202.51	-778.92	216.69	211.52	10.00	10.00	0.00
6,385.38	60.00	101.00	6,221.14	-784.66	246.22	241.01	10.00	10.00	0.00
FTP(K9- 114H)									
6,400.00	61.36	100.38	6,228.29	-787.03	258.74	253.51	10.00	9.29	-4.25
6,450.00	66.02	98.36	6,250.45	-794.31	302.95	297.67	10.00	9.33	-4.03
6,500.00	70.71	96.49	6,268.88	-800.30	349.02	343.71	10.00	9.37	-3.75
6,550.00	75.41	94.72	6,283.45	-804.96	396.61	391.26	10.00	9.41	-3.54
6,600.00	80.13	93.03	6,294.04	-808.26	445.35	439.98	10.00	9.44	-3.39

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

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)
6,650.00	84.86	91.38	6,300.57	-810.16	494.87	489.48	10.00	9.45	-3.29
6,704.35	90.00	89.62	6,303.00	-810.64	549.14	543.75	10.00	9.46	-3.24
EOC: 6704.35' MD, 543.75' VS,6303.00' TVD									
6,800.00	90.00	89.62	6,303.00	-810.00	644.79	639.40	0.00	0.00	0.00
6,900.00	90.00	89.62	6,303.00	-809.34	744.79	739.40	0.00	0.00	0.00
7,000.00	90.00	89.62	6,303.00	-808.68	844.78	839.40	0.00	0.00	0.00
7,100.00	90.00	89.62	6,303.00	-808.02	944.78	939.40	0.00	0.00	0.00
7,200.00	90.00	89.62	6,303.00	-807.36	1,044.78	1,039.40	0.00	0.00	0.00
7,300.00	90.00	89.62	6,303.00	-806.69	1,144.78	1,139.40	0.00	0.00	0.00
7,400.00	90.00	89.62	6,303.00	-806.03	1,244.78	1,239.40	0.00	0.00	0.00
7,500.00	90.00	89.62	6,303.00	-805.37	1,344.77	1,339.40	0.00	0.00	0.00
7,600.00	90.00	89.62	6,303.00	-804.71	1,444.77	1,439.40	0.00	0.00	0.00
7,700.00	90.00	89.62	6,303.00	-804.05	1,544.77	1,539.40	0.00	0.00	0.00
7,800.00	90.00	89.62	6,303.00	-803.38	1,644.77	1,639.40	0.00	0.00	0.00
7,900.00	90.00	89.62	6,303.00	-802.72	1,744.76	1,739.40	0.00	0.00	0.00
8,000.00	90.00	89.62	6,303.00	-802.06	1,844.76	1,839.40	0.00	0.00	0.00
8,100.00	90.00	89.62	6,303.00	-801.40	1,944.76	1,939.40	0.00	0.00	0.00
8,200.00	90.00	89.62	6,303.00	-800.74	2,044.76	2,039.40	0.00	0.00	0.00
8,300.00	90.00	89.62	6,303.00	-800.08	2,144.76	2,139.40	0.00	0.00	0.00
8,400.00	90.00	89.62	6,303.00	-799.41	2,244.75	2,239.40	0.00	0.00	0.00
8,500.00	90.00	89.62	6,303.00	-798.75	2,344.75	2,339.40	0.00	0.00	0.00
8,600.00	90.00	89.62	6,303.00	-798.09	2,444.75	2,439.40	0.00	0.00	0.00
8,700.00	90.00	89.62	6,303.00	-797.43	2,544.75	2,539.40	0.00	0.00	0.00
8,800.00	90.00	89.62	6,303.00	-796.77	2,644.74	2,639.40	0.00	0.00	0.00
8,900.00	90.00	89.62	6,303.00	-796.11	2,744.74	2,739.40	0.00	0.00	0.00
8,914.28	90.00	89.62	6,303.00	-796.01	2,759.02	2,753.68	0.00	0.00	0.00
Enter NM 013232 - Exit NM 015003									
9,000.00	90.00	89.62	6,303.00	-795.44	2,844.74	2,839.40	0.00	0.00	0.00
9,100.00	90.00	89.62	6,303.00	-794.78	2,944.74	2,939.40	0.00	0.00	0.00
9,200.00	90.00	89.62	6,303.00	-794.12	3,044.74	3,039.40	0.00	0.00	0.00
9,300.00	90.00	89.62	6,303.00	-793.46	3,144.73	3,139.40	0.00	0.00	0.00
9,400.00	90.00	89.62	6,303.00	-792.80	3,244.73	3,239.40	0.00	0.00	0.00
9,500.00	90.00	89.62	6,303.00	-792.13	3,344.73	3,339.40	0.00	0.00	0.00
9,600.00	90.00	89.62	6,303.00	-791.47	3,444.73	3,439.40	0.00	0.00	0.00
9,700.00	90.00	89.62	6,303.00	-790.81	3,544.72	3,539.40	0.00	0.00	0.00
9,800.00	90.00	89.62	6,303.00	-790.15	3,644.72	3,639.40	0.00	0.00	0.00
9,900.00	90.00	89.62	6,303.00	-789.49	3,744.72	3,739.40	0.00	0.00	0.00
10,000.00	90.00	89.62	6,303.00	-788.83	3,844.72	3,839.40	0.00	0.00	0.00
10,100.00	90.00	89.62	6,303.00	-788.16	3,944.72	3,939.40	0.00	0.00	0.00
10,200.00	90.00	89.62	6,303.00	-787.50	4,044.71	4,039.40	0.00	0.00	0.00
10,248.37	90.00	89.62	6,303.00	-787.18	4,093.08	4,087.77	0.00	0.00	0.00
Enter NM 016101 - Exit NM 013232									
10,300.00	90.00	89.62	6,303.00	-786.84	4,144.71	4,139.40	0.00	0.00	0.00
10,400.00	90.00	89.62	6,303.00	-786.18	4,244.71	4,239.40	0.00	0.00	0.00
10,500.00	90.00	89.62	6,303.00	-785.52	4,344.71	4,339.40	0.00	0.00	0.00
10,600.00	90.00	89.62	6,303.00	-784.86	4,444.71	4,439.40	0.00	0.00	0.00
10,700.00	90.00	89.62	6,303.00	-784.19	4,544.70	4,539.40	0.00	0.00	0.00
10,800.00	90.00	89.62	6,303.00	-783.53	4,644.70	4,639.40	0.00	0.00	0.00
10,900.00	90.00	89.62	6,303.00	-782.87	4,744.70	4,739.40	0.00	0.00	0.00
11,000.00	90.00	89.62	6,303.00	-782.21	4,844.70	4,839.40	0.00	0.00	0.00
11,100.00	90.00	89.62	6,303.00	-781.55	4,944.69	4,939.40	0.00	0.00	0.00
11,200.00	90.00	89.62	6,303.00	-780.88	5,044.69	5,039.40	0.00	0.00	0.00
11,300.00	90.00	89.62	6,303.00	-780.22	5,144.69	5,139.40	0.00	0.00	0.00

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

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)
11,400.00	90.00	89.62	6,303.00	-779.56	5,244.69	5,239.40	0.00	0.00	0.00
11,500.00	90.00	89.62	6,303.00	-778.90	5,344.69	5,339.40	0.00	0.00	0.00
11,582.43	90.00	89.62	6,303.00	-778.35	5,427.11	5,421.83	0.00	0.00	0.00
Exit NM 016101 - Enter NM 015003									
11,600.00	90.00	89.62	6,303.00	-778.24	5,444.68	5,439.40	0.00	0.00	0.00
11,700.00	90.00	89.62	6,303.00	-777.58	5,544.68	5,539.40	0.00	0.00	0.00
11,800.00	90.00	89.62	6,303.00	-776.91	5,644.68	5,639.40	0.00	0.00	0.00
11,900.00	90.00	89.62	6,303.00	-776.25	5,744.68	5,739.40	0.00	0.00	0.00
12,000.00	90.00	89.62	6,303.00	-775.59	5,844.67	5,839.40	0.00	0.00	0.00
12,100.00	90.00	89.62	6,303.00	-774.93	5,944.67	5,939.40	0.00	0.00	0.00
12,200.00	90.00	89.62	6,303.00	-774.27	6,044.67	6,039.40	0.00	0.00	0.00
12,300.00	90.00	89.62	6,303.00	-773.61	6,144.67	6,139.40	0.00	0.00	0.00
12,400.00	90.00	89.62	6,303.00	-772.94	6,244.67	6,239.40	0.00	0.00	0.00
12,500.00	90.00	89.62	6,303.00	-772.28	6,344.66	6,339.40	0.00	0.00	0.00
12,600.00	90.00	89.62	6,303.00	-771.62	6,444.66	6,439.40	0.00	0.00	0.00
12,700.00	90.00	89.62	6,303.00	-770.96	6,544.66	6,539.40	0.00	0.00	0.00
12,800.00	90.00	89.62	6,303.00	-770.30	6,644.66	6,639.40	0.00	0.00	0.00
12,900.00	90.00	89.62	6,303.00	-769.63	6,744.65	6,739.40	0.00	0.00	0.00
13,000.00	90.00	89.62	6,303.00	-768.97	6,844.65	6,839.40	0.00	0.00	0.00
13,100.00	90.00	89.62	6,303.00	-768.31	6,944.65	6,939.40	0.00	0.00	0.00
13,200.00	90.00	89.62	6,303.00	-767.65	7,044.65	7,039.40	0.00	0.00	0.00
13,300.00	90.00	89.62	6,303.00	-766.99	7,144.65	7,139.40	0.00	0.00	0.00
13,400.00	90.00	89.62	6,303.00	-766.33	7,244.64	7,239.40	0.00	0.00	0.00
13,500.00	90.00	89.62	6,303.00	-765.66	7,344.64	7,339.40	0.00	0.00	0.00
13,600.00	90.00	89.62	6,303.00	-765.00	7,444.64	7,439.40	0.00	0.00	0.00
13,700.00	90.00	89.62	6,303.00	-764.34	7,544.64	7,539.40	0.00	0.00	0.00
13,800.00	90.00	89.62	6,303.00	-763.68	7,644.64	7,639.40	0.00	0.00	0.00
13,900.00	90.00	89.62	6,303.00	-763.02	7,744.63	7,739.40	0.00	0.00	0.00
14,000.00	90.00	89.62	6,303.00	-762.36	7,844.63	7,839.40	0.00	0.00	0.00
14,100.00	90.00	89.62	6,303.00	-761.69	7,944.63	7,939.40	0.00	0.00	0.00
14,200.00	90.00	89.62	6,303.00	-761.03	8,044.63	8,039.40	0.00	0.00	0.00
14,300.00	90.00	89.62	6,303.00	-760.37	8,144.62	8,139.40	0.00	0.00	0.00
14,400.00	90.00	89.62	6,303.00	-759.71	8,244.62	8,239.40	0.00	0.00	0.00
14,500.00	90.00	89.62	6,303.00	-759.05	8,344.62	8,339.40	0.00	0.00	0.00
14,600.00	90.00	89.62	6,303.00	-758.38	8,444.62	8,439.40	0.00	0.00	0.00
14,700.00	90.00	89.62	6,303.00	-757.72	8,544.62	8,539.40	0.00	0.00	0.00
14,800.00	90.00	89.62	6,303.00	-757.06	8,644.61	8,639.40	0.00	0.00	0.00
14,900.00	90.00	89.62	6,303.00	-756.40	8,744.61	8,739.40	0.00	0.00	0.00
15,000.00	90.00	89.62	6,303.00	-755.74	8,844.61	8,839.40	0.00	0.00	0.00
15,100.00	90.00	89.62	6,303.00	-755.08	8,944.61	8,939.40	0.00	0.00	0.00
15,200.00	90.00	89.62	6,303.00	-754.41	9,044.60	9,039.40	0.00	0.00	0.00
15,300.00	90.00	89.62	6,303.00	-753.75	9,144.60	9,139.40	0.00	0.00	0.00
15,400.00	90.00	89.62	6,303.00	-753.09	9,244.60	9,239.40	0.00	0.00	0.00
15,500.00	90.00	89.62	6,303.00	-752.43	9,344.60	9,339.40	0.00	0.00	0.00
15,600.00	90.00	89.62	6,303.00	-751.77	9,444.60	9,439.40	0.00	0.00	0.00
15,700.00	90.00	89.62	6,303.00	-751.11	9,544.59	9,539.40	0.00	0.00	0.00
15,800.00	90.00	89.62	6,303.00	-750.44	9,644.59	9,639.40	0.00	0.00	0.00
15,900.00	90.00	89.62	6,303.00	-749.78	9,744.59	9,739.40	0.00	0.00	0.00
16,000.00	90.00	89.62	6,303.00	-749.12	9,844.59	9,839.40	0.00	0.00	0.00
16,100.00	90.00	89.62	6,303.00	-748.46	9,944.58	9,939.40	0.00	0.00	0.00
16,200.00	90.00	89.62	6,303.00	-747.80	10,044.58	10,039.40	0.00	0.00	0.00
16,300.00	90.00	89.62	6,303.00	-747.13	10,144.58	10,139.40	0.00	0.00	0.00
16,400.00	90.00	89.62	6,303.00	-746.47	10,244.58	10,239.40	0.00	0.00	0.00
16,500.00	90.00	89.62	6,303.00	-745.81	10,344.58	10,339.40	0.00	0.00	0.00

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

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)
16,600.00	90.00	89.62	6,303.00	-745.15	10,444.57	10,439.40	0.00	0.00	0.00
16,700.00	90.00	89.62	6,303.00	-744.49	10,544.57	10,539.40	0.00	0.00	0.00
16,800.00	90.00	89.62	6,303.00	-743.83	10,644.57	10,639.40	0.00	0.00	0.00
16,800.02	90.00	89.62	6,303.00	-743.83	10,644.59	10,639.42	0.00	0.00	0.00
LTP(K9- 114H)									
16,800.03	90.00	89.62	6,303.00	-743.83	10,644.60	10,639.43	0.00	0.00	0.00
100 'FEL									
16,890.04	90.00	89.62	6,303.00	-743.23	10,734.61	10,729.44	0.00	0.00	0.00
TD: 16890.04' MD, 10729.44' VS,6303.00' TVD - PBHL(K9- 114H)									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP(K9- 114H)	0.00	0.00	6,303.00	-812.82	191.48	575,394.66	585,204.76	32.58173337	-104.19091412
- plan misses target center by 102.42usft at 6385.38usft MD (6221.14 TVD, -784.66 N, 246.22 E)									
- Point									
PBHL(K9- 114H)	0.00	0.00	6,303.00	-743.23	10,734.61	575,464.25	595,747.89	32.58188120	-104.15668460
- plan hits target center									
- Point									
LTP(K9- 114H)	0.00	0.00	6,303.00	-743.87	10,644.59	575,463.61	595,657.87	32.58187985	-104.15697686
- plan misses target center by 0.04usft at 16800.02usft MD (6303.00 TVD, -743.83 N, 10644.59 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
227.00	227.00	Rustler			
368.00	368.00	T/Salt			
704.00	704.00	Tansill			
779.00	779.00	Yates			
1,154.51	1,154.00	Seven Rivers			
1,832.92	1,824.00	Queen			
2,066.46	2,054.00	Grayburg			
2,421.84	2,404.00	San Andres			
3,005.67	2,979.00	CYCN			
4,706.41	4,654.00	BSGL			
6,199.59	6,104.00	FBSG			

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Company:	Colgate Energy	**TVD Reference:**	3274+30 @ 3304.00usft
Project:	(Permit) Eddy County, NM (83-NME)	**MD Reference:**	3274+30 @ 3304.00usft
Site:	(Permit) Koala 9 Fed Com	**North Reference:**	Grid
Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
5,785.38	5,724.94	-730.00	-35.00	KOP: 5785.38' MD, -39.84' VS,5724.94' TVD
6,319.42	6,184.94	-774.15	192.13	100'FWL
6,704.35	6,303.00	-810.64	549.14	EOC: 6704.35' MD, 543.75' VS,6303.00' TVD
8,914.28	6,303.00	-796.01	2,759.02	Enter NM 013232
8,914.28	6,303.00	-796.01	2,759.02	Exit NM 015003
10,248.37	6,303.00	-787.18	4,093.08	Enter NM 016101
10,248.37	6,303.00	-787.18	4,093.08	Exit NM 013232
11,582.43	6,303.00	-778.35	5,427.11	Exit NM 016101
11,582.43	6,303.00	-778.35	5,427.11	Enter NM 015003
16,800.03	6,303.00	-743.83	10,644.60	100 'FEL
16,890.04	6,303.00	-743.23	10,734.61	TD: 16890.04' MD, 10729.44' VS,6303.00' TVD

Colgate Energy

(Permit) Eddy County, NM (83-NME)
(Permit) Koala 9 Fed Com
(B08) Koala 9 Fed Com 114H

Permit
APD-Rev00

Anticollision Report

13 May, 2022

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Reference APD-Rev00

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum separation factor of 25	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 5/12/2022

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	16,889.95	APD-Rev00 (Permit)	MWD+IFR1+SAG+FDIR (SQ	OWSG MWD + IFR1 + Sag + FDIR Correction

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
(Permit) Koala 9 Fed Com						
(A01) Koala 9 Fed Com 201H - Permit - APD-Rev00	16,300.00	19,035.64	5,279.30	5,067.44	24.919	CC
(A01) Koala 9 Fed Com 201H - Permit - APD-Rev00	16,890.04	19,625.69	5,279.68	5,056.28	23.632	ES, SF
(A02) Koala 9 Fed Com 202H - Permit - APD-Rev00	14,600.00	17,393.98	4,166.62	3,999.18	24.884	CC
(A02) Koala 9 Fed Com 202H - Permit - APD-Rev00	16,890.04	19,684.02	4,167.80	3,959.21	19.981	ES, SF
(A03) Koala 9 Fed Com 131H - Permit - APD-Rev00	14,800.00	17,183.13	4,534.21	4,351.73	24.847	CC
(A03) Koala 9 Fed Com 131H - Permit - APD-Rev00	16,890.04	19,273.17	4,535.54	4,312.32	20.319	ES, SF
(A04) Koala 9 Fed Com 132H - Permit - APD-Rev00	13,100.00	15,664.50	3,434.55	3,295.68	24.732	CC
(A04) Koala 9 Fed Com 132H - Permit - APD-Rev00	16,890.04	19,454.54	3,436.43	3,231.44	16.763	ES, SF
(A05) Koala 9 Fed Com 121H - Permit - APD-Rev00	13,300.00	14,486.51	4,093.52	3,928.40	24.791	CC
(A05) Koala 9 Fed Com 121H - Permit - APD-Rev00	16,890.04	18,076.55	4,095.93	3,854.53	16.968	ES, SF
(A06) Koala 9 Fed Com 122H - Permit - APD-Rev00	10,900.00	12,229.53	2,827.38	2,713.37	24.800	CC
(A06) Koala 9 Fed Com 122H - Permit - APD-Rev00	16,890.04	18,219.58	2,830.99	2,595.41	12.017	ES, SF
(A07) Koala 9 Fed Com 111H - Permit - APD-Rev00	13,000.00	13,041.20	3,977.34	3,816.77	24.769	CC
(A07) Koala 9 Fed Com 111H - Permit - APD-Rev00	16,890.04	16,931.24	3,980.25	3,734.52	16.197	ES, SF
(A08) Koala 9 Fed Com 112H - Permit - APD-Rev00	10,500.00	10,718.18	2,656.17	2,548.96	24.775	CC
(A08) Koala 9 Fed Com 112H - Permit - APD-Rev00	16,890.04	17,108.22	2,660.89	2,415.77	10.856	ES, SF
(B01) Koala 9 Fed Com 203H - Permit - APD-Rev00	1,400.00	1,384.83	228.48	219.10	24.359	CC, ES
(B01) Koala 9 Fed Com 203H - Permit - APD-Rev00	16,890.04	19,670.59	3,228.38	3,058.21	18.971	SF
(B02) Koala 9 Fed Com 204H - Permit - APD-Revv00	1,100.00	1,099.69	179.77	172.43	24.470	CC
(B02) Koala 9 Fed Com 204H - Permit - APD-Revv00	1,200.00	1,199.27	180.13	172.09	22.397	ES
(B02) Koala 9 Fed Com 204H - Permit - APD-Revv00	5,950.00	5,901.01	662.80	621.41	16.013	SF
(B03) Koala 9 Fed Com 133H - Permit - APD-Rev00	1,042.24	1,042.08	149.78	142.84	21.561	CC
(B03) Koala 9 Fed Com 133H - Permit - APD-Rev00	1,200.00	1,199.27	150.37	142.33	18.696	ES
(B03) Koala 9 Fed Com 133H - Permit - APD-Rev00	1,500.00	1,489.82	165.55	155.43	16.360	SF
(B04) Koala 9 Fed Com 134H - Permit - APD-Rev00	1,018.14	1,018.02	119.86	113.08	17.677	CC
(B04) Koala 9 Fed Com 134H - Permit - APD-Rev00	1,100.00	1,099.69	119.99	112.64	16.332	ES
(B04) Koala 9 Fed Com 134H - Permit - APD-Rev00	5,900.00	5,895.59	191.97	150.09	4.584	SF
(B05) Koala 9 Fed Com 123H - Permit - APD-Rev00	988.91	988.83	89.90	83.32	13.665	CC
(B05) Koala 9 Fed Com 123H - Permit - APD-Rev00	1,100.00	1,099.69	90.18	82.83	12.275	ES
(B05) Koala 9 Fed Com 123H - Permit - APD-Rev00	16,890.04	17,736.48	1,671.18	1,468.84	8.259	SF
(B06) Koala 9 Fed Com 124H - Permit - APD-Rev00	954.24	954.19	59.93	53.59	9.451	CC
(B06) Koala 9 Fed Com 124H - Permit - APD-Rev00	5,792.65	5,792.97	70.00	28.03	1.668	ES
(B06) Koala 9 Fed Com 124H - Permit - APD-Rev00	5,800.00	5,800.22	70.06	28.03	1.667	SF
(B07) Koala 9 Fed Com 113H - Permit - APD-Rev00	909.05	909.03	29.96	23.93	4.968	CC
(B07) Koala 9 Fed Com 113H - Permit - APD-Rev00	1,000.00	999.91	30.18	23.53	4.536	ES
(B07) Koala 9 Fed Com 113H - Permit - APD-Rev00	1,100.00	1,099.69	31.65	24.31	4.308	SF

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Koala 9 Fed Com Offsets						
W01_PRE-ONGARD WELL #001_1520917 - Depth Only						Out of range
W02_GOVERNMENT AO COM #001_1524032 - Inc Only	5,500.00	5,422.68	3,228.79	3,098.31	24.746	CC
W02_GOVERNMENT AO COM #001_1524032 - Inc Only	5,800.00	5,724.59	3,229.13	3,085.72	22.517	ES
W02_GOVERNMENT AO COM #001_1524032 - Inc Only	6,300.00	6,171.32	3,443.43	3,272.99	20.203	SF
W03_PRE-ONGARD WELL #001_1525793 - Inc Only - In	4,474.42	4,399.23	1,866.59	1,757.31	17.081	CC
W03_PRE-ONGARD WELL #001_1525793 - Inc Only - In	4,800.00	4,711.00	1,867.46	1,751.03	16.038	ES, SF
W04_FEDERAL V #001_1526451 - Inc Only - Inc Only	5,400.00	5,378.12	3,529.09	3,384.15	24.349	CC
W04_FEDERAL V #001_1526451 - Inc Only - Inc Only	5,800.00	5,743.94	3,537.91	3,382.26	22.730	ES
W04_FEDERAL V #001_1526451 - Inc Only - Inc Only	6,150.00	6,055.10	3,618.04	3,453.95	22.049	SF
W05_FEDERAL V #002_1526702 - Inc Only - Inc Only						Out of range
W06_FEDERAL V #003_1526867 - Depth Only - Depth O	3,200.00	3,161.39	5,159.79	4,948.82	24.458	CC, ES
W06_FEDERAL V #003_1526867 - Depth Only - Depth O	6,200.00	6,095.31	5,469.31	5,062.30	13.438	SF
W07_PRE-ONGARD WELL #001_1527282 - Depth Only	4,445.75	4,364.29	1,765.65	1,473.88	6.051	CC
W07_PRE-ONGARD WELL #001_1527282 - Depth Only	5,800.00	5,706.56	1,772.76	1,391.25	4.647	ES
W07_PRE-ONGARD WELL #001_1527282 - Depth Only	5,950.00	5,854.30	1,796.02	1,404.69	4.589	SF
W08_FEDERAL V COM #004_1535127 - Inc Only - Inc O						Out of range
W09_GOVERNMENT AB #002_1521480 - Inc Only - Inc	16,258.95	6,265.28	1,648.16	1,394.39	6.495	CC, ES
W09_GOVERNMENT AB #002_1521480 - Inc Only - Inc	16,300.00	6,265.28	1,648.67	1,394.57	6.488	SF
W10_GOVERNMENT AB #003_1521774 - Inc Only - Inc	13,587.14	6,274.30	1,647.67	1,444.25	8.100	CC
W10_GOVERNMENT AB #003_1521774 - Inc Only - Inc	13,600.00	6,274.30	1,647.72	1,444.19	8.095	ES
W10_GOVERNMENT AB #003_1521774 - Inc Only - Inc	13,700.00	6,274.30	1,651.53	1,447.29	8.086	SF
W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc	12,322.35	6,301.24	4,305.50	4,074.16	18.612	CC
W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc	12,400.00	6,301.23	4,306.20	4,074.10	18.554	ES
W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc	12,900.00	6,301.21	4,344.07	4,107.60	18.370	SF
W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc	13,642.87	6,312.53	4,306.51	4,049.54	16.759	CC
W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc	13,700.00	6,312.53	4,306.89	4,049.35	16.723	ES
W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc	14,200.00	6,312.49	4,342.40	4,080.49	16.580	SF
W13_GOVERNMENT AB #008_1527863 - Inc Only - Inc	14,988.51	6,347.41	4,156.60	3,907.75	16.703	CC
W13_GOVERNMENT AB #008_1527863 - Inc Only - Inc	15,000.00	6,347.41	4,156.62	3,907.65	16.696	ES
W13_GOVERNMENT AB #008_1527863 - Inc Only - Inc	15,500.00	6,347.32	4,187.96	3,934.65	16.534	SF
W14_ GOVERNMENT AB #009_1527964 - MWD/Inc - M						Out of range
W15_GOVERNMENT AB FEDERAL #011_1540853 - MW						Out of range
W16_GOVERNMENT AB FEDERAL #014_1540854 - MW						Out of range
W17_GOVERNMENT AB FEDERAL #013_1540920 - MW	16,238.20	6,332.46	3,028.59	2,888.80	21.665	CC, ES
W17_GOVERNMENT AB FEDERAL #013_1540920 - MW	16,600.00	6,333.31	3,050.12	2,907.34	21.362	SF
W18_GOVERNMENT AB FEDERAL #012_1541049 - MW	15,162.40	6,784.00	3,110.46	2,983.79	24.555	CC
W18_GOVERNMENT AB FEDERAL #012_1541049 - MW	15,200.00	6,784.00	3,110.69	2,983.70	24.495	ES
W18_GOVERNMENT AB FEDERAL #012_1541049 - MW	15,500.00	6,784.00	3,128.73	2,999.75	24.257	SF

Offset Design: (Permit) Koala 9 Fed Com - (A01) Koala 9 Fed Com 201H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,300.00	6,303.00	19,035.64	8,839.00	115.43	120.67	-118.52	3,891.23	10,110.46	5,279.30	5,067.44	211.86	24.919	CC
16,400.00	6,303.00	19,135.64	8,839.00	116.53	121.76	-118.52	3,891.97	10,210.46	5,279.37	5,065.55	213.81	24.691	
16,500.00	6,303.00	19,235.64	8,839.00	117.64	122.84	-118.52	3,892.70	10,310.45	5,279.43	5,063.66	215.77	24.468	
16,600.00	6,303.00	19,335.64	8,839.00	118.74	123.93	-118.52	3,893.44	10,410.45	5,279.50	5,061.77	217.73	24.248	
16,700.00	6,303.00	19,435.64	8,839.00	119.84	125.01	-118.52	3,894.17	10,510.45	5,279.56	5,059.88	219.69	24.032	
16,800.00	6,303.00	19,535.64	8,839.00	120.94	126.10	-118.52	3,894.91	10,610.45	5,279.63	5,057.98	221.64	23.820	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A01) Koala 9 Fed Com 201H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,890.04	6,303.00	19,625.69	8,839.00	121.94	127.08	-118.52	3,895.57	10,700.49	5,279.68	5,056.28	223.41	23.632 ES, SF	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A02) Koala 9 Fed Com 202H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,600.00	6,303.00	17,393.98	8,839.00	96.79	102.27	-127.23	2,558.95	8,420.52	4,166.62	3,999.18	167.44	24.884	CC
14,700.00	6,303.00	17,493.98	8,839.00	97.88	103.34	-127.23	2,559.68	8,520.52	4,166.68	3,997.45	169.23	24.622	
14,800.00	6,303.00	17,593.98	8,839.00	98.98	104.41	-127.23	2,560.41	8,620.51	4,166.73	3,995.72	171.01	24.365	
14,900.00	6,303.00	17,693.98	8,839.00	100.07	105.48	-127.23	2,561.13	8,720.51	4,166.78	3,993.98	172.80	24.114	
15,000.00	6,303.00	17,793.98	8,839.00	101.16	106.56	-127.23	2,561.86	8,820.51	4,166.83	3,992.25	174.58	23.867	
15,100.00	6,303.00	17,893.98	8,839.00	102.26	107.63	-127.23	2,562.59	8,920.50	4,166.88	3,990.51	176.37	23.626	
15,200.00	6,303.00	17,993.98	8,839.00	103.35	108.70	-127.23	2,563.31	9,020.50	4,166.93	3,988.77	178.16	23.389	
15,300.00	6,303.00	18,093.98	8,839.00	104.45	109.78	-127.23	2,564.04	9,120.50	4,166.98	3,987.03	179.95	23.156	
15,400.00	6,303.00	18,193.98	8,839.00	105.55	110.86	-127.23	2,564.77	9,220.50	4,167.04	3,985.29	181.74	22.928	
15,500.00	6,303.00	18,293.98	8,839.00	106.64	111.93	-127.23	2,565.49	9,320.49	4,167.09	3,983.55	183.54	22.704	
15,600.00	6,303.00	18,393.98	8,839.00	107.74	113.01	-127.23	2,566.22	9,420.49	4,167.14	3,981.81	185.33	22.485	
15,700.00	6,303.00	18,493.98	8,839.00	108.84	114.09	-127.23	2,566.94	9,520.49	4,167.19	3,980.06	187.13	22.269	
15,800.00	6,303.00	18,593.98	8,839.00	109.94	115.17	-127.23	2,567.67	9,620.49	4,167.24	3,978.32	188.93	22.058	
15,900.00	6,303.00	18,693.98	8,839.00	111.03	116.25	-127.23	2,568.40	9,720.48	4,167.29	3,976.57	190.72	21.850	
16,000.00	6,303.00	18,793.98	8,839.00	112.13	117.33	-127.22	2,569.12	9,820.48	4,167.35	3,974.82	192.52	21.646	
16,100.00	6,303.00	18,893.98	8,839.00	113.23	118.41	-127.22	2,569.85	9,920.48	4,167.40	3,973.07	194.32	21.446	
16,200.00	6,303.00	18,993.98	8,839.00	114.33	119.50	-127.22	2,570.58	10,020.48	4,167.45	3,971.32	196.13	21.249	
16,300.00	6,303.00	19,093.98	8,839.00	115.43	120.58	-127.22	2,571.30	10,120.47	4,167.50	3,969.57	197.93	21.055	
16,400.00	6,303.00	19,193.98	8,839.00	116.53	121.66	-127.22	2,572.03	10,220.47	4,167.55	3,967.82	199.73	20.866	
16,500.00	6,303.00	19,293.98	8,839.00	117.64	122.75	-127.22	2,572.76	10,320.47	4,167.60	3,966.06	201.54	20.679	
16,600.00	6,303.00	19,393.98	8,839.00	118.74	123.83	-127.22	2,573.48	10,420.47	4,167.65	3,964.31	203.35	20.495	
16,700.00	6,303.00	19,493.98	8,839.00	119.84	124.92	-127.22	2,574.21	10,520.46	4,167.71	3,962.55	205.15	20.315	
16,800.00	6,303.00	19,593.98	8,839.00	120.94	126.01	-127.22	2,574.94	10,620.46	4,167.76	3,960.80	206.96	20.138	
16,890.04	6,303.00	19,684.02	8,839.00	121.94	126.99	-127.22	2,575.59	10,710.50	4,167.80	3,959.21	208.59	19.981	ES, SF

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A03) Koala 9 Fed Com 131H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,800.00	6,303.00	17,183.13	8,494.00	98.98	103.80	-118.69	3,220.24	8,615.41	4,534.21	4,351.73	182.48	24.847 CC	
14,900.00	6,303.00	17,283.13	8,494.00	100.07	104.87	-118.69	3,220.97	8,715.41	4,534.28	4,349.86	184.42	24.587	
15,000.00	6,303.00	17,383.13	8,494.00	101.16	105.95	-118.69	3,221.71	8,815.41	4,534.34	4,347.98	186.36	24.331	
15,100.00	6,303.00	17,483.13	8,494.00	102.26	107.03	-118.69	3,222.44	8,915.40	4,534.40	4,346.11	188.30	24.081	
15,200.00	6,303.00	17,583.13	8,494.00	103.35	108.11	-118.69	3,223.17	9,015.40	4,534.47	4,344.23	190.24	23.836	
15,300.00	6,303.00	17,683.13	8,494.00	104.45	109.18	-118.69	3,223.91	9,115.40	4,534.53	4,342.35	192.18	23.595	
15,400.00	6,303.00	17,783.13	8,494.00	105.55	110.26	-118.69	3,224.64	9,215.39	4,534.59	4,340.47	194.12	23.359	
15,500.00	6,303.00	17,883.13	8,494.00	106.64	111.35	-118.69	3,225.38	9,315.39	4,534.66	4,338.59	196.07	23.128	
15,600.00	6,303.00	17,983.13	8,494.00	107.74	112.43	-118.69	3,226.11	9,415.39	4,534.72	4,336.71	198.01	22.901	
15,700.00	6,303.00	18,083.13	8,494.00	108.84	113.51	-118.69	3,226.85	9,515.39	4,534.78	4,334.82	199.96	22.678	
15,800.00	6,303.00	18,183.13	8,494.00	109.94	114.59	-118.69	3,227.58	9,615.38	4,534.85	4,332.94	201.91	22.460	
15,900.00	6,303.00	18,283.13	8,494.00	111.03	115.68	-118.69	3,228.31	9,715.38	4,534.91	4,331.05	203.86	22.245	
16,000.00	6,303.00	18,383.13	8,494.00	112.13	116.76	-118.69	3,229.05	9,815.38	4,534.97	4,329.16	205.81	22.035	
16,100.00	6,303.00	18,483.13	8,494.00	113.23	117.85	-118.69	3,229.78	9,915.38	4,535.04	4,327.28	207.76	21.828	
16,200.00	6,303.00	18,583.13	8,494.00	114.33	118.93	-118.69	3,230.52	10,015.37	4,535.10	4,325.39	209.71	21.625	
16,300.00	6,303.00	18,683.13	8,494.00	115.43	120.02	-118.69	3,231.25	10,115.37	4,535.17	4,323.50	211.67	21.426	
16,400.00	6,303.00	18,783.13	8,494.00	116.53	121.10	-118.69	3,231.98	10,215.37	4,535.23	4,321.61	213.62	21.230	
16,500.00	6,303.00	18,883.13	8,494.00	117.64	122.19	-118.69	3,232.72	10,315.36	4,535.29	4,319.71	215.58	21.038	
16,600.00	6,303.00	18,983.13	8,494.00	118.74	123.28	-118.69	3,233.45	10,415.36	4,535.36	4,317.82	217.54	20.849	
16,700.00	6,303.00	19,083.13	8,494.00	119.84	124.37	-118.69	3,234.19	10,515.36	4,535.42	4,315.93	219.49	20.663	
16,800.00	6,303.00	19,183.13	8,494.00	120.94	125.46	-118.68	3,234.92	10,615.36	4,535.48	4,314.03	221.45	20.481	
16,890.04	6,303.00	19,273.17	8,494.00	121.94	126.44	-118.68	3,235.58	10,705.40	4,535.54	4,312.32	223.22	20.319 ES, SF	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A04) Koala 9 Fed Com 132H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,100.00	6,303.00	15,664.50	8,494.00	80.51	86.13	-129.34	1,888.08	6,925.36	3,434.55	3,295.68	138.87	24.732	CC
13,200.00	6,303.00	15,764.50	8,494.00	81.59	87.18	-129.33	1,888.80	7,025.36	3,434.60	3,294.02	140.58	24.432	
13,300.00	6,303.00	15,864.50	8,494.00	82.67	88.23	-129.33	1,889.53	7,125.36	3,434.65	3,292.35	142.29	24.138	
13,400.00	6,303.00	15,964.50	8,494.00	83.75	89.28	-129.33	1,890.26	7,225.35	3,434.69	3,290.69	144.01	23.851	
13,500.00	6,303.00	16,064.49	8,494.00	84.83	90.33	-129.33	1,890.98	7,325.35	3,434.74	3,289.02	145.73	23.570	
13,600.00	6,303.00	16,164.49	8,494.00	85.91	91.39	-129.33	1,891.71	7,425.35	3,434.79	3,287.35	147.45	23.295	
13,700.00	6,303.00	16,264.49	8,494.00	87.00	92.45	-129.33	1,892.44	7,525.35	3,434.84	3,285.68	149.17	23.026	
13,800.00	6,303.00	16,364.49	8,494.00	88.08	93.50	-129.33	1,893.16	7,625.34	3,434.89	3,284.00	150.89	22.764	
13,900.00	6,303.00	16,464.49	8,494.00	89.17	94.56	-129.33	1,893.89	7,725.34	3,434.94	3,282.32	152.62	22.506	
14,000.00	6,303.00	16,564.49	8,494.00	90.26	95.63	-129.33	1,894.61	7,825.34	3,434.99	3,280.64	154.35	22.254	
14,100.00	6,303.00	16,664.49	8,494.00	91.34	96.69	-129.33	1,895.34	7,925.33	3,435.04	3,278.96	156.08	22.008	
14,200.00	6,303.00	16,764.49	8,494.00	92.43	97.75	-129.33	1,896.07	8,025.33	3,435.09	3,277.28	157.82	21.767	
14,300.00	6,303.00	16,864.49	8,494.00	93.52	98.82	-129.33	1,896.79	8,125.33	3,435.14	3,275.59	159.55	21.530	
14,400.00	6,303.00	16,964.49	8,494.00	94.61	99.88	-129.33	1,897.52	8,225.33	3,435.19	3,273.91	161.29	21.299	
14,500.00	6,303.00	17,064.49	8,494.00	95.70	100.95	-129.33	1,898.24	8,325.32	3,435.24	3,272.22	163.03	21.072	
14,600.00	6,303.00	17,164.49	8,494.00	96.79	102.02	-129.32	1,898.97	8,425.32	3,435.29	3,270.53	164.77	20.849	
14,700.00	6,303.00	17,264.49	8,494.00	97.88	103.09	-129.32	1,899.70	8,525.32	3,435.34	3,268.83	166.51	20.632	
14,800.00	6,303.00	17,364.49	8,494.00	98.98	104.16	-129.32	1,900.42	8,625.32	3,435.39	3,267.14	168.25	20.418	
14,900.00	6,303.00	17,464.49	8,494.00	100.07	105.24	-129.32	1,901.15	8,725.31	3,435.44	3,265.44	170.00	20.209	
15,000.00	6,303.00	17,564.49	8,494.00	101.16	106.31	-129.32	1,901.87	8,825.31	3,435.49	3,263.75	171.74	20.004	
15,100.00	6,303.00	17,664.49	8,494.00	102.26	107.38	-129.32	1,902.60	8,925.31	3,435.54	3,262.05	173.49	19.802	
15,200.00	6,303.00	17,764.49	8,494.00	103.35	108.46	-129.32	1,903.33	9,025.31	3,435.59	3,260.35	175.24	19.605	
15,300.00	6,303.00	17,864.49	8,494.00	104.45	109.53	-129.32	1,904.05	9,125.30	3,435.64	3,258.65	176.99	19.411	
15,400.00	6,303.00	17,964.49	8,494.00	105.55	110.61	-129.32	1,904.78	9,225.30	3,435.69	3,256.95	178.75	19.221	
15,500.00	6,303.00	18,064.49	8,494.00	106.64	111.69	-129.32	1,905.51	9,325.30	3,435.74	3,255.24	180.50	19.035	
15,600.00	6,303.00	18,164.49	8,494.00	107.74	112.77	-129.32	1,906.23	9,425.29	3,435.79	3,253.54	182.25	18.852	
15,700.00	6,303.00	18,264.49	8,494.00	108.84	113.85	-129.32	1,906.96	9,525.29	3,435.84	3,251.83	184.01	18.672	
15,800.00	6,303.00	18,364.49	8,494.00	109.94	114.93	-129.32	1,907.68	9,625.29	3,435.89	3,250.12	185.77	18.496	
15,900.00	6,303.00	18,464.49	8,494.00	111.03	116.01	-129.32	1,908.41	9,725.29	3,435.94	3,248.41	187.53	18.322	
16,000.00	6,303.00	18,564.49	8,494.00	112.13	117.09	-129.32	1,909.14	9,825.28	3,435.99	3,246.70	189.29	18.152	
16,100.00	6,303.00	18,664.49	8,494.00	113.23	118.18	-129.31	1,909.86	9,925.28	3,436.04	3,244.99	191.05	17.985	
16,200.00	6,303.00	18,764.49	8,494.00	114.33	119.26	-129.31	1,910.59	10,025.28	3,436.09	3,243.28	192.81	17.821	
16,300.00	6,303.00	18,864.49	8,494.00	115.43	120.34	-129.31	1,911.31	10,125.28	3,436.14	3,241.57	194.57	17.660	
16,400.00	6,303.00	18,964.49	8,494.00	116.53	121.43	-129.31	1,912.04	10,225.27	3,436.19	3,239.85	196.34	17.502	
16,500.00	6,303.00	19,064.49	8,494.00	117.64	122.51	-129.31	1,912.77	10,325.27	3,436.24	3,238.14	198.10	17.346	
16,600.00	6,303.00	19,164.49	8,494.00	118.74	123.60	-129.31	1,913.49	10,425.27	3,436.29	3,236.42	199.87	17.193	
16,700.00	6,303.00	19,264.49	8,494.00	119.84	124.69	-129.31	1,914.22	10,525.27	3,436.34	3,234.70	201.63	17.042	
16,800.00	6,303.00	19,364.49	8,494.00	120.94	125.77	-129.31	1,914.95	10,625.26	3,436.39	3,232.99	203.40	16.895	
16,890.04	6,303.00	19,454.54	8,494.00	121.94	126.75	-129.31	1,915.60	10,715.30	3,436.43	3,231.44	205.00	16.763	ES, SF

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A05) Koala 9 Fed Com 121H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,300.00	6,303.00	14,486.51	7,289.00	82.67	86.29	-103.74	3,209.35	7,115.59	4,093.52	3,928.40	165.12	24.791	CC
13,400.00	6,303.00	14,586.51	7,289.00	83.75	87.36	-103.74	3,210.08	7,215.59	4,093.59	3,926.37	167.22	24.481	
13,500.00	6,303.00	14,686.51	7,289.00	84.83	88.44	-103.74	3,210.82	7,315.58	4,093.66	3,924.34	169.32	24.177	
13,600.00	6,303.00	14,786.51	7,289.00	85.91	89.52	-103.74	3,211.55	7,415.58	4,093.72	3,922.30	171.42	23.881	
13,700.00	6,303.00	14,886.51	7,289.00	87.00	90.59	-103.74	3,212.28	7,515.58	4,093.79	3,920.27	173.52	23.592	
13,800.00	6,303.00	14,986.51	7,289.00	88.08	91.67	-103.73	3,213.01	7,615.58	4,093.86	3,918.23	175.63	23.310	
13,900.00	6,303.00	15,086.51	7,289.00	89.17	92.75	-103.73	3,213.74	7,715.57	4,093.92	3,916.19	177.73	23.034	
14,000.00	6,303.00	15,186.51	7,289.00	90.26	93.83	-103.73	3,214.47	7,815.57	4,093.99	3,914.15	179.84	22.764	
14,100.00	6,303.00	15,286.51	7,289.00	91.34	94.91	-103.73	3,215.20	7,915.57	4,094.06	3,912.10	181.95	22.500	
14,200.00	6,303.00	15,386.51	7,289.00	92.43	95.99	-103.73	3,215.93	8,015.57	4,094.12	3,910.06	184.07	22.243	
14,300.00	6,303.00	15,486.51	7,289.00	93.52	97.08	-103.73	3,216.66	8,115.56	4,094.19	3,908.01	186.18	21.990	
14,400.00	6,303.00	15,586.51	7,289.00	94.61	98.16	-103.73	3,217.39	8,215.56	4,094.26	3,905.96	188.30	21.744	
14,500.00	6,303.00	15,686.51	7,289.00	95.70	99.24	-103.73	3,218.12	8,315.56	4,094.33	3,903.91	190.42	21.502	
14,600.00	6,303.00	15,786.51	7,289.00	96.79	100.33	-103.73	3,218.85	8,415.56	4,094.39	3,901.86	192.53	21.266	
14,700.00	6,303.00	15,886.51	7,289.00	97.88	101.42	-103.73	3,219.58	8,515.55	4,094.46	3,899.80	194.66	21.034	
14,800.00	6,303.00	15,986.51	7,289.00	98.98	102.50	-103.73	3,220.31	8,615.55	4,094.53	3,897.75	196.78	20.808	
14,900.00	6,303.00	16,086.51	7,289.00	100.07	103.59	-103.73	3,221.05	8,715.55	4,094.59	3,895.69	198.90	20.586	
15,000.00	6,303.00	16,186.51	7,289.00	101.16	104.68	-103.73	3,221.78	8,815.54	4,094.66	3,893.63	201.03	20.369	
15,100.00	6,303.00	16,286.51	7,289.00	102.26	105.77	-103.73	3,222.51	8,915.54	4,094.73	3,891.58	203.15	20.156	
15,200.00	6,303.00	16,386.51	7,289.00	103.35	106.86	-103.73	3,223.24	9,015.54	4,094.79	3,889.51	205.28	19.947	
15,300.00	6,303.00	16,486.51	7,289.00	104.45	107.95	-103.73	3,223.97	9,115.54	4,094.86	3,887.45	207.41	19.743	
15,400.00	6,303.00	16,586.51	7,289.00	105.55	109.04	-103.73	3,224.70	9,215.53	4,094.93	3,885.39	209.54	19.543	
15,500.00	6,303.00	16,686.51	7,289.00	106.64	110.13	-103.73	3,225.43	9,315.53	4,094.99	3,883.33	211.67	19.346	
15,600.00	6,303.00	16,786.51	7,289.00	107.74	111.22	-103.73	3,226.16	9,415.53	4,095.06	3,881.26	213.80	19.154	
15,700.00	6,303.00	16,886.51	7,289.00	108.84	112.32	-103.73	3,226.89	9,515.53	4,095.13	3,879.20	215.93	18.965	
15,800.00	6,303.00	16,986.51	7,289.00	109.94	113.41	-103.73	3,227.62	9,615.52	4,095.20	3,877.13	218.07	18.779	
15,900.00	6,303.00	17,086.51	7,289.00	111.03	114.51	-103.73	3,228.35	9,715.52	4,095.26	3,875.06	220.20	18.598	
16,000.00	6,303.00	17,186.51	7,289.00	112.13	115.60	-103.73	3,229.08	9,815.52	4,095.33	3,872.99	222.34	18.419	
16,100.00	6,303.00	17,286.51	7,289.00	113.23	116.69	-103.73	3,229.81	9,915.52	4,095.40	3,870.92	224.48	18.244	
16,200.00	6,303.00	17,386.51	7,289.00	114.33	117.79	-103.73	3,230.54	10,015.51	4,095.46	3,868.85	226.61	18.072	
16,300.00	6,303.00	17,486.51	7,289.00	115.43	118.89	-103.73	3,231.27	10,115.51	4,095.53	3,866.78	228.75	17.904	
16,400.00	6,303.00	17,586.51	7,289.00	116.53	119.98	-103.73	3,232.01	10,215.51	4,095.60	3,864.70	230.89	17.738	
16,500.00	6,303.00	17,686.51	7,289.00	117.64	121.08	-103.73	3,232.74	10,315.50	4,095.66	3,862.63	233.03	17.575	
16,600.00	6,303.00	17,786.51	7,289.00	118.74	122.18	-103.73	3,233.47	10,415.50	4,095.73	3,860.56	235.18	17.416	
16,700.00	6,303.00	17,886.51	7,289.00	119.84	123.28	-103.73	3,234.20	10,515.50	4,095.80	3,858.48	237.32	17.259	
16,800.00	6,303.00	17,986.51	7,289.00	120.94	124.37	-103.73	3,234.93	10,615.50	4,095.87	3,856.40	239.46	17.105	
16,890.04	6,303.00	18,076.55	7,289.00	121.94	125.36	-103.73	3,235.59	10,705.54	4,095.93	3,854.53	241.39	16.968	ES, SF

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A06) Koala 9 Fed Com 122H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,900.00	6,303.00	12,229.53	7,289.00	57.21	61.20	-110.11	1,872.11	4,725.42	2,827.38	2,713.37	114.01	24.800	CC
11,000.00	6,303.00	12,329.53	7,289.00	58.25	62.21	-110.11	1,872.83	4,825.42	2,827.44	2,711.50	115.94	24.388	
11,100.00	6,303.00	12,429.53	7,289.00	59.28	63.22	-110.11	1,873.56	4,925.42	2,827.50	2,709.62	117.87	23.987	
11,200.00	6,303.00	12,529.53	7,289.00	60.32	64.24	-110.11	1,874.28	5,025.41	2,827.56	2,707.74	119.82	23.599	
11,300.00	6,303.00	12,629.53	7,289.00	61.37	65.26	-110.11	1,875.01	5,125.41	2,827.62	2,705.85	121.77	23.222	
11,400.00	6,303.00	12,729.53	7,289.00	62.41	66.29	-110.11	1,875.74	5,225.41	2,827.68	2,703.96	123.72	22.855	
11,500.00	6,303.00	12,829.53	7,289.00	63.46	67.32	-110.10	1,876.46	5,325.40	2,827.74	2,702.06	125.68	22.499	
11,600.00	6,303.00	12,929.53	7,289.00	64.51	68.35	-110.10	1,877.19	5,425.40	2,827.80	2,700.15	127.65	22.153	
11,700.00	6,303.00	13,029.53	7,289.00	65.57	69.38	-110.10	1,877.91	5,525.40	2,827.86	2,698.24	129.62	21.817	
11,800.00	6,303.00	13,129.53	7,289.00	66.62	70.42	-110.10	1,878.64	5,625.40	2,827.92	2,696.32	131.59	21.490	
11,900.00	6,303.00	13,229.53	7,289.00	67.68	71.46	-110.10	1,879.37	5,725.39	2,827.98	2,694.41	133.57	21.172	
12,000.00	6,303.00	13,329.53	7,289.00	68.74	72.50	-110.10	1,880.09	5,825.39	2,828.04	2,692.48	135.56	20.862	
12,100.00	6,303.00	13,429.53	7,289.00	69.80	73.54	-110.10	1,880.82	5,925.39	2,828.10	2,690.55	137.55	20.561	
12,200.00	6,303.00	13,529.53	7,289.00	70.87	74.59	-110.10	1,881.55	6,025.39	2,828.16	2,688.62	139.54	20.268	
12,300.00	6,303.00	13,629.53	7,289.00	71.93	75.64	-110.10	1,882.27	6,125.38	2,828.22	2,686.68	141.54	19.982	
12,400.00	6,303.00	13,729.53	7,289.00	73.00	76.69	-110.10	1,883.00	6,225.38	2,828.28	2,684.75	143.54	19.704	
12,500.00	6,303.00	13,829.53	7,289.00	74.07	77.74	-110.10	1,883.72	6,325.38	2,828.34	2,682.80	145.54	19.433	
12,600.00	6,303.00	13,929.53	7,289.00	75.14	78.80	-110.10	1,884.45	6,425.38	2,828.40	2,680.86	147.55	19.170	
12,700.00	6,303.00	14,029.53	7,289.00	76.21	79.85	-110.10	1,885.18	6,525.37	2,828.46	2,678.91	149.56	18.912	
12,800.00	6,303.00	14,129.53	7,289.00	77.28	80.91	-110.10	1,885.90	6,625.37	2,828.52	2,676.95	151.57	18.662	
12,900.00	6,303.00	14,229.53	7,289.00	78.36	81.97	-110.10	1,886.63	6,725.37	2,828.58	2,675.00	153.59	18.417	
13,000.00	6,303.00	14,329.53	7,289.00	79.43	83.03	-110.10	1,887.35	6,825.37	2,828.64	2,673.04	155.61	18.178	
13,100.00	6,303.00	14,429.53	7,289.00	80.51	84.10	-110.10	1,888.08	6,925.36	2,828.70	2,671.08	157.63	17.946	
13,200.00	6,303.00	14,529.53	7,289.00	81.59	85.16	-110.10	1,888.81	7,025.36	2,828.76	2,669.11	159.65	17.718	
13,300.00	6,303.00	14,629.53	7,289.00	82.67	86.23	-110.10	1,889.53	7,125.36	2,828.83	2,667.15	161.68	17.497	
13,400.00	6,303.00	14,729.53	7,289.00	83.75	87.30	-110.10	1,890.26	7,225.35	2,828.89	2,665.18	163.71	17.280	
13,500.00	6,303.00	14,829.53	7,289.00	84.83	88.37	-110.10	1,890.98	7,325.35	2,828.95	2,663.21	165.74	17.069	
13,600.00	6,303.00	14,929.53	7,289.00	85.91	89.44	-110.10	1,891.71	7,425.35	2,829.01	2,661.23	167.77	16.862	
13,700.00	6,303.00	15,029.53	7,289.00	87.00	90.51	-110.09	1,892.44	7,525.35	2,829.07	2,659.26	169.81	16.660	
13,800.00	6,303.00	15,129.53	7,289.00	88.08	91.58	-110.09	1,893.16	7,625.34	2,829.13	2,657.28	171.85	16.463	
13,900.00	6,303.00	15,229.53	7,289.00	89.17	92.65	-110.09	1,893.89	7,725.34	2,829.19	2,655.30	173.89	16.270	
14,000.00	6,303.00	15,329.53	7,289.00	90.26	93.73	-110.09	1,894.61	7,825.34	2,829.25	2,653.32	175.93	16.082	
14,100.00	6,303.00	15,429.53	7,289.00	91.34	94.81	-110.09	1,895.34	7,925.34	2,829.31	2,651.33	177.98	15.897	
14,200.00	6,303.00	15,529.53	7,289.00	92.43	95.88	-110.09	1,896.07	8,025.33	2,829.37	2,649.35	180.02	15.717	
14,300.00	6,303.00	15,629.53	7,289.00	93.52	96.96	-110.09	1,896.79	8,125.33	2,829.43	2,647.36	182.07	15.540	
14,400.00	6,303.00	15,729.53	7,289.00	94.61	98.04	-110.09	1,897.52	8,225.33	2,829.49	2,645.37	184.12	15.368	
14,500.00	6,303.00	15,829.53	7,289.00	95.70	99.12	-110.09	1,898.25	8,325.33	2,829.55	2,643.38	186.17	15.199	
14,600.00	6,303.00	15,929.53	7,289.00	96.79	100.20	-110.09	1,898.97	8,425.32	2,829.61	2,641.39	188.22	15.033	
14,700.00	6,303.00	16,029.53	7,289.00	97.88	101.28	-110.09	1,899.70	8,525.32	2,829.67	2,639.39	190.28	14.871	
14,800.00	6,303.00	16,129.53	7,289.00	98.98	102.37	-110.09	1,900.42	8,625.32	2,829.73	2,637.40	192.33	14.713	
14,900.00	6,303.00	16,229.53	7,289.00	100.07	103.45	-110.09	1,901.15	8,725.31	2,829.79	2,635.40	194.39	14.557	
15,000.00	6,303.00	16,329.53	7,289.00	101.16	104.53	-110.09	1,901.88	8,825.31	2,829.85	2,633.40	196.45	14.405	
15,100.00	6,303.00	16,429.53	7,289.00	102.26	105.62	-110.09	1,902.60	8,925.31	2,829.91	2,631.40	198.51	14.256	
15,200.00	6,303.00	16,529.53	7,289.00	103.35	106.71	-110.09	1,903.33	9,025.31	2,829.97	2,629.40	200.57	14.109	
15,300.00	6,303.00	16,629.53	7,289.00	104.45	107.79	-110.09	1,904.05	9,125.30	2,830.03	2,627.40	202.64	13.966	
15,400.00	6,303.00	16,729.53	7,289.00	105.55	108.88	-110.09	1,904.78	9,225.30	2,830.09	2,625.39	204.70	13.826	
15,500.00	6,303.00	16,829.53	7,289.00	106.64	109.97	-110.09	1,905.51	9,325.30	2,830.15	2,623.39	206.77	13.688	
15,600.00	6,303.00	16,929.53	7,289.00	107.74	111.06	-110.09	1,906.23	9,425.30	2,830.21	2,621.38	208.83	13.553	
15,700.00	6,303.00	17,029.53	7,289.00	108.84	112.15	-110.09	1,906.96	9,525.29	2,830.28	2,619.38	210.90	13.420	
15,800.00	6,303.00	17,129.53	7,289.00	109.94	113.24	-110.09	1,907.68	9,625.29	2,830.34	2,617.37	212.97	13.290	
15,900.00	6,303.00	17,229.53	7,289.00	111.03	114.33	-110.09	1,908.41	9,725.29	2,830.40	2,615.36	215.04	13.162	
16,000.00	6,303.00	17,329.53	7,289.00	112.13	115.42	-110.08	1,909.14	9,825.29	2,830.46	2,613.35	217.11	13.037	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A06) Koala 9 Fed Com 122H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,100.00	6,303.00	17,429.53	7,289.00	113.23	116.51	-110.08	1,909.86	9,925.28	2,830.52	2,611.33	219.18	12.914	
16,200.00	6,303.00	17,529.53	7,289.00	114.33	117.60	-110.08	1,910.59	10,025.28	2,830.58	2,609.32	221.26	12.793	
16,300.00	6,303.00	17,629.53	7,289.00	115.43	118.70	-110.08	1,911.31	10,125.28	2,830.64	2,607.31	223.33	12.675	
16,400.00	6,303.00	17,729.53	7,289.00	116.53	119.79	-110.08	1,912.04	10,225.27	2,830.70	2,605.29	225.40	12.558	
16,500.00	6,303.00	17,829.53	7,289.00	117.64	120.88	-110.08	1,912.77	10,325.27	2,830.76	2,603.28	227.48	12.444	
16,600.00	6,303.00	17,929.53	7,289.00	118.74	121.98	-110.08	1,913.49	10,425.27	2,830.82	2,601.26	229.56	12.332	
16,700.00	6,303.00	18,029.53	7,289.00	119.84	123.07	-110.08	1,914.22	10,525.27	2,830.88	2,599.25	231.63	12.221	
16,800.00	6,303.00	18,129.53	7,289.00	120.94	124.17	-110.08	1,914.95	10,625.26	2,830.94	2,597.23	233.71	12.113	
16,890.04	6,303.00	18,219.58	7,289.00	121.94	125.16	-110.08	1,915.60	10,715.30	2,830.99	2,595.41	235.58	12.017	ES, SF

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A07) Koala 9 Fed Com 111H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2) **Rule Assigned:** **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,000.00	6,303.00	13,041.20	6,214.00	79.43	81.29	-88.52	3,206.92	6,815.36	3,977.34	3,816.77	160.57	24.769	CC
13,100.00	6,303.00	13,141.20	6,214.00	80.51	82.38	-88.52	3,207.66	6,915.36	3,977.41	3,814.68	162.74	24.441	
13,200.00	6,303.00	13,241.20	6,214.00	81.59	83.46	-88.52	3,208.40	7,015.36	3,977.49	3,812.59	164.90	24.121	
13,300.00	6,303.00	13,341.20	6,214.00	82.67	84.54	-88.52	3,209.13	7,115.36	3,977.56	3,810.50	167.06	23.809	
13,400.00	6,303.00	13,441.20	6,214.00	83.75	85.63	-88.52	3,209.87	7,215.35	3,977.64	3,808.41	169.23	23.504	
13,500.00	6,303.00	13,541.20	6,214.00	84.83	86.72	-88.52	3,210.61	7,315.35	3,977.71	3,806.31	171.40	23.207	
13,600.00	6,303.00	13,641.20	6,214.00	85.91	87.80	-88.52	3,211.34	7,415.35	3,977.79	3,804.22	173.57	22.917	
13,700.00	6,303.00	13,741.20	6,214.00	87.00	88.89	-88.52	3,212.08	7,515.35	3,977.86	3,802.12	175.74	22.634	
13,800.00	6,303.00	13,841.20	6,214.00	88.08	89.98	-88.52	3,212.82	7,615.34	3,977.94	3,800.02	177.92	22.358	
13,900.00	6,303.00	13,941.20	6,214.00	89.17	91.07	-88.52	3,213.55	7,715.34	3,978.01	3,797.92	180.10	22.088	
14,000.00	6,303.00	14,041.20	6,214.00	90.26	92.16	-88.52	3,214.29	7,815.34	3,978.09	3,795.81	182.27	21.825	
14,100.00	6,303.00	14,141.20	6,214.00	91.34	93.25	-88.52	3,215.03	7,915.33	3,978.16	3,793.71	184.45	21.567	
14,200.00	6,303.00	14,241.20	6,214.00	92.43	94.34	-88.52	3,215.76	8,015.33	3,978.24	3,791.60	186.63	21.316	
14,300.00	6,303.00	14,341.20	6,214.00	93.52	95.44	-88.52	3,216.50	8,115.33	3,978.31	3,789.49	188.82	21.070	
14,400.00	6,303.00	14,441.20	6,214.00	94.61	96.53	-88.52	3,217.24	8,215.33	3,978.39	3,787.39	191.00	20.829	
14,500.00	6,303.00	14,541.20	6,214.00	95.70	97.62	-88.52	3,217.97	8,315.32	3,978.46	3,785.28	193.19	20.594	
14,600.00	6,303.00	14,641.20	6,214.00	96.79	98.72	-88.52	3,218.71	8,415.32	3,978.54	3,783.16	195.37	20.364	
14,700.00	6,303.00	14,741.20	6,214.00	97.88	99.81	-88.52	3,219.45	8,515.32	3,978.61	3,781.05	197.56	20.139	
14,800.00	6,303.00	14,841.20	6,214.00	98.98	100.91	-88.52	3,220.18	8,615.31	3,978.69	3,778.94	199.75	19.918	
14,900.00	6,303.00	14,941.20	6,214.00	100.07	102.01	-88.52	3,220.92	8,715.31	3,978.76	3,776.82	201.94	19.703	
15,000.00	6,303.00	15,041.20	6,214.00	101.16	103.10	-88.52	3,221.66	8,815.31	3,978.84	3,774.70	204.13	19.491	
15,100.00	6,303.00	15,141.20	6,214.00	102.26	104.20	-88.52	3,222.39	8,915.31	3,978.91	3,772.58	206.33	19.285	
15,200.00	6,303.00	15,241.20	6,214.00	103.35	105.30	-88.52	3,223.13	9,015.30	3,978.99	3,770.47	208.52	19.082	
15,300.00	6,303.00	15,341.20	6,214.00	104.45	106.40	-88.52	3,223.87	9,115.30	3,979.06	3,768.35	210.71	18.884	
15,400.00	6,303.00	15,441.20	6,214.00	105.55	107.50	-88.52	3,224.60	9,215.30	3,979.14	3,766.22	212.91	18.689	
15,500.00	6,303.00	15,541.20	6,214.00	106.64	108.60	-88.52	3,225.34	9,315.30	3,979.21	3,764.10	215.11	18.499	
15,600.00	6,303.00	15,641.20	6,214.00	107.74	109.70	-88.52	3,226.08	9,415.29	3,979.28	3,761.98	217.31	18.312	
15,700.00	6,303.00	15,741.20	6,214.00	108.84	110.80	-88.52	3,226.81	9,515.29	3,979.36	3,759.86	219.50	18.129	
15,800.00	6,303.00	15,841.20	6,214.00	109.94	111.90	-88.52	3,227.55	9,615.29	3,979.43	3,757.73	221.70	17.949	
15,900.00	6,303.00	15,941.20	6,214.00	111.03	113.00	-88.52	3,228.29	9,715.28	3,979.51	3,755.60	223.90	17.773	
16,000.00	6,303.00	16,041.20	6,214.00	112.13	114.10	-88.52	3,229.02	9,815.28	3,979.58	3,753.48	226.11	17.600	
16,100.00	6,303.00	16,141.20	6,214.00	113.23	115.20	-88.52	3,229.76	9,915.28	3,979.66	3,751.35	228.31	17.431	
16,200.00	6,303.00	16,241.20	6,214.00	114.33	116.31	-88.52	3,230.50	10,015.28	3,979.73	3,749.22	230.51	17.265	
16,300.00	6,303.00	16,341.20	6,214.00	115.43	117.41	-88.52	3,231.23	10,115.27	3,979.81	3,747.09	232.72	17.102	
16,400.00	6,303.00	16,441.20	6,214.00	116.53	118.51	-88.52	3,231.97	10,215.27	3,979.88	3,744.96	234.92	16.941	
16,500.00	6,303.00	16,541.20	6,214.00	117.64	119.61	-88.52	3,232.71	10,315.27	3,979.96	3,742.83	237.13	16.784	
16,600.00	6,303.00	16,641.20	6,214.00	118.74	120.72	-88.52	3,233.44	10,415.27	3,980.03	3,740.70	239.33	16.630	
16,700.00	6,303.00	16,741.20	6,214.00	119.84	121.82	-88.52	3,234.18	10,515.26	3,980.11	3,738.57	241.54	16.478	
16,800.00	6,303.00	16,841.20	6,214.00	120.94	122.93	-88.52	3,234.92	10,615.26	3,980.18	3,736.44	243.75	16.329	
16,890.04	6,303.00	16,931.24	6,214.00	121.94	123.92	-88.52	3,235.58	10,705.30	3,980.25	3,734.52	245.73	16.197	ES, SF

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A08) Koala 9 Fed Com 112H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,500.00	6,303.00	10,718.18	6,214.00	53.11	54.88	-87.78	1,868.58	4,325.18	2,656.17	2,548.96	107.21	24.775 CC	
10,600.00	6,303.00	10,818.18	6,214.00	54.13	55.90	-87.78	1,869.32	4,425.18	2,656.24	2,546.98	109.26	24.311	
10,700.00	6,303.00	10,918.18	6,214.00	55.15	56.92	-87.78	1,870.05	4,525.17	2,656.31	2,545.00	111.32	23.862	
10,800.00	6,303.00	11,018.18	6,214.00	56.18	57.95	-87.78	1,870.79	4,625.17	2,656.39	2,543.00	113.38	23.428	
10,900.00	6,303.00	11,118.18	6,214.00	57.21	58.98	-87.78	1,871.52	4,725.17	2,656.46	2,541.01	115.45	23.009	
11,000.00	6,303.00	11,218.18	6,214.00	58.25	60.01	-87.78	1,872.26	4,825.17	2,656.54	2,539.00	117.53	22.603	
11,100.00	6,303.00	11,318.18	6,214.00	59.28	61.05	-87.78	1,872.99	4,925.16	2,656.61	2,536.99	119.62	22.210	
11,200.00	6,303.00	11,418.18	6,214.00	60.32	62.09	-87.78	1,873.73	5,025.16	2,656.68	2,534.98	121.70	21.829	
11,300.00	6,303.00	11,518.18	6,214.00	61.37	63.13	-87.78	1,874.47	5,125.16	2,656.76	2,532.96	123.80	21.460	
11,400.00	6,303.00	11,618.18	6,214.00	62.41	64.18	-87.78	1,875.20	5,225.16	2,656.83	2,530.93	125.90	21.103	
11,500.00	6,303.00	11,718.18	6,214.00	63.46	65.23	-87.78	1,875.94	5,325.15	2,656.91	2,528.90	128.00	20.756	
11,600.00	6,303.00	11,818.18	6,214.00	64.51	66.28	-87.78	1,876.67	5,425.15	2,656.98	2,526.87	130.11	20.420	
11,700.00	6,303.00	11,918.18	6,214.00	65.57	67.33	-87.78	1,877.41	5,525.15	2,657.05	2,524.83	132.23	20.095	
11,800.00	6,303.00	12,018.18	6,214.00	66.62	68.38	-87.78	1,878.14	5,625.14	2,657.13	2,522.78	134.35	19.778	
11,900.00	6,303.00	12,118.18	6,214.00	67.68	69.44	-87.78	1,878.88	5,725.14	2,657.20	2,520.73	136.47	19.471	
12,000.00	6,303.00	12,218.18	6,214.00	68.74	70.50	-87.78	1,879.62	5,825.14	2,657.27	2,518.68	138.59	19.173	
12,100.00	6,303.00	12,318.18	6,214.00	69.80	71.56	-87.78	1,880.35	5,925.14	2,657.35	2,516.63	140.72	18.884	
12,200.00	6,303.00	12,418.18	6,214.00	70.87	72.62	-87.78	1,881.09	6,025.13	2,657.42	2,514.57	142.86	18.602	
12,300.00	6,303.00	12,518.18	6,214.00	71.93	73.69	-87.78	1,881.82	6,125.13	2,657.50	2,512.50	144.99	18.329	
12,400.00	6,303.00	12,618.18	6,214.00	73.00	74.76	-87.78	1,882.56	6,225.13	2,657.57	2,510.44	147.13	18.063	
12,500.00	6,303.00	12,718.18	6,214.00	74.07	75.82	-87.78	1,883.29	6,325.13	2,657.64	2,508.37	149.27	17.804	
12,600.00	6,303.00	12,818.18	6,214.00	75.14	76.89	-87.78	1,884.03	6,425.12	2,657.72	2,506.30	151.42	17.552	
12,700.00	6,303.00	12,918.18	6,214.00	76.21	77.96	-87.78	1,884.77	6,525.12	2,657.79	2,504.22	153.57	17.307	
12,800.00	6,303.00	13,018.18	6,214.00	77.28	79.04	-87.78	1,885.50	6,625.12	2,657.87	2,502.15	155.72	17.068	
12,900.00	6,303.00	13,118.18	6,214.00	78.36	80.11	-87.78	1,886.24	6,725.11	2,657.94	2,500.07	157.87	16.836	
13,000.00	6,303.00	13,218.18	6,214.00	79.43	81.19	-87.78	1,886.97	6,825.11	2,658.01	2,497.99	160.03	16.610	
13,100.00	6,303.00	13,318.18	6,214.00	80.51	82.26	-87.78	1,887.71	6,925.11	2,658.09	2,495.90	162.19	16.389	
13,200.00	6,303.00	13,418.18	6,214.00	81.59	83.34	-87.78	1,888.44	7,025.11	2,658.16	2,493.81	164.35	16.174	
13,300.00	6,303.00	13,518.18	6,214.00	82.67	84.42	-87.78	1,889.18	7,125.10	2,658.24	2,491.73	166.51	15.964	
13,400.00	6,303.00	13,618.18	6,214.00	83.75	85.50	-87.78	1,889.92	7,225.10	2,658.31	2,489.64	168.67	15.760	
13,500.00	6,303.00	13,718.18	6,214.00	84.83	86.58	-87.78	1,890.65	7,325.10	2,658.38	2,487.54	170.84	15.561	
13,600.00	6,303.00	13,818.18	6,214.00	85.91	87.66	-87.78	1,891.39	7,425.10	2,658.46	2,485.45	173.01	15.366	
13,700.00	6,303.00	13,918.18	6,214.00	87.00	88.74	-87.78	1,892.12	7,525.09	2,658.53	2,483.35	175.18	15.176	
13,800.00	6,303.00	14,018.18	6,214.00	88.08	89.83	-87.78	1,892.86	7,625.09	2,658.60	2,481.25	177.35	14.990	
13,900.00	6,303.00	14,118.18	6,214.00	89.17	90.91	-87.78	1,893.59	7,725.09	2,658.68	2,479.15	179.53	14.809	
14,000.00	6,303.00	14,218.18	6,214.00	90.26	92.00	-87.78	1,894.33	7,825.08	2,658.75	2,477.05	181.70	14.632	
14,100.00	6,303.00	14,318.18	6,214.00	91.34	93.08	-87.78	1,895.07	7,925.08	2,658.83	2,474.95	183.88	14.459	
14,200.00	6,303.00	14,418.18	6,214.00	92.43	94.17	-87.78	1,895.80	8,025.08	2,658.90	2,472.84	186.06	14.291	
14,300.00	6,303.00	14,518.18	6,214.00	93.52	95.26	-87.78	1,896.54	8,125.08	2,658.97	2,470.73	188.24	14.125	
14,400.00	6,303.00	14,618.18	6,214.00	94.61	96.35	-87.78	1,897.27	8,225.07	2,659.05	2,468.62	190.42	13.964	
14,500.00	6,303.00	14,718.18	6,214.00	95.70	97.44	-87.78	1,898.01	8,325.07	2,659.12	2,466.52	192.61	13.806	
14,600.00	6,303.00	14,818.18	6,214.00	96.79	98.53	-87.78	1,898.74	8,425.07	2,659.20	2,464.40	194.79	13.651	
14,700.00	6,303.00	14,918.18	6,214.00	97.88	99.62	-87.78	1,899.48	8,525.07	2,659.27	2,462.29	196.98	13.500	
14,800.00	6,303.00	15,018.18	6,214.00	98.98	100.71	-87.78	1,900.22	8,625.06	2,659.34	2,460.18	199.17	13.352	
14,900.00	6,303.00	15,118.18	6,214.00	100.07	101.81	-87.78	1,900.95	8,725.06	2,659.42	2,458.06	201.35	13.208	
15,000.00	6,303.00	15,218.18	6,214.00	101.16	102.90	-87.78	1,901.69	8,825.06	2,659.49	2,455.95	203.54	13.066	
15,100.00	6,303.00	15,318.18	6,214.00	102.26	103.99	-87.78	1,902.42	8,925.05	2,659.57	2,453.83	205.74	12.927	
15,200.00	6,303.00	15,418.18	6,214.00	103.35	105.09	-87.78	1,903.16	9,025.05	2,659.64	2,451.71	207.93	12.791	
15,300.00	6,303.00	15,518.18	6,214.00	104.45	106.18	-87.78	1,903.89	9,125.05	2,659.71	2,449.59	210.12	12.658	
15,400.00	6,303.00	15,618.18	6,214.00	105.55	107.28	-87.78	1,904.63	9,225.05	2,659.79	2,447.47	212.32	12.528	
15,500.00	6,303.00	15,718.18	6,214.00	106.64	108.37	-87.78	1,905.37	9,325.04	2,659.86	2,445.35	214.51	12.400	
15,600.00	6,303.00	15,818.18	6,214.00	107.74	109.47	-87.78	1,906.10	9,425.04	2,659.93	2,443.23	216.71	12.274	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (A08) Koala 9 Fed Com 112H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,700.00	6,303.00	15,918.18	6,214.00	108.84	110.57	-87.78	1,906.84	9,525.04	2,660.01	2,441.10	218.90	12.151	
15,800.00	6,303.00	16,018.18	6,214.00	109.94	111.67	-87.78	1,907.57	9,625.04	2,660.08	2,438.98	221.10	12.031	
15,900.00	6,303.00	16,118.18	6,214.00	111.03	112.76	-87.78	1,908.31	9,725.03	2,660.16	2,436.85	223.30	11.913	
16,000.00	6,303.00	16,218.18	6,214.00	112.13	113.86	-87.78	1,909.04	9,825.03	2,660.23	2,434.73	225.50	11.797	
16,100.00	6,303.00	16,318.18	6,214.00	113.23	114.96	-87.78	1,909.78	9,925.03	2,660.30	2,432.60	227.70	11.683	
16,200.00	6,303.00	16,418.18	6,214.00	114.33	116.06	-87.78	1,910.52	10,025.02	2,660.38	2,430.47	229.90	11.572	
16,300.00	6,303.00	16,518.18	6,214.00	115.43	117.16	-87.78	1,911.25	10,125.02	2,660.45	2,428.35	232.11	11.462	
16,400.00	6,303.00	16,618.18	6,214.00	116.53	118.26	-87.78	1,911.99	10,225.02	2,660.53	2,426.22	234.31	11.355	
16,500.00	6,303.00	16,718.18	6,214.00	117.64	119.36	-87.78	1,912.72	10,325.02	2,660.60	2,424.09	236.51	11.249	
16,600.00	6,303.00	16,818.18	6,214.00	118.74	120.46	-87.78	1,913.46	10,425.01	2,660.67	2,421.95	238.72	11.146	
16,700.00	6,303.00	16,918.18	6,214.00	119.84	121.56	-87.78	1,914.19	10,525.01	2,660.75	2,419.82	240.92	11.044	
16,800.00	6,303.00	17,018.18	6,214.00	120.94	122.67	-87.78	1,914.93	10,625.01	2,660.82	2,417.69	243.13	10.944	
16,890.04	6,303.00	17,108.22	6,214.00	121.94	123.66	-87.78	1,915.59	10,715.05	2,660.89	2,415.77	245.12	10.856 ES, SF	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B01) Koala 9 Fed Com 203H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,400.00	1,397.54	1,384.83	1,382.55	4.67	4.73	109.96	43.92	-211.33	228.48	219.10	9.38	24.359	CC, ES
1,465.39	1,462.03	1,445.06	1,441.99	4.90	4.95	114.21	53.57	-211.62	237.51	227.70	9.81	24.200	
1,500.00	1,496.12	1,477.30	1,473.76	5.02	5.06	116.54	59.06	-211.78	243.20	233.15	10.05	24.208	
1,600.00	1,594.60	1,571.38	1,566.47	5.38	5.39	122.79	75.12	-212.26	261.92	251.20	10.72	24.435	
1,700.00	1,693.09	1,665.47	1,659.18	5.74	5.73	128.22	91.19	-212.74	283.46	272.07	11.39	24.886	
14,200.00	6,303.00	16,980.55	8,853.00	92.43	97.54	-142.17	1,218.80	8,031.51	3,228.37	3,098.18	130.20	24.796	
14,300.00	6,303.00	17,080.55	8,853.00	93.52	98.60	-142.17	1,219.46	8,131.51	3,228.37	3,096.71	131.67	24.519	
14,400.00	6,303.00	17,180.55	8,853.00	94.61	99.66	-142.17	1,220.13	8,231.51	3,228.38	3,095.24	133.14	24.248	
14,500.00	6,303.00	17,280.55	8,853.00	95.70	100.72	-142.17	1,220.79	8,331.51	3,228.38	3,093.76	134.61	23.983	
14,600.00	6,303.00	17,380.55	8,853.00	96.79	101.79	-142.17	1,221.45	8,431.51	3,228.38	3,092.29	136.09	23.723	
14,700.00	6,303.00	17,480.55	8,853.00	97.88	102.86	-142.17	1,222.11	8,531.50	3,228.38	3,090.81	137.57	23.468	
14,800.00	6,303.00	17,580.55	8,853.00	98.98	103.92	-142.17	1,222.77	8,631.50	3,228.38	3,089.33	139.04	23.218	
14,900.00	6,303.00	17,680.55	8,853.00	100.07	104.99	-142.17	1,223.44	8,731.50	3,228.38	3,087.85	140.52	22.974	
15,000.00	6,303.00	17,780.55	8,853.00	101.16	106.06	-142.17	1,224.10	8,831.50	3,228.38	3,086.37	142.00	22.734	
15,100.00	6,303.00	17,880.55	8,853.00	102.26	107.13	-142.17	1,224.76	8,931.49	3,228.38	3,084.89	143.49	22.500	
15,200.00	6,303.00	17,980.55	8,853.00	103.35	108.20	-142.17	1,225.42	9,031.49	3,228.38	3,083.41	144.97	22.270	
15,300.00	6,303.00	18,080.55	8,853.00	104.45	109.27	-142.17	1,226.09	9,131.49	3,228.38	3,081.93	146.45	22.044	
15,400.00	6,303.00	18,180.55	8,853.00	105.55	110.35	-142.17	1,226.75	9,231.49	3,228.38	3,080.44	147.94	21.823	
15,500.00	6,303.00	18,280.55	8,853.00	106.64	111.42	-142.17	1,227.41	9,331.49	3,228.38	3,078.95	149.42	21.605	
15,600.00	6,303.00	18,380.55	8,853.00	107.74	112.50	-142.17	1,228.07	9,431.48	3,228.38	3,077.47	150.91	21.393	
15,700.00	6,303.00	18,480.55	8,853.00	108.84	113.57	-142.17	1,228.73	9,531.48	3,228.38	3,075.98	152.40	21.184	
15,800.00	6,303.00	18,580.55	8,853.00	109.94	114.65	-142.17	1,229.40	9,631.48	3,228.38	3,074.49	153.89	20.979	
15,900.00	6,303.00	18,680.55	8,853.00	111.03	115.73	-142.17	1,230.06	9,731.48	3,228.38	3,073.00	155.38	20.777	
16,000.00	6,303.00	18,780.55	8,853.00	112.13	116.81	-142.17	1,230.72	9,831.47	3,228.38	3,071.51	156.87	20.580	
16,100.00	6,303.00	18,880.55	8,853.00	113.23	117.89	-142.17	1,231.38	9,931.47	3,228.38	3,070.02	158.36	20.386	
16,200.00	6,303.00	18,980.55	8,853.00	114.33	118.97	-142.17	1,232.05	10,031.47	3,228.38	3,068.53	159.85	20.196	
16,300.00	6,303.00	19,080.55	8,853.00	115.43	120.05	-142.17	1,232.71	10,131.47	3,228.38	3,067.03	161.35	20.009	
16,400.00	6,303.00	19,180.55	8,853.00	116.53	121.13	-142.17	1,233.37	10,231.47	3,228.38	3,065.54	162.84	19.825	
16,500.00	6,303.00	19,280.55	8,853.00	117.64	122.21	-142.17	1,234.03	10,331.46	3,228.38	3,064.04	164.34	19.645	
16,600.00	6,303.00	19,380.55	8,853.00	118.74	123.29	-142.17	1,234.69	10,431.46	3,228.38	3,062.55	165.83	19.467	
16,700.00	6,303.00	19,480.55	8,853.00	119.84	124.38	-142.17	1,235.36	10,531.46	3,228.38	3,061.05	167.33	19.293	
16,800.00	6,303.00	19,580.55	8,853.00	120.94	125.46	-142.17	1,236.02	10,631.46	3,228.38	3,059.55	168.83	19.122	
16,890.04	6,303.00	19,670.59	8,853.00	121.94	126.44	-142.17	1,236.62	10,721.50	3,228.38	3,058.21	170.18	18.971	SF

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B02) Koala 9 Fed Com 204H - Permit - APD-Revv00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,100.00	1,099.69	1,099.69	1,099.69	3.64	3.71	90.81	-0.62	-179.99	179.77	172.43	7.35	24.470	CC
1,200.00	1,199.27	1,199.27	1,199.27	3.98	4.07	93.70	-0.62	-179.99	180.13	172.09	8.04	22.397	ES
1,300.00	1,298.57	1,297.95	1,297.94	4.32	4.40	96.95	-1.80	-180.38	181.46	172.74	8.72	20.806	
1,400.00	1,397.54	1,397.21	1,397.17	4.67	4.73	100.62	-3.99	-181.11	183.95	174.56	9.39	19.580	
1,465.39	1,462.03	1,461.92	1,461.87	4.90	4.94	103.36	-5.42	-181.59	186.31	176.48	9.84	18.935	
1,500.00	1,496.12	1,496.14	1,496.07	5.02	5.05	104.88	-6.18	-181.84	187.82	177.74	10.08	18.641	
1,600.00	1,594.60	1,594.99	1,594.90	5.38	5.39	109.13	-8.36	-182.56	192.90	182.13	10.76	17.922	
1,700.00	1,693.09	1,693.84	1,693.72	5.74	5.72	113.15	-10.54	-183.29	199.00	187.54	11.45	17.372	
1,800.00	1,791.58	1,792.68	1,792.54	6.11	6.06	116.92	-12.72	-184.01	206.03	193.88	12.15	16.958	
1,900.00	1,890.06	1,891.53	1,891.36	6.47	6.39	120.43	-14.90	-184.74	213.91	201.06	12.85	16.650	
2,000.00	1,988.55	1,990.38	1,990.18	6.84	6.74	123.68	-17.09	-185.46	222.54	208.99	13.55	16.429	
2,100.00	2,087.04	2,089.23	2,089.00	7.21	7.08	126.69	-19.27	-186.19	231.83	217.59	14.25	16.274	
2,200.00	2,185.52	2,188.08	2,187.82	7.59	7.42	129.45	-21.45	-186.92	241.72	226.77	14.95	16.173	
2,300.00	2,284.01	2,286.92	2,286.65	7.96	7.76	132.00	-23.63	-187.64	252.13	236.48	15.65	16.113	
2,400.00	2,382.50	2,385.77	2,385.47	8.33	8.11	134.35	-25.81	-188.37	262.99	246.65	16.35	16.087	
2,500.00	2,480.98	2,484.62	2,484.29	8.71	8.46	136.50	-28.00	-189.09	274.27	257.22	17.05	16.086	
2,600.00	2,579.47	2,583.47	2,583.11	9.08	8.80	138.49	-30.18	-189.82	285.90	268.14	17.75	16.104	
2,700.00	2,677.96	2,682.32	2,681.93	9.46	9.15	140.32	-32.36	-190.54	297.84	279.38	18.46	16.138	
2,800.00	2,776.44	2,781.16	2,780.75	9.84	9.50	142.01	-34.54	-191.27	310.06	290.90	19.16	16.184	
2,900.00	2,874.93	2,880.01	2,879.57	10.22	9.85	143.57	-36.72	-191.99	322.53	302.67	19.86	16.239	
3,000.00	2,973.41	2,978.86	2,978.40	10.60	10.19	145.01	-38.91	-192.72	335.22	314.66	20.57	16.300	
3,100.00	3,071.90	3,077.71	3,077.22	10.97	10.54	146.35	-41.09	-193.44	348.11	326.84	21.27	16.366	
3,200.00	3,170.39	3,176.56	3,176.04	11.35	10.89	147.59	-43.27	-194.17	361.17	339.19	21.97	16.436	
3,300.00	3,268.87	3,275.41	3,274.86	11.73	11.24	148.75	-45.45	-194.90	374.38	351.70	22.68	16.508	
3,400.00	3,367.36	3,374.25	3,373.68	12.11	11.59	149.83	-47.63	-195.62	387.74	364.35	23.38	16.581	
3,500.00	3,465.85	3,473.10	3,472.50	12.49	11.95	150.83	-49.82	-196.35	401.22	377.13	24.09	16.655	
3,600.00	3,564.33	3,571.95	3,571.32	12.87	12.30	151.77	-52.00	-197.07	414.82	390.02	24.80	16.730	
3,700.00	3,662.82	3,670.80	3,670.15	13.26	12.65	152.65	-54.18	-197.80	428.51	403.01	25.50	16.804	
3,800.00	3,761.31	3,769.65	3,768.97	13.64	13.00	153.48	-56.36	-198.52	442.31	416.10	26.21	16.877	
3,900.00	3,859.79	3,868.49	3,867.79	14.02	13.35	154.26	-58.54	-199.25	456.18	429.27	26.91	16.949	
4,000.00	3,958.28	3,967.34	3,966.61	14.40	13.70	154.99	-60.73	-199.97	470.14	442.52	27.62	17.021	
4,100.00	4,056.77	4,066.19	4,065.43	14.78	14.06	155.67	-62.91	-200.70	484.17	455.84	28.33	17.091	
4,200.00	4,155.25	4,165.04	4,164.25	15.16	14.41	156.32	-65.09	-201.42	498.26	469.22	29.04	17.160	
4,300.00	4,253.74	4,263.89	4,263.07	15.55	14.76	156.94	-67.27	-202.15	512.41	482.66	29.74	17.227	
4,400.00	4,352.23	4,362.74	4,361.90	15.93	15.11	157.52	-69.45	-202.88	526.61	496.16	30.45	17.293	
4,500.00	4,450.71	4,461.58	4,460.72	16.31	15.47	158.07	-71.64	-203.60	540.87	509.71	31.16	17.358	
4,600.00	4,549.20	4,560.43	4,559.54	16.69	15.82	158.59	-73.82	-204.33	555.17	523.30	31.87	17.421	
4,700.00	4,647.69	4,659.28	4,658.36	17.07	16.17	159.09	-76.00	-205.05	569.52	536.94	32.58	17.482	
4,800.00	4,746.17	4,758.13	4,757.18	17.46	16.52	159.56	-78.18	-205.78	583.90	550.61	33.29	17.542	
4,900.00	4,844.66	4,856.98	4,856.00	17.84	16.88	160.01	-80.36	-206.50	598.32	564.33	33.99	17.600	
5,000.00	4,943.15	4,955.82	4,954.82	18.22	17.23	160.44	-82.55	-207.23	612.78	578.07	34.70	17.657	
5,015.05	4,957.97	4,970.71	4,969.70	18.28	17.28	160.50	-82.87	-207.34	614.96	580.15	34.81	17.666	
5,100.00	5,041.79	5,054.81	5,053.78	18.60	17.58	160.87	-84.73	-207.95	626.38	590.97	35.41	17.688	
5,200.00	5,140.82	5,154.13	5,153.07	18.98	17.94	161.22	-86.92	-208.68	637.58	601.46	36.12	17.650	
5,300.00	5,240.19	5,253.71	5,252.63	19.35	18.30	161.46	-89.12	-209.41	646.33	609.49	36.84	17.546	
5,400.00	5,339.81	5,353.50	5,352.40	19.71	18.65	161.62	-91.32	-210.15	652.60	615.05	37.55	17.380	
5,500.00	5,439.63	5,453.43	5,452.29	20.07	19.01	161.69	-93.53	-210.88	656.40	618.14	38.26	17.156	
5,600.00	5,539.56	5,553.42	5,552.25	20.42	19.37	161.68	-95.74	-211.61	657.71	618.74	38.97	16.876	
5,680.44	5,620.00	5,633.85	5,632.66	20.69	19.66	-15.65	-97.51	-212.20	656.96	617.43	39.53	16.618	
5,700.00	5,639.56	5,653.40	5,652.21	20.75	19.73	-15.67	-97.94	-212.35	656.59	616.92	39.67	16.553	
5,785.38	5,724.94	5,738.76	5,737.55	21.01	20.03	-15.77	-99.83	-212.97	654.94	614.69	40.25	16.272	
5,800.00	5,739.56	5,753.37	5,752.16	21.06	20.08	-116.82	-100.15	-213.08	654.75	614.40	40.35	16.227	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B02) Koala 9 Fed Com 204H - Permit - APD-Revv00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2) **Rule Assigned:** **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,809.79	5,749.34	5,763.16	5,761.94	21.09	20.12	-116.86	-100.37	-213.15	654.71	614.29	40.42	16.198	
5,850.00	5,789.42	5,803.21	5,801.98	21.23	20.26	-117.09	-101.25	-213.45	655.35	614.65	40.70	16.102	
5,900.00	5,838.80	5,852.55	5,851.31	21.39	20.44	-117.51	-102.34	-213.81	658.00	616.95	41.05	16.031	
5,950.00	5,887.30	5,901.01	5,899.75	21.56	20.61	-118.04	-103.41	-214.16	662.80	621.41	41.39	16.013 SF	
6,000.00	5,934.58	5,948.22	5,946.95	21.72	20.78	-118.64	-104.45	-214.51	669.89	628.16	41.73	16.054	
6,050.00	5,980.25	5,993.82	5,992.54	21.87	20.94	-119.24	-105.46	-214.85	679.45	637.40	42.05	16.156	
6,100.00	6,023.98	6,037.47	6,036.18	22.02	21.10	-119.78	-106.42	-215.17	691.66	649.29	42.37	16.324	
6,150.00	6,065.44	6,078.83	6,077.53	22.15	21.25	-120.18	-107.33	-215.47	706.68	664.01	42.67	16.561	
6,200.00	6,104.31	6,117.60	6,116.28	22.28	21.39	-120.37	-108.19	-215.75	724.64	681.69	42.95	16.870	
6,250.00	6,140.29	6,153.46	6,152.14	22.40	21.52	-120.25	-108.98	-216.02	745.63	702.41	43.22	17.253	
6,300.00	6,173.10	6,186.16	6,184.82	22.51	21.63	-119.76	-109.70	-216.26	769.67	726.21	43.46	17.710	
6,350.00	6,202.51	6,215.43	6,214.09	22.61	21.74	-118.78	-110.35	-216.47	796.72	753.04	43.68	18.242	
6,385.38	6,221.14	6,233.96	6,232.62	22.68	21.80	-117.74	-110.76	-216.61	817.61	773.79	43.81	18.661	
6,400.00	6,228.29	6,241.08	6,239.73	22.71	21.83	-116.79	-110.92	-216.66	826.60	782.73	43.87	18.843	
6,450.00	6,250.45	6,263.07	6,261.72	22.80	21.91	-113.40	-111.40	-216.82	858.28	814.25	44.03	19.494	
6,500.00	6,268.88	6,281.29	6,279.93	22.89	21.97	-109.69	-111.80	-216.96	891.34	847.17	44.16	20.182	
6,550.00	6,283.45	6,295.60	6,294.24	22.98	22.03	-105.61	-112.12	-217.06	925.60	881.33	44.28	20.905	
6,600.00	6,294.04	6,305.90	6,304.54	23.07	22.06	-101.15	-112.35	-217.14	960.88	916.52	44.36	21.660	
6,650.00	6,300.57	6,312.11	6,310.74	23.17	22.08	-96.33	-112.48	-217.18	996.93	952.51	44.42	22.442	
6,704.35	6,303.00	6,314.16	6,312.79	23.29	22.09	-90.80	-112.53	-217.20	1,036.69	992.22	44.46	23.316	
6,800.00	6,303.00	6,313.44	6,312.08	23.52	22.09	-90.74	-112.51	-217.19	1,108.87	1,064.35	44.51	24.912	
15,800.00	6,303.00	18,479.33	8,853.00	109.94	114.12	-165.49	-90.49	9,640.22	2,634.02	2,528.60	105.42	24.986	
15,900.00	6,303.00	18,579.33	8,853.00	111.03	115.20	-165.49	-89.83	9,740.21	2,634.02	2,527.61	106.41	24.753	
16,000.00	6,303.00	18,679.33	8,853.00	112.13	116.28	-165.49	-89.17	9,840.21	2,634.02	2,526.61	107.40	24.524	
16,100.00	6,303.00	18,779.33	8,853.00	113.23	117.36	-165.49	-88.50	9,940.21	2,634.02	2,525.62	108.40	24.299	
16,200.00	6,303.00	18,879.33	8,853.00	114.33	118.44	-165.49	-87.84	10,040.21	2,634.02	2,524.63	109.39	24.078	
16,300.00	6,303.00	18,979.33	8,853.00	115.43	119.53	-165.49	-87.18	10,140.21	2,634.02	2,523.63	110.39	23.861	
16,400.00	6,303.00	19,079.33	8,853.00	116.53	120.61	-165.49	-86.52	10,240.20	2,634.02	2,522.63	111.39	23.647	
16,500.00	6,303.00	19,179.33	8,853.00	117.64	121.70	-165.49	-85.85	10,340.20	2,634.02	2,521.64	112.38	23.438	
16,600.00	6,303.00	19,279.33	8,853.00	118.74	122.78	-165.49	-85.19	10,440.20	2,634.02	2,520.64	113.38	23.231	
16,700.00	6,303.00	19,379.33	8,853.00	119.84	123.87	-165.49	-84.53	10,540.20	2,634.02	2,519.64	114.38	23.029	
16,800.00	6,303.00	19,479.33	8,853.00	120.94	124.96	-165.49	-83.86	10,640.20	2,634.02	2,518.64	115.38	22.829	
16,890.04	6,303.00	19,569.37	8,853.00	121.94	125.93	-165.49	-83.27	10,730.24	2,634.02	2,517.74	116.28	22.652	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B03) Koala 9 Fed Com 133H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,000.00	999.91	999.91	999.91	3.31	3.35	89.07	-0.50	-149.98	149.80	143.15	6.65	22.510	
1,042.24	1,042.08	1,042.08	1,042.08	3.45	3.50	90.00	-0.50	-149.98	149.78	142.84	6.95	21.561	CC
1,100.00	1,099.69	1,099.69	1,099.69	3.64	3.71	91.56	-0.50	-149.98	149.84	142.49	7.35	20.396	
1,200.00	1,199.27	1,199.27	1,199.27	3.98	4.07	95.03	-0.50	-149.98	150.37	142.33	8.04	18.696	ES
1,300.00	1,298.57	1,297.41	1,297.40	4.32	4.42	99.78	0.74	-150.09	152.23	143.49	8.74	17.422	
1,400.00	1,397.54	1,394.37	1,394.29	4.67	4.77	106.02	4.43	-150.40	156.84	147.41	9.43	16.629	
1,465.39	1,462.03	1,456.96	1,456.76	4.90	4.99	110.65	8.11	-150.71	162.02	152.14	9.88	16.395	
1,500.00	1,496.12	1,489.82	1,489.54	5.02	5.11	113.21	10.45	-150.91	165.55	155.43	10.12	16.360	SF
1,600.00	1,594.60	1,583.96	1,583.31	5.38	5.45	120.35	18.71	-151.61	178.61	167.82	10.80	16.545	
1,700.00	1,693.09	1,677.30	1,676.06	5.74	5.78	126.92	29.15	-152.50	195.93	184.47	11.46	17.098	
1,800.00	1,791.58	1,772.98	1,771.03	6.11	6.12	132.70	40.70	-153.48	216.24	204.10	12.14	17.817	
1,900.00	1,890.06	1,868.66	1,866.01	6.47	6.46	137.49	52.25	-154.47	238.37	225.55	12.82	18.600	
2,000.00	1,988.55	1,964.34	1,960.98	6.84	6.80	141.47	63.80	-155.45	261.86	248.36	13.49	19.405	
2,100.00	2,087.04	2,060.02	2,055.96	7.21	7.14	144.80	75.34	-156.43	286.38	272.20	14.17	20.204	
2,200.00	2,185.52	2,155.70	2,150.94	7.59	7.48	147.61	86.89	-157.41	311.68	296.82	14.85	20.982	
2,300.00	2,284.01	2,251.38	2,245.91	7.96	7.83	150.00	98.44	-158.39	337.59	322.05	15.54	21.730	
2,400.00	2,382.50	2,347.06	2,340.89	8.33	8.17	152.05	109.99	-159.38	363.98	347.76	16.22	22.443	
2,500.00	2,480.98	2,442.74	2,435.86	8.71	8.52	153.82	121.54	-160.36	390.74	373.84	16.90	23.119	
2,600.00	2,579.47	2,538.42	2,530.84	9.08	8.86	155.37	133.09	-161.34	417.82	400.24	17.59	23.760	
2,700.00	2,677.96	2,634.10	2,625.82	9.46	9.21	156.74	144.63	-162.32	445.15	426.88	18.27	24.365	
2,800.00	2,776.44	2,729.78	2,720.79	9.84	9.55	157.94	156.18	-163.30	472.69	453.73	18.96	24.937	
13,200.00	6,303.00	15,292.94	8,523.00	81.59	85.69	-149.27	552.17	7,035.89	2,582.71	2,479.31	103.40	24.977	
13,300.00	6,303.00	15,392.94	8,523.00	82.67	86.74	-149.27	552.84	7,135.88	2,582.71	2,478.02	104.70	24.668	
13,400.00	6,303.00	15,492.94	8,523.00	83.75	87.79	-149.27	553.50	7,235.88	2,582.72	2,476.72	106.00	24.366	
13,500.00	6,303.00	15,592.94	8,523.00	84.83	88.84	-149.27	554.17	7,335.88	2,582.72	2,475.42	107.30	24.071	
13,600.00	6,303.00	15,692.94	8,523.00	85.91	89.89	-149.27	554.83	7,435.88	2,582.72	2,474.12	108.60	23.783	
13,700.00	6,303.00	15,792.94	8,523.00	87.00	90.95	-149.27	555.49	7,535.87	2,582.72	2,472.82	109.90	23.501	
13,800.00	6,303.00	15,892.94	8,523.00	88.08	92.01	-149.27	556.16	7,635.87	2,582.72	2,471.52	111.20	23.225	
13,900.00	6,303.00	15,992.94	8,523.00	89.17	93.06	-149.27	556.82	7,735.87	2,582.72	2,470.21	112.51	22.956	
14,000.00	6,303.00	16,092.94	8,523.00	90.26	94.12	-149.27	557.49	7,835.87	2,582.72	2,468.91	113.82	22.692	
14,100.00	6,303.00	16,192.94	8,523.00	91.34	95.19	-149.27	558.15	7,935.87	2,582.72	2,467.60	115.13	22.434	
14,200.00	6,303.00	16,292.94	8,523.00	92.43	96.25	-149.27	558.81	8,035.86	2,582.72	2,466.29	116.44	22.181	
14,300.00	6,303.00	16,392.94	8,523.00	93.52	97.31	-149.27	559.48	8,135.86	2,582.73	2,464.98	117.75	21.934	
14,400.00	6,303.00	16,492.94	8,523.00	94.61	98.38	-149.27	560.14	8,235.86	2,582.73	2,463.67	119.06	21.692	
14,500.00	6,303.00	16,592.94	8,523.00	95.70	99.45	-149.27	560.81	8,335.86	2,582.73	2,462.35	120.38	21.455	
14,600.00	6,303.00	16,692.94	8,523.00	96.79	100.51	-149.27	561.47	8,435.86	2,582.73	2,461.04	121.69	21.223	
14,700.00	6,303.00	16,792.94	8,523.00	97.88	101.58	-149.27	562.13	8,535.85	2,582.73	2,459.72	123.01	20.996	
14,800.00	6,303.00	16,892.94	8,523.00	98.98	102.65	-149.27	562.80	8,635.85	2,582.73	2,458.40	124.33	20.774	
14,900.00	6,303.00	16,992.94	8,523.00	100.07	103.73	-149.27	563.46	8,735.85	2,582.73	2,457.08	125.65	20.555	
15,000.00	6,303.00	17,092.94	8,523.00	101.16	104.80	-149.27	564.12	8,835.85	2,582.73	2,455.77	126.97	20.342	
15,100.00	6,303.00	17,192.94	8,523.00	102.26	105.87	-149.27	564.79	8,935.84	2,582.73	2,454.44	128.29	20.132	
15,200.00	6,303.00	17,292.94	8,523.00	103.35	106.95	-149.27	565.45	9,035.84	2,582.74	2,453.12	129.61	19.926	
15,300.00	6,303.00	17,392.94	8,523.00	104.45	108.02	-149.27	566.12	9,135.84	2,582.74	2,451.80	130.94	19.725	
15,400.00	6,303.00	17,492.94	8,523.00	105.55	109.10	-149.27	566.78	9,235.84	2,582.74	2,450.48	132.26	19.527	
15,500.00	6,303.00	17,592.94	8,523.00	106.64	110.17	-149.27	567.44	9,335.84	2,582.74	2,449.15	133.59	19.334	
15,600.00	6,303.00	17,692.94	8,523.00	107.74	111.25	-149.27	568.11	9,435.83	2,582.74	2,447.83	134.91	19.143	
15,700.00	6,303.00	17,792.94	8,523.00	108.84	112.33	-149.27	568.77	9,535.83	2,582.74	2,446.50	136.24	18.957	
15,800.00	6,303.00	17,892.94	8,523.00	109.94	113.41	-149.27	569.44	9,635.83	2,582.74	2,445.17	137.57	18.774	
15,900.00	6,303.00	17,992.94	8,523.00	111.03	114.49	-149.27	570.10	9,735.83	2,582.74	2,443.84	138.90	18.594	
16,000.00	6,303.00	18,092.94	8,523.00	112.13	115.57	-149.27	570.76	9,835.82	2,582.74	2,442.51	140.23	18.418	
16,100.00	6,303.00	18,192.94	8,523.00	113.23	116.66	-149.27	571.43	9,935.82	2,582.75	2,441.18	141.56	18.245	
16,200.00	6,303.00	18,292.94	8,523.00	114.33	117.74	-149.27	572.09	10,035.82	2,582.75	2,439.85	142.89	18.075	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B03) Koala 9 Fed Com 133H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,300.00	6,303.00	18,392.94	8,523.00	115.43	118.82	-149.27	572.76	10,135.82	2,582.75	2,438.52	144.23	17.908	
16,400.00	6,303.00	18,492.94	8,523.00	116.53	119.91	-149.27	573.42	10,235.82	2,582.75	2,437.19	145.56	17.743	
16,500.00	6,303.00	18,592.94	8,523.00	117.64	120.99	-149.27	574.08	10,335.81	2,582.75	2,435.86	146.89	17.582	
16,600.00	6,303.00	18,692.94	8,523.00	118.74	122.08	-149.27	574.75	10,435.81	2,582.75	2,434.52	148.23	17.424	
16,700.00	6,303.00	18,792.94	8,523.00	119.84	123.17	-149.27	575.41	10,535.81	2,582.75	2,433.19	149.57	17.268	
16,800.00	6,303.00	18,892.94	8,523.00	120.94	124.25	-149.27	576.08	10,635.81	2,582.75	2,431.85	150.90	17.115	
16,890.04	6,303.00	18,982.98	8,523.00	121.94	125.23	-149.27	576.67	10,725.85	2,582.75	2,430.65	152.11	16.980	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B04) Koala 9 Fed Com 134H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
800.00	800.00	800.00	800.00	2.63	2.63	-90.23	-0.48	-120.02	120.02	114.75	5.27	22.776	
900.00	899.99	899.99	899.99	2.98	2.99	87.65	-0.48	-120.02	119.96	113.99	5.97	20.099	
1,000.00	999.91	999.91	999.91	3.31	3.35	89.53	-0.48	-120.02	119.86	113.21	6.65	18.011	
1,018.14	1,018.02	1,018.02	1,018.02	3.37	3.42	90.00	-0.48	-120.02	119.86	113.08	6.78	17.677	CC
1,100.00	1,099.69	1,099.69	1,099.69	3.64	3.71	92.64	-0.48	-120.02	119.99	112.64	7.35	16.332	ES
1,200.00	1,199.27	1,199.27	1,199.27	3.98	4.07	96.95	-0.48	-120.02	120.76	112.71	8.04	15.014	
1,300.00	1,298.57	1,299.20	1,299.19	4.32	4.41	101.79	-1.77	-120.10	122.49	113.76	8.73	14.036	
1,400.00	1,397.54	1,399.41	1,399.31	4.67	4.73	106.46	-5.67	-120.34	125.11	115.71	9.40	13.308	
1,465.39	1,462.03	1,465.08	1,464.87	4.90	4.95	109.39	-9.66	-120.58	127.28	117.43	9.85	12.926	
1,500.00	1,496.12	1,499.91	1,499.60	5.02	5.07	110.86	-12.23	-120.73	128.51	118.42	10.08	12.744	
1,600.00	1,594.60	1,600.85	1,600.12	5.38	5.41	114.22	-21.46	-121.30	131.78	121.01	10.77	12.233	
1,700.00	1,693.09	1,702.17	1,700.72	5.74	5.75	116.40	-33.38	-122.02	134.32	122.85	11.47	11.713	
1,800.00	1,791.58	1,802.26	1,799.91	6.11	6.08	117.87	-46.75	-122.84	136.29	124.13	12.17	11.201	
1,900.00	1,890.06	1,902.18	1,898.93	6.47	6.43	119.30	-60.12	-123.65	138.35	125.48	12.87	10.748	
2,000.00	1,988.55	2,002.10	1,997.95	6.84	6.78	120.68	-73.48	-124.46	140.49	126.91	13.58	10.344	
2,100.00	2,087.04	2,102.02	2,096.97	7.21	7.13	122.01	-86.85	-125.28	142.71	128.42	14.29	9.984	
2,200.00	2,185.52	2,201.94	2,195.99	7.59	7.48	123.31	-100.21	-126.09	145.00	130.00	15.01	9.662	
2,300.00	2,284.01	2,301.86	2,295.01	7.96	7.84	124.57	-113.58	-126.90	147.37	131.65	15.72	9.372	
2,400.00	2,382.50	2,401.78	2,394.03	8.33	8.20	125.78	-126.94	-127.72	149.80	133.36	16.44	9.111	
2,500.00	2,480.98	2,501.70	2,493.05	8.71	8.55	126.96	-140.31	-128.53	152.30	135.14	17.16	8.875	
2,600.00	2,579.47	2,601.63	2,592.07	9.08	8.91	128.10	-153.67	-129.34	154.87	136.99	17.88	8.661	
2,700.00	2,677.96	2,701.55	2,691.09	9.46	9.28	129.20	-167.04	-130.16	157.49	138.89	18.60	8.466	
2,800.00	2,776.44	2,801.47	2,790.11	9.84	9.64	130.26	-180.40	-130.97	160.16	140.84	19.32	8.289	
2,900.00	2,874.93	2,901.39	2,889.13	10.22	10.00	131.29	-193.77	-131.79	162.90	142.85	20.04	8.127	
3,000.00	2,973.41	3,001.31	2,988.15	10.60	10.36	132.28	-207.13	-132.60	165.68	144.91	20.77	7.978	
3,100.00	3,071.90	3,101.23	3,087.17	10.97	10.73	133.24	-220.50	-133.41	168.51	147.02	21.49	7.842	
3,200.00	3,170.39	3,201.15	3,186.19	11.35	11.09	134.17	-233.86	-134.23	171.38	149.17	22.21	7.716	
3,300.00	3,268.87	3,301.07	3,285.21	11.73	11.46	135.07	-247.23	-135.04	174.30	151.37	22.93	7.600	
3,400.00	3,367.36	3,400.99	3,384.23	12.11	11.83	135.94	-260.59	-135.85	177.26	153.61	23.66	7.494	
3,500.00	3,465.85	3,500.91	3,483.24	12.49	12.19	136.78	-273.96	-136.67	180.26	155.88	24.38	7.395	
3,600.00	3,564.33	3,600.83	3,582.26	12.87	12.56	137.59	-287.32	-137.48	183.30	158.20	25.10	7.303	
3,700.00	3,662.82	3,700.75	3,681.28	13.26	12.93	138.38	-300.69	-138.29	186.37	160.55	25.82	7.218	
3,800.00	3,761.31	3,800.67	3,780.30	13.64	13.30	139.14	-314.05	-139.11	189.48	162.93	26.54	7.138	
3,900.00	3,859.79	3,900.59	3,879.32	14.02	13.67	139.87	-327.42	-139.92	192.62	165.35	27.27	7.064	
4,000.00	3,958.28	4,000.51	3,978.34	14.40	14.04	140.58	-340.78	-140.73	195.79	167.80	27.99	6.996	
4,100.00	4,056.77	4,100.44	4,077.36	14.78	14.41	141.27	-354.15	-141.55	198.98	170.28	28.71	6.931	
4,200.00	4,155.25	4,200.36	4,176.38	15.16	14.78	141.94	-367.51	-142.36	202.21	172.78	29.43	6.871	
4,300.00	4,253.74	4,300.28	4,275.40	15.55	15.15	142.59	-380.88	-143.17	205.46	175.31	30.15	6.814	
4,400.00	4,352.23	4,400.20	4,374.42	15.93	15.52	143.21	-394.24	-143.99	208.74	177.87	30.87	6.761	
4,500.00	4,450.71	4,500.12	4,473.44	16.31	15.89	143.82	-407.61	-144.80	212.05	180.45	31.59	6.711	
4,600.00	4,549.20	4,600.04	4,572.46	16.69	16.26	144.40	-420.98	-145.62	215.37	183.06	32.32	6.665	
4,700.00	4,647.69	4,699.96	4,671.48	17.07	16.63	144.97	-434.34	-146.43	218.72	185.68	33.04	6.620	
4,800.00	4,746.17	4,799.88	4,770.50	17.46	17.00	145.53	-447.71	-147.24	222.09	188.33	33.76	6.579	
4,900.00	4,844.66	4,899.80	4,869.52	17.84	17.37	146.06	-461.07	-148.06	225.48	191.00	34.48	6.540	
5,000.00	4,943.15	4,999.72	4,968.54	18.22	17.74	146.58	-474.44	-148.87	228.88	193.68	35.20	6.502	
5,015.05	4,957.97	5,014.76	4,983.44	18.28	17.80	146.66	-476.45	-148.99	229.40	194.09	35.31	6.497	
5,100.00	5,041.79	5,099.67	5,067.59	18.60	18.11	146.98	-487.80	-149.68	231.52	195.60	35.92	6.445	
5,200.00	5,140.82	5,199.67	5,166.68	18.98	18.48	147.01	-501.18	-150.50	231.99	195.34	36.65	6.330	
5,300.00	5,240.19	5,299.64	5,265.75	19.35	18.86	146.66	-514.55	-151.31	230.26	192.88	37.38	6.160	
5,400.00	5,339.81	5,399.52	5,364.73	19.71	19.23	145.93	-527.91	-152.12	226.38	188.26	38.12	5.939	
5,500.00	5,439.63	5,499.25	5,463.56	20.07	19.60	144.76	-541.25	-152.94	220.38	181.52	38.86	5.671	
5,600.00	5,539.56	5,598.74	5,562.15	20.42	19.97	143.10	-554.56	-153.75	212.38	172.77	39.61	5.362	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B04) Koala 9 Fed Com 134H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Rule Assigned:

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,680.44	5,620.00	5,678.57	5,641.26	20.69	20.27	-35.93	-565.24	-154.40	204.58	164.38	40.20	5.089	
5,700.00	5,639.56	5,697.95	5,660.47	20.75	20.34	-36.40	-567.83	-154.55	202.56	162.21	40.35	5.020	
5,785.38	5,724.94	5,782.56	5,744.31	21.01	20.66	-38.56	-579.15	-155.24	193.88	152.91	40.97	4.732	
5,800.00	5,739.56	5,797.05	5,758.67	21.06	20.71	-140.07	-581.08	-155.36	192.57	151.49	41.08	4.687	
5,850.00	5,789.42	5,846.52	5,807.70	21.23	20.89	-142.21	-587.70	-155.76	190.37	148.90	41.47	4.590	
5,854.68	5,794.07	5,851.14	5,812.27	21.24	20.91	-142.44	-588.32	-155.80	190.35	148.84	41.51	4.586	
5,900.00	5,838.80	5,895.59	5,856.32	21.39	21.08	-144.89	-594.26	-156.16	191.97	150.09	41.88	4.584	SF
5,950.00	5,887.30	5,943.87	5,904.17	21.56	21.26	-147.91	-600.72	-156.56	197.71	155.42	42.29	4.675	
6,000.00	5,934.58	5,991.00	5,950.87	21.72	21.43	-151.05	-607.03	-156.94	207.87	165.18	42.70	4.869	
6,050.00	5,980.25	6,036.62	5,996.08	21.87	21.60	-154.10	-613.13	-157.31	222.63	179.54	43.09	5.167	
6,100.00	6,023.98	6,080.38	6,039.45	22.02	21.77	-156.91	-618.98	-157.67	241.99	198.54	43.46	5.569	
6,150.00	6,065.44	6,121.96	6,080.65	22.15	21.92	-159.36	-624.54	-158.01	265.82	222.02	43.80	6.069	
6,200.00	6,104.31	6,161.02	6,119.36	22.28	22.07	-161.41	-629.77	-158.32	293.86	249.76	44.10	6.663	
6,250.00	6,140.29	6,197.28	6,155.30	22.40	22.20	-163.05	-634.62	-158.62	325.80	281.43	44.38	7.341	
6,300.00	6,173.10	6,230.47	6,188.18	22.51	22.33	-164.26	-639.06	-158.89	361.28	316.66	44.62	8.097	
6,350.00	6,202.51	6,260.32	6,217.76	22.61	22.44	-165.04	-643.05	-159.13	399.92	355.10	44.83	8.921	
6,385.38	6,221.14	6,279.30	6,236.58	22.68	22.51	-165.31	-645.59	-159.29	428.97	384.01	44.96	9.542	
6,400.00	6,228.29	6,286.61	6,243.82	22.71	22.53	-164.25	-646.57	-159.35	441.32	396.32	45.01	9.806	
6,450.00	6,250.45	6,309.18	6,266.19	22.80	22.62	-160.03	-649.58	-159.53	484.85	439.70	45.15	10.739	
6,500.00	6,268.88	6,327.87	6,284.71	22.89	22.69	-154.42	-652.09	-159.68	530.09	484.83	45.27	11.710	
6,550.00	6,283.45	6,342.54	6,299.25	22.98	22.74	-146.51	-654.05	-159.80	576.73	531.37	45.36	12.715	
6,600.00	6,294.04	6,353.08	6,309.69	23.07	22.78	-134.95	-655.46	-159.89	624.42	579.00	45.42	13.748	
6,650.00	6,300.57	6,359.40	6,315.95	23.17	22.81	-118.31	-656.30	-159.94	672.82	627.36	45.46	14.800	
6,704.35	6,303.00	6,361.44	6,317.97	23.29	22.81	-95.39	-656.57	-159.96	725.79	680.32	45.48	15.960	
6,800.00	6,303.00	6,360.57	6,317.12	23.52	22.81	-95.08	-656.46	-159.95	819.38	773.89	45.48	18.016	
6,900.00	6,303.00	6,359.67	6,316.22	23.82	22.81	-94.75	-656.34	-159.94	917.67	872.18	45.49	20.174	
7,000.00	6,303.00	6,358.77	6,315.33	24.18	22.80	-94.43	-656.22	-159.93	1,016.29	970.80	45.49	22.339	
7,100.00	6,303.00	6,357.87	6,314.43	24.59	22.80	-94.11	-656.10	-159.93	1,115.16	1,069.66	45.50	24.509	
15,500.00	6,303.00	17,845.83	8,523.00	106.64	109.91	180.00	-752.45	9,344.60	2,220.00	2,130.63	89.37	24.840	
15,600.00	6,303.00	17,945.83	8,523.00	107.74	110.99	180.00	-751.78	9,444.60	2,220.00	2,129.76	90.24	24.600	
15,700.00	6,303.00	18,045.83	8,523.00	108.84	112.07	180.00	-751.12	9,544.59	2,220.00	2,128.88	91.12	24.364	
15,800.00	6,303.00	18,145.83	8,523.00	109.94	113.15	180.00	-750.46	9,644.59	2,220.00	2,128.01	91.99	24.132	
15,900.00	6,303.00	18,245.83	8,523.00	111.03	114.23	180.00	-749.80	9,744.59	2,220.00	2,127.13	92.87	23.905	
16,000.00	6,303.00	18,345.83	8,523.00	112.13	115.32	180.00	-749.13	9,844.59	2,220.00	2,126.26	93.74	23.682	
16,100.00	6,303.00	18,445.83	8,523.00	113.23	116.40	180.00	-748.47	9,944.58	2,220.00	2,125.38	94.62	23.462	
16,200.00	6,303.00	18,545.83	8,523.00	114.33	117.48	180.00	-747.81	10,044.58	2,220.00	2,124.50	95.50	23.247	
16,300.00	6,303.00	18,645.83	8,523.00	115.43	118.57	180.00	-747.14	10,144.58	2,220.00	2,123.63	96.37	23.035	
16,400.00	6,303.00	18,745.83	8,523.00	116.53	119.66	180.00	-746.48	10,244.58	2,220.00	2,122.75	97.25	22.827	
16,500.00	6,303.00	18,845.83	8,523.00	117.64	120.74	180.00	-745.82	10,344.58	2,220.00	2,121.87	98.13	22.623	
16,600.00	6,303.00	18,945.83	8,523.00	118.74	121.83	180.00	-745.15	10,444.57	2,220.00	2,120.99	99.01	22.422	
16,700.00	6,303.00	19,045.83	8,523.00	119.84	122.92	180.00	-744.49	10,544.57	2,220.00	2,120.11	99.89	22.224	
16,800.00	6,303.00	19,145.83	8,523.00	120.94	124.01	-180.00	-743.83	10,644.57	2,220.00	2,119.23	100.77	22.030	
16,890.04	6,303.00	19,235.87	8,523.00	121.94	124.99	-180.00	-743.23	10,734.61	2,220.00	2,118.44	101.56	21.858	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B05) Koala 9 Fed Com 123H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2) **Rule Assigned:** **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
600.00	600.00	600.00	600.00	1.92	1.92	-90.23	-0.36	-90.02	90.02	86.19	3.84	23.470	
700.00	700.00	700.00	700.00	2.28	2.28	-90.23	-0.36	-90.02	90.02	85.47	4.55	19.774	
800.00	800.00	800.00	800.00	2.63	2.63	-90.23	-0.36	-90.02	90.02	84.75	5.27	17.083	
900.00	899.99	899.99	899.99	2.98	2.99	87.86	-0.36	-90.02	89.96	83.99	5.97	15.073	
988.91	988.83	988.83	988.83	3.27	3.31	90.00	-0.36	-90.02	89.90	83.32	6.58	13.665	CC
1,000.00	999.91	999.91	999.91	3.31	3.35	90.36	-0.36	-90.02	89.90	83.25	6.65	13.509	
1,100.00	1,099.69	1,099.69	1,099.69	3.64	3.71	94.50	-0.36	-90.02	90.18	82.83	7.35	12.275	ES
1,200.00	1,199.27	1,199.27	1,199.27	3.98	4.07	100.19	-0.36	-90.02	91.36	83.31	8.04	11.359	
1,300.00	1,298.57	1,297.56	1,297.55	4.32	4.42	107.77	0.88	-90.11	94.69	85.95	8.74	10.835	
1,400.00	1,397.54	1,394.66	1,394.58	4.67	4.77	117.06	4.59	-90.39	102.15	92.72	9.43	10.831	
1,465.39	1,462.03	1,457.34	1,457.14	4.90	4.99	123.39	8.28	-90.67	110.04	100.16	9.88	11.138	
1,500.00	1,496.12	1,490.25	1,489.97	5.02	5.11	126.67	10.63	-90.84	115.22	105.10	10.11	11.391	
1,600.00	1,594.60	1,584.52	1,583.87	5.38	5.45	135.03	18.92	-91.47	133.34	122.56	10.78	12.369	
1,700.00	1,693.09	1,677.50	1,676.26	5.74	5.78	141.73	29.36	-92.25	155.75	144.32	11.43	13.629	
1,800.00	1,791.58	1,769.58	1,767.47	6.11	6.11	147.05	41.89	-93.19	181.90	169.84	12.06	15.079	
1,900.00	1,890.06	1,864.51	1,861.39	6.47	6.44	151.26	55.68	-94.22	210.08	197.35	12.73	16.502	
2,000.00	1,988.55	1,959.44	1,955.31	6.84	6.78	154.48	69.47	-95.26	239.07	225.67	13.40	17.839	
2,100.00	2,087.04	2,054.37	2,049.23	7.21	7.12	157.01	83.27	-96.29	268.62	254.54	14.07	19.085	
2,200.00	2,185.52	2,149.30	2,143.14	7.59	7.46	159.04	97.06	-97.33	298.55	283.80	14.75	20.242	
2,300.00	2,284.01	2,244.23	2,237.06	7.96	7.80	160.70	110.85	-98.36	328.76	313.33	15.43	21.313	
2,400.00	2,382.50	2,339.16	2,330.98	8.33	8.14	162.08	124.64	-99.39	359.18	343.08	16.10	22.306	
2,500.00	2,480.98	2,434.09	2,424.90	8.71	8.49	163.25	138.43	-100.43	389.76	372.98	16.78	23.226	
2,600.00	2,579.47	2,529.02	2,518.81	9.08	8.83	164.24	152.22	-101.46	420.47	403.01	17.46	24.081	
2,700.00	2,677.96	2,623.95	2,612.73	9.46	9.17	165.11	166.01	-102.50	451.28	433.14	18.14	24.876	
9,100.00	6,303.00	9,946.44	7,328.00	39.43	42.50	-127.83	525.00	2,935.98	1,671.09	1,603.19	67.90	24.611	
9,200.00	6,303.00	10,046.44	7,328.00	40.35	43.39	-127.83	525.66	3,035.98	1,671.09	1,601.70	69.39	24.083	
9,300.00	6,303.00	10,146.44	7,328.00	41.29	44.28	-127.83	526.33	3,135.98	1,671.09	1,600.19	70.89	23.572	
9,400.00	6,303.00	10,246.44	7,328.00	42.24	45.19	-127.83	526.99	3,235.98	1,671.09	1,598.67	72.41	23.077	
9,500.00	6,303.00	10,346.44	7,328.00	43.20	46.10	-127.83	527.65	3,335.97	1,671.09	1,597.14	73.95	22.597	
9,600.00	6,303.00	10,446.44	7,328.00	44.16	47.03	-127.83	528.32	3,435.97	1,671.09	1,595.59	75.50	22.134	
9,700.00	6,303.00	10,546.44	7,328.00	45.13	47.96	-127.83	528.98	3,535.97	1,671.09	1,594.03	77.06	21.685	
9,800.00	6,303.00	10,646.44	7,328.00	46.11	48.90	-127.83	529.64	3,635.97	1,671.09	1,592.46	78.64	21.251	
9,900.00	6,303.00	10,746.44	7,328.00	47.09	49.85	-127.83	530.31	3,735.97	1,671.10	1,590.87	80.22	20.830	
10,000.00	6,303.00	10,846.44	7,328.00	48.08	50.81	-127.83	530.97	3,835.96	1,671.10	1,589.28	81.82	20.424	
10,100.00	6,303.00	10,946.44	7,328.00	49.08	51.77	-127.83	531.63	3,935.96	1,671.10	1,587.67	83.43	20.030	
10,200.00	6,303.00	11,046.44	7,328.00	50.08	52.74	-127.83	532.30	4,035.96	1,671.10	1,586.05	85.05	19.649	
10,300.00	6,303.00	11,146.44	7,328.00	51.08	53.71	-127.83	532.96	4,135.96	1,671.10	1,584.43	86.67	19.281	
10,400.00	6,303.00	11,246.44	7,328.00	52.10	54.69	-127.83	533.62	4,235.96	1,671.10	1,582.79	88.31	18.924	
10,500.00	6,303.00	11,346.44	7,328.00	53.11	55.68	-127.83	534.29	4,335.95	1,671.10	1,581.15	89.95	18.578	
10,600.00	6,303.00	11,446.44	7,328.00	54.13	56.67	-127.83	534.95	4,435.95	1,671.10	1,579.50	91.60	18.243	
10,700.00	6,303.00	11,546.44	7,328.00	55.15	57.67	-127.83	535.61	4,535.95	1,671.11	1,577.84	93.26	17.919	
10,800.00	6,303.00	11,646.44	7,328.00	56.18	58.67	-127.83	536.28	4,635.95	1,671.11	1,576.18	94.93	17.604	
10,900.00	6,303.00	11,746.44	7,328.00	57.21	59.67	-127.83	536.94	4,735.94	1,671.11	1,574.51	96.60	17.300	
11,000.00	6,303.00	11,846.44	7,328.00	58.25	60.68	-127.83	537.60	4,835.94	1,671.11	1,572.83	98.28	17.004	
11,100.00	6,303.00	11,946.44	7,328.00	59.28	61.69	-127.83	538.27	4,935.94	1,671.11	1,571.15	99.96	16.718	
11,200.00	6,303.00	12,046.44	7,328.00	60.32	62.71	-127.83	538.93	5,035.94	1,671.11	1,569.46	101.65	16.440	
11,300.00	6,303.00	12,146.44	7,328.00	61.37	63.73	-127.83	539.59	5,135.94	1,671.11	1,567.77	103.34	16.170	
11,400.00	6,303.00	12,246.44	7,328.00	62.41	64.75	-127.83	540.26	5,235.93	1,671.11	1,566.07	105.04	15.909	
11,500.00	6,303.00	12,346.44	7,328.00	63.46	65.78	-127.83	540.92	5,335.93	1,671.12	1,564.37	106.75	15.655	
11,600.00	6,303.00	12,446.44	7,328.00	64.51	66.81	-127.83	541.58	5,435.93	1,671.12	1,562.66	108.46	15.408	
11,700.00	6,303.00	12,546.44	7,328.00	65.57	67.84	-127.83	542.25	5,535.93	1,671.12	1,560.95	110.17	15.168	
11,800.00	6,303.00	12,646.44	7,328.00	66.62	68.87	-127.83	542.91	5,635.92	1,671.12	1,559.23	111.89	14.935	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B05) Koala 9 Fed Com 123H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Rule Assigned: Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,900.00	6,303.00	12,746.44	7,328.00	67.68	69.91	-127.83	543.57	5,735.92	1,671.12	1,557.51	113.61	14.709	
12,000.00	6,303.00	12,846.44	7,328.00	68.74	70.95	-127.83	544.24	5,835.92	1,671.12	1,555.78	115.34	14.489	
12,100.00	6,303.00	12,946.44	7,328.00	69.80	72.00	-127.83	544.90	5,935.92	1,671.12	1,554.06	117.07	14.275	
12,200.00	6,303.00	13,046.44	7,328.00	70.87	73.04	-127.83	545.56	6,035.92	1,671.12	1,552.32	118.80	14.067	
12,300.00	6,303.00	13,146.44	7,328.00	71.93	74.09	-127.83	546.23	6,135.91	1,671.12	1,550.59	120.54	13.864	
12,400.00	6,303.00	13,246.44	7,328.00	73.00	75.14	-127.83	546.89	6,235.91	1,671.13	1,548.85	122.28	13.667	
12,500.00	6,303.00	13,346.44	7,328.00	74.07	76.19	-127.83	547.55	6,335.91	1,671.13	1,547.11	124.02	13.475	
12,600.00	6,303.00	13,446.44	7,328.00	75.14	77.24	-127.83	548.22	6,435.91	1,671.13	1,545.36	125.76	13.288	
12,700.00	6,303.00	13,546.44	7,328.00	76.21	78.30	-127.83	548.88	6,535.90	1,671.13	1,543.62	127.51	13.106	
12,800.00	6,303.00	13,646.44	7,328.00	77.28	79.36	-127.83	549.54	6,635.90	1,671.13	1,541.87	129.26	12.928	
12,900.00	6,303.00	13,746.44	7,328.00	78.36	80.42	-127.83	550.21	6,735.90	1,671.13	1,540.11	131.02	12.755	
13,000.00	6,303.00	13,846.44	7,328.00	79.43	81.48	-127.83	550.87	6,835.90	1,671.13	1,538.36	132.77	12.586	
13,100.00	6,303.00	13,946.44	7,328.00	80.51	82.54	-127.83	551.53	6,935.90	1,671.13	1,536.60	134.53	12.422	
13,200.00	6,303.00	14,046.44	7,328.00	81.59	83.60	-127.83	552.20	7,035.89	1,671.14	1,534.84	136.29	12.261	
13,300.00	6,303.00	14,146.44	7,328.00	82.67	84.67	-127.83	552.86	7,135.89	1,671.14	1,533.08	138.06	12.105	
13,400.00	6,303.00	14,246.44	7,328.00	83.75	85.73	-127.83	553.52	7,235.89	1,671.14	1,531.32	139.82	11.952	
13,500.00	6,303.00	14,346.44	7,328.00	84.83	86.80	-127.83	554.19	7,335.89	1,671.14	1,529.55	141.59	11.803	
13,600.00	6,303.00	14,446.44	7,328.00	85.91	87.87	-127.83	554.85	7,435.88	1,671.14	1,527.78	143.36	11.657	
13,700.00	6,303.00	14,546.44	7,328.00	87.00	88.94	-127.83	555.51	7,535.88	1,671.14	1,526.01	145.13	11.515	
13,800.00	6,303.00	14,646.44	7,328.00	88.08	90.02	-127.83	556.18	7,635.88	1,671.14	1,524.24	146.90	11.376	
13,900.00	6,303.00	14,746.44	7,328.00	89.17	91.09	-127.83	556.84	7,735.88	1,671.14	1,522.47	148.68	11.240	
14,000.00	6,303.00	14,846.44	7,328.00	90.26	92.16	-127.83	557.50	7,835.88	1,671.15	1,520.69	150.46	11.107	
14,100.00	6,303.00	14,946.44	7,328.00	91.34	93.24	-127.83	558.17	7,935.87	1,671.15	1,518.91	152.23	10.977	
14,200.00	6,303.00	15,046.44	7,328.00	92.43	94.32	-127.83	558.83	8,035.87	1,671.15	1,517.13	154.01	10.851	
14,300.00	6,303.00	15,146.44	7,328.00	93.52	95.39	-127.83	559.49	8,135.87	1,671.15	1,515.35	155.80	10.727	
14,400.00	6,303.00	15,246.44	7,328.00	94.61	96.47	-127.83	560.16	8,235.87	1,671.15	1,513.57	157.58	10.605	
14,500.00	6,303.00	15,346.44	7,328.00	95.70	97.55	-127.83	560.82	8,335.87	1,671.15	1,511.79	159.36	10.486	
14,600.00	6,303.00	15,446.44	7,328.00	96.79	98.63	-127.83	561.48	8,435.86	1,671.15	1,510.00	161.15	10.370	
14,700.00	6,303.00	15,546.44	7,328.00	97.88	99.71	-127.83	562.15	8,535.86	1,671.15	1,508.22	162.94	10.257	
14,800.00	6,303.00	15,646.44	7,328.00	98.98	100.80	-127.83	562.81	8,635.86	1,671.16	1,506.43	164.72	10.145	
14,900.00	6,303.00	15,746.44	7,328.00	100.07	101.88	-127.83	563.47	8,735.86	1,671.16	1,504.64	166.51	10.036	
15,000.00	6,303.00	15,846.44	7,328.00	101.16	102.96	-127.83	564.14	8,835.85	1,671.16	1,502.85	168.30	9.929	
15,100.00	6,303.00	15,946.44	7,328.00	102.26	104.05	-127.83	564.80	8,935.85	1,671.16	1,501.06	170.10	9.825	
15,200.00	6,303.00	16,046.44	7,328.00	103.35	105.14	-127.83	565.46	9,035.85	1,671.16	1,499.27	171.89	9.722	
15,300.00	6,303.00	16,146.44	7,328.00	104.45	106.22	-127.83	566.13	9,135.85	1,671.16	1,497.48	173.68	9.622	
15,400.00	6,303.00	16,246.44	7,328.00	105.55	107.31	-127.83	566.79	9,235.85	1,671.16	1,495.68	175.48	9.523	
15,500.00	6,303.00	16,346.44	7,328.00	106.64	108.40	-127.83	567.45	9,335.84	1,671.16	1,493.89	177.28	9.427	
15,600.00	6,303.00	16,446.44	7,328.00	107.74	109.49	-127.83	568.12	9,435.84	1,671.17	1,492.09	179.07	9.332	
15,700.00	6,303.00	16,546.44	7,328.00	108.84	110.58	-127.83	568.78	9,535.84	1,671.17	1,490.30	180.87	9.240	
15,800.00	6,303.00	16,646.44	7,328.00	109.94	111.67	-127.83	569.44	9,635.84	1,671.17	1,488.50	182.67	9.149	
15,900.00	6,303.00	16,746.44	7,328.00	111.03	112.76	-127.83	570.11	9,735.83	1,671.17	1,486.70	184.47	9.059	
16,000.00	6,303.00	16,846.44	7,328.00	112.13	113.85	-127.83	570.77	9,835.83	1,671.17	1,484.90	186.27	8.972	
16,100.00	6,303.00	16,946.44	7,328.00	113.23	114.94	-127.83	571.43	9,935.83	1,671.17	1,483.10	188.07	8.886	
16,200.00	6,303.00	17,046.44	7,328.00	114.33	116.03	-127.83	572.10	10,035.83	1,671.17	1,481.30	189.88	8.801	
16,300.00	6,303.00	17,146.44	7,328.00	115.43	117.12	-127.83	572.76	10,135.83	1,671.17	1,479.49	191.68	8.719	
16,400.00	6,303.00	17,246.44	7,328.00	116.53	118.22	-127.83	573.42	10,235.82	1,671.18	1,477.69	193.49	8.637	
16,500.00	6,303.00	17,346.44	7,328.00	117.64	119.31	-127.83	574.09	10,335.82	1,671.18	1,475.89	195.29	8.557	
16,600.00	6,303.00	17,446.44	7,328.00	118.74	120.41	-127.83	574.75	10,435.82	1,671.18	1,474.08	197.10	8.479	
16,700.00	6,303.00	17,546.44	7,328.00	119.84	121.50	-127.83	575.41	10,535.82	1,671.18	1,472.28	198.90	8.402	
16,800.00	6,303.00	17,646.44	7,328.00	120.94	122.60	-127.83	576.08	10,635.81	1,671.18	1,470.47	200.71	8.326	
16,890.04	6,303.00	17,736.48	7,328.00	121.94	123.58	-127.83	576.67	10,725.86	1,671.18	1,468.84	202.34	8.259	SF

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B06) Koala 9 Fed Com 124H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2) **Rule Assigned:** **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
400.00	400.00	400.00	400.00	1.20	1.20	-90.23	-0.24	-60.01	60.01	57.61	2.40	24.986	
500.00	500.00	500.00	500.00	1.56	1.56	-90.23	-0.24	-60.01	60.01	56.89	3.12	19.242	
600.00	600.00	600.00	600.00	1.92	1.92	-90.23	-0.24	-60.01	60.01	56.17	3.84	15.645	
700.00	700.00	700.00	700.00	2.28	2.28	-90.23	-0.24	-60.01	60.01	55.46	4.55	13.182	
800.00	800.00	800.00	800.00	2.63	2.63	-90.23	-0.24	-60.01	60.01	54.74	5.27	11.388	
900.00	899.99	899.99	899.99	2.98	2.99	88.28	-0.24	-60.01	59.96	53.99	5.97	10.045	
954.24	954.19	954.19	954.19	3.15	3.19	90.00	-0.24	-60.01	59.93	53.59	6.34	9.451	CC
1,000.00	999.91	999.91	999.91	3.31	3.35	92.02	-0.24	-60.01	59.97	53.31	6.65	9.011	
1,100.00	1,099.69	1,099.69	1,099.69	3.64	3.71	98.20	-0.24	-60.01	60.55	53.21	7.35	8.242	
1,200.00	1,199.27	1,199.27	1,199.27	3.98	4.07	106.47	-0.24	-60.01	62.52	54.48	8.04	7.773	
1,300.00	1,298.57	1,299.30	1,299.29	4.32	4.41	115.13	-1.53	-60.09	66.28	57.56	8.73	7.595	
1,400.00	1,397.54	1,399.61	1,399.52	4.67	4.74	122.71	-5.44	-60.33	71.43	62.03	9.40	7.599	
1,465.39	1,462.03	1,465.35	1,465.14	4.90	4.95	127.05	-9.44	-60.58	75.40	65.56	9.84	7.661	
1,500.00	1,496.12	1,500.21	1,499.90	5.02	5.07	129.09	-12.01	-60.73	77.57	67.49	10.08	7.698	
1,600.00	1,594.60	1,601.26	1,600.52	5.38	5.41	133.50	-21.26	-61.30	83.10	72.35	10.76	7.727	
1,700.00	1,693.09	1,702.68	1,701.23	5.74	5.75	136.13	-33.21	-62.04	87.16	75.72	11.44	7.620	
1,800.00	1,791.58	1,804.33	1,801.81	6.11	6.09	137.36	-47.86	-62.94	89.43	77.30	12.12	7.377	
1,900.00	1,890.06	1,905.09	1,901.16	6.47	6.44	137.55	-64.60	-63.97	90.09	77.27	12.82	7.028	
2,000.00	1,988.55	2,005.09	1,999.72	6.84	6.79	137.63	-81.47	-65.01	90.56	77.04	13.53	6.696	
2,100.00	2,087.04	2,105.08	2,098.28	7.21	7.14	137.71	-98.35	-66.04	91.04	76.80	14.24	6.395	
2,200.00	2,185.52	2,205.08	2,196.84	7.59	7.50	137.79	-115.22	-67.08	91.52	76.57	14.95	6.122	
2,300.00	2,284.01	2,305.08	2,295.40	7.96	7.86	137.87	-132.09	-68.12	91.99	76.33	15.66	5.873	
2,400.00	2,382.50	2,405.08	2,393.96	8.33	8.22	137.94	-148.96	-69.16	92.47	76.09	16.38	5.644	
2,500.00	2,480.98	2,505.08	2,492.52	8.71	8.58	138.02	-165.83	-70.19	92.95	75.84	17.10	5.434	
2,600.00	2,579.47	2,605.08	2,591.08	9.08	8.95	138.09	-182.70	-71.23	93.42	75.60	17.83	5.240	
2,700.00	2,677.96	2,705.08	2,689.64	9.46	9.32	138.17	-199.58	-72.27	93.90	75.35	18.55	5.062	
2,800.00	2,776.44	2,805.08	2,788.20	9.84	9.68	138.24	-216.45	-73.31	94.38	75.10	19.28	4.896	
2,900.00	2,874.93	2,905.07	2,886.76	10.22	10.05	138.31	-233.32	-74.34	94.85	74.85	20.00	4.742	
3,000.00	2,973.41	3,005.07	2,985.32	10.60	10.42	138.38	-250.19	-75.38	95.33	74.60	20.73	4.598	
3,100.00	3,071.90	3,105.07	3,083.88	10.97	10.79	138.45	-267.06	-76.42	95.81	74.35	21.46	4.464	
3,200.00	3,170.39	3,205.07	3,182.44	11.35	11.17	138.52	-283.94	-77.46	96.29	74.09	22.19	4.339	
3,300.00	3,268.87	3,305.07	3,281.00	11.73	11.54	138.59	-300.81	-78.49	96.76	73.84	22.92	4.221	
3,400.00	3,367.36	3,405.07	3,379.56	12.11	11.91	138.66	-317.68	-79.53	97.24	73.59	23.66	4.111	
3,500.00	3,465.85	3,505.07	3,478.12	12.49	12.29	138.73	-334.55	-80.57	97.72	73.33	24.39	4.007	
3,600.00	3,564.33	3,605.07	3,576.68	12.87	12.66	138.80	-351.42	-81.61	98.20	73.08	25.12	3.909	
3,700.00	3,662.82	3,705.07	3,675.24	13.26	13.04	138.87	-368.29	-82.64	98.68	72.82	25.86	3.817	
3,800.00	3,761.31	3,805.06	3,773.80	13.64	13.41	138.93	-385.17	-83.68	99.16	72.57	26.59	3.729	
3,900.00	3,859.79	3,905.06	3,872.36	14.02	13.79	139.00	-402.04	-84.72	99.64	72.31	27.32	3.646	
4,000.00	3,958.28	4,005.06	3,970.92	14.40	14.16	139.06	-418.91	-85.76	100.11	72.05	28.06	3.568	
4,100.00	4,056.77	4,105.06	4,069.48	14.78	14.54	139.13	-435.78	-86.79	100.59	71.80	28.79	3.493	
4,200.00	4,155.25	4,205.06	4,168.04	15.16	14.92	139.19	-452.65	-87.83	101.07	71.54	29.53	3.423	
4,300.00	4,253.74	4,305.06	4,266.60	15.55	15.30	139.25	-469.53	-88.87	101.55	71.28	30.27	3.355	
4,400.00	4,352.23	4,405.06	4,365.16	15.93	15.67	139.32	-486.40	-89.91	102.03	71.03	31.00	3.291	
4,500.00	4,450.71	4,505.06	4,463.72	16.31	16.05	139.38	-503.27	-90.94	102.51	70.77	31.74	3.230	
4,600.00	4,549.20	4,605.05	4,562.27	16.69	16.43	139.44	-520.14	-91.98	102.99	70.51	32.48	3.171	
4,700.00	4,647.69	4,705.05	4,660.83	17.07	16.81	139.50	-537.01	-93.02	103.47	70.26	33.21	3.115	
4,800.00	4,746.17	4,805.05	4,759.39	17.46	17.19	139.56	-553.88	-94.06	103.95	70.00	33.95	3.062	
4,900.00	4,844.66	4,905.05	4,857.95	17.84	17.57	139.62	-570.76	-95.09	104.43	69.74	34.69	3.011	
5,000.00	4,943.15	5,005.05	4,956.51	18.22	17.95	139.68	-587.63	-96.13	104.91	69.48	35.42	2.961	
5,015.05	4,957.97	5,020.10	4,971.35	18.28	18.00	139.69	-590.17	-96.29	104.98	69.45	35.54	2.954	
5,100.00	5,041.79	5,105.05	5,055.07	18.60	18.33	139.40	-604.50	-97.17	104.67	68.50	36.17	2.894	
5,200.00	5,140.82	5,204.99	5,153.58	18.98	18.71	138.16	-621.36	-98.21	102.49	65.56	36.93	2.775	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B06) Koala 9 Fed Com 124H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Rule Assigned: Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,300.00	5,240.19	5,304.83	5,251.98	19.35	19.09	135.80	-638.21	-99.24	98.47	60.74	37.72	2.610	
5,400.00	5,339.81	5,404.48	5,350.19	19.71	19.46	132.06	-655.02	-100.28	92.84	54.30	38.55	2.409	
5,500.00	5,439.63	5,503.88	5,448.16	20.07	19.84	126.49	-671.79	-101.31	86.07	46.66	39.41	2.184	
5,600.00	5,539.56	5,602.95	5,545.81	20.42	20.22	118.44	-688.51	-102.34	78.94	38.62	40.32	1.958	
5,680.44	5,620.00	5,682.37	5,624.09	20.69	20.52	-67.60	-701.91	-103.16	73.84	32.79	41.05	1.799	
5,700.00	5,639.56	5,701.65	5,643.09	20.75	20.59	-70.03	-705.16	-103.36	72.82	31.60	41.22	1.767	
5,785.38	5,724.94	5,785.80	5,726.03	21.01	20.91	-81.26	-719.36	-104.23	70.05	28.14	41.92	1.671	
5,792.65	5,732.21	5,792.97	5,733.09	21.04	20.94	176.75	-720.57	-104.31	70.00	28.03	41.97	1.668 ES	
5,800.00	5,739.56	5,800.22	5,740.24	21.06	20.97	175.76	-721.79	-104.38	70.06	28.03	42.03	1.667 SF	
5,850.00	5,789.42	5,849.44	5,788.75	21.23	21.16	169.39	-730.09	-104.89	73.47	31.09	42.38	1.734	
5,900.00	5,838.80	5,898.27	5,836.88	21.39	21.34	164.32	-738.33	-105.40	81.87	39.16	42.71	1.917	
5,950.00	5,887.30	5,946.35	5,884.27	21.56	21.53	160.84	-746.44	-105.90	94.76	51.73	43.03	2.202	
6,000.00	5,934.58	5,993.30	5,930.54	21.72	21.70	158.72	-754.36	-106.39	111.73	68.37	43.36	2.577	
6,050.00	5,980.25	6,038.93	5,975.52	21.87	21.88	157.57	-762.00	-106.86	132.47	88.78	43.69	3.032	
6,100.00	6,023.98	6,082.96	6,019.01	22.02	22.05	157.15	-768.94	-107.28	156.72	112.71	44.01	3.561	
6,150.00	6,065.44	6,124.88	6,060.47	22.15	22.20	157.12	-775.08	-107.66	184.35	140.03	44.32	4.160	
6,200.00	6,104.31	6,164.31	6,099.53	22.28	22.35	157.20	-780.43	-107.99	215.23	170.62	44.60	4.825	
6,250.00	6,140.29	6,200.92	6,135.85	22.40	22.49	157.21	-785.05	-108.27	249.21	204.34	44.86	5.555	
6,300.00	6,173.10	6,234.40	6,169.10	22.51	22.61	157.00	-788.96	-108.51	286.11	241.01	45.10	6.344	
6,350.00	6,202.51	6,264.48	6,199.00	22.61	22.72	156.42	-792.23	-108.71	325.70	280.40	45.30	7.190	
6,385.38	6,221.14	6,283.57	6,217.99	22.68	22.79	155.69	-794.19	-108.83	355.19	309.76	45.43	7.819	
6,400.00	6,228.29	6,290.91	6,225.29	22.71	22.82	156.48	-794.91	-108.88	367.72	322.24	45.48	8.086	
6,450.00	6,250.45	6,313.58	6,247.86	22.80	22.90	158.99	-797.06	-109.01	411.98	366.36	45.62	9.031	
6,500.00	6,268.88	6,332.35	6,266.56	22.89	22.97	161.28	-798.75	-109.11	458.15	412.42	45.73	10.018	
6,550.00	6,283.45	6,347.11	6,281.26	22.98	23.02	163.63	-800.00	-109.19	505.83	460.01	45.82	11.040	
6,600.00	6,294.04	6,357.76	6,291.88	23.07	23.06	166.71	-800.88	-109.25	554.65	508.77	45.88	12.090	
6,650.00	6,300.57	6,364.23	6,298.32	23.17	23.09	173.61	-801.39	-109.28	604.21	558.30	45.91	13.160	
6,704.35	6,303.00	6,366.45	6,300.54	23.29	23.09	-79.59	-801.57	-109.29	658.49	612.57	45.93	14.338	
6,800.00	6,303.00	6,365.93	6,300.02	23.52	23.09	-77.52	-801.52	-109.29	754.13	708.20	45.93	16.419	
6,900.00	6,303.00	6,365.39	6,299.49	23.82	23.09	-75.40	-801.48	-109.28	854.11	808.18	45.94	18.593	
7,000.00	6,303.00	6,364.85	6,298.94	24.18	23.09	-73.33	-801.44	-109.28	954.10	908.16	45.94	20.767	
10,000.00	6,303.00	11,103.11	7,328.00	48.08	50.44	180.00	-788.90	3,844.72	1,025.00	983.27	41.73	24.562	
10,100.00	6,303.00	11,203.11	7,328.00	49.08	51.40	180.00	-788.24	3,944.72	1,025.00	982.49	42.51	24.112	
10,200.00	6,303.00	11,303.11	7,328.00	50.08	52.38	180.00	-787.57	4,044.71	1,025.00	981.70	43.29	23.675	
10,300.00	6,303.00	11,403.11	7,328.00	51.08	53.36	180.00	-786.91	4,144.71	1,025.00	980.91	44.08	23.251	
10,400.00	6,303.00	11,503.11	7,328.00	52.10	54.34	180.00	-786.25	4,244.71	1,025.00	980.12	44.88	22.839	
10,500.00	6,303.00	11,603.11	7,328.00	53.11	55.33	180.00	-785.58	4,344.71	1,025.00	979.32	45.68	22.440	
10,600.00	6,303.00	11,703.11	7,328.00	54.13	56.33	180.00	-784.92	4,444.71	1,025.00	978.52	46.48	22.053	
10,700.00	6,303.00	11,803.11	7,328.00	55.15	57.33	180.00	-784.26	4,544.70	1,025.00	977.71	47.28	21.677	
10,800.00	6,303.00	11,903.11	7,328.00	56.18	58.33	180.00	-783.60	4,644.70	1,025.00	976.90	48.09	21.312	
10,900.00	6,303.00	12,003.11	7,328.00	57.21	59.34	180.00	-782.93	4,744.70	1,025.00	976.09	48.91	20.958	
11,000.00	6,303.00	12,103.11	7,328.00	58.25	60.35	180.00	-782.27	4,844.70	1,025.00	975.27	49.72	20.613	
11,100.00	6,303.00	12,203.11	7,328.00	59.28	61.37	180.00	-781.61	4,944.69	1,025.00	974.45	50.54	20.279	
11,200.00	6,303.00	12,303.11	7,328.00	60.32	62.39	180.00	-780.94	5,044.69	1,025.00	973.63	51.37	19.954	
11,300.00	6,303.00	12,403.11	7,328.00	61.37	63.41	180.00	-780.28	5,144.69	1,025.00	972.80	52.19	19.639	
11,400.00	6,303.00	12,503.11	7,328.00	62.41	64.44	180.00	-779.62	5,244.69	1,025.00	971.98	53.02	19.332	
11,500.00	6,303.00	12,603.11	7,328.00	63.46	65.47	180.00	-778.96	5,344.69	1,025.00	971.15	53.85	19.034	
11,600.00	6,303.00	12,703.11	7,328.00	64.51	66.50	180.00	-778.29	5,444.68	1,025.00	970.31	54.68	18.744	
11,700.00	6,303.00	12,803.11	7,328.00	65.57	67.54	180.00	-777.63	5,544.68	1,025.00	969.48	55.52	18.462	
11,800.00	6,303.00	12,903.11	7,328.00	66.62	68.58	180.00	-776.97	5,644.68	1,025.00	968.64	56.36	18.187	
11,900.00	6,303.00	13,003.11	7,328.00	67.68	69.62	180.00	-776.30	5,744.68	1,025.00	967.80	57.20	17.920	
12,000.00	6,303.00	13,103.11	7,328.00	68.74	70.66	180.00	-775.64	5,844.67	1,025.00	966.96	58.04	17.660	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B06) Koala 9 Fed Com 124H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,100.00	6,303.00	13,203.11	7,328.00	69.80	71.71	180.00	-774.98	5,944.67	1,025.00	966.11	58.88	17.407	
12,200.00	6,303.00	13,303.11	7,328.00	70.87	72.76	180.00	-774.32	6,044.67	1,025.00	965.27	59.73	17.160	
12,300.00	6,303.00	13,403.11	7,328.00	71.93	73.81	180.00	-773.65	6,144.67	1,025.00	964.42	60.58	16.920	
12,400.00	6,303.00	13,503.11	7,328.00	73.00	74.86	180.00	-772.99	6,244.67	1,025.00	963.57	61.43	16.686	
12,500.00	6,303.00	13,603.11	7,328.00	74.07	75.91	180.00	-772.33	6,344.66	1,025.00	962.72	62.28	16.458	
12,600.00	6,303.00	13,703.11	7,328.00	75.14	76.97	180.00	-771.67	6,444.66	1,025.00	961.87	63.13	16.236	
12,700.00	6,303.00	13,803.11	7,328.00	76.21	78.03	180.00	-771.00	6,544.66	1,025.00	961.01	63.99	16.019	
12,800.00	6,303.00	13,903.11	7,328.00	77.28	79.09	180.00	-770.34	6,644.66	1,025.00	960.16	64.84	15.808	
12,900.00	6,303.00	14,003.11	7,328.00	78.36	80.15	180.00	-769.68	6,744.65	1,025.00	959.30	65.70	15.601	
13,000.00	6,303.00	14,103.11	7,328.00	79.43	81.21	180.00	-769.01	6,844.65	1,025.00	958.44	66.56	15.400	
13,100.00	6,303.00	14,203.11	7,328.00	80.51	82.28	180.00	-768.35	6,944.65	1,025.00	957.58	67.42	15.204	
13,200.00	6,303.00	14,303.11	7,328.00	81.59	83.34	180.00	-767.69	7,044.65	1,025.00	956.72	68.28	15.012	
13,300.00	6,303.00	14,403.11	7,328.00	82.67	84.41	180.00	-767.03	7,144.65	1,025.00	955.86	69.14	14.825	
13,400.00	6,303.00	14,503.11	7,328.00	83.75	85.48	180.00	-766.36	7,244.64	1,025.00	954.99	70.01	14.642	
13,500.00	6,303.00	14,603.11	7,328.00	84.83	86.55	180.00	-765.70	7,344.64	1,025.00	954.13	70.87	14.463	
13,600.00	6,303.00	14,703.11	7,328.00	85.91	87.62	180.00	-765.04	7,444.64	1,025.00	953.26	71.74	14.289	
13,700.00	6,303.00	14,803.11	7,328.00	87.00	88.70	180.00	-764.37	7,544.64	1,025.00	952.40	72.60	14.118	
13,800.00	6,303.00	14,903.11	7,328.00	88.08	89.77	180.00	-763.71	7,644.64	1,025.00	951.53	73.47	13.951	
13,900.00	6,303.00	15,003.11	7,328.00	89.17	90.84	180.00	-763.05	7,744.63	1,025.00	950.66	74.34	13.788	
14,000.00	6,303.00	15,103.11	7,328.00	90.26	91.92	180.00	-762.39	7,844.63	1,025.00	949.79	75.21	13.629	
14,100.00	6,303.00	15,203.11	7,328.00	91.34	93.00	180.00	-761.72	7,944.63	1,025.00	948.92	76.08	13.473	
14,200.00	6,303.00	15,303.11	7,328.00	92.43	94.08	180.00	-761.06	8,044.63	1,025.00	948.05	76.95	13.320	
14,300.00	6,303.00	15,403.11	7,328.00	93.52	95.16	180.00	-760.40	8,144.62	1,025.00	947.18	77.82	13.171	
14,400.00	6,303.00	15,503.11	7,328.00	94.61	96.24	180.00	-759.73	8,244.62	1,025.00	946.30	78.70	13.025	
14,500.00	6,303.00	15,603.11	7,328.00	95.70	97.32	180.00	-759.07	8,344.62	1,025.00	945.43	79.57	12.882	
14,600.00	6,303.00	15,703.11	7,328.00	96.79	98.40	180.00	-758.41	8,444.62	1,025.00	944.55	80.45	12.742	
14,700.00	6,303.00	15,803.11	7,328.00	97.88	99.48	180.00	-757.75	8,544.62	1,025.00	943.68	81.32	12.604	
14,800.00	6,303.00	15,903.11	7,328.00	98.98	100.57	180.00	-757.08	8,644.61	1,025.00	942.80	82.20	12.470	
14,900.00	6,303.00	16,003.11	7,328.00	100.07	101.65	180.00	-756.42	8,744.61	1,025.00	941.92	83.07	12.338	
15,000.00	6,303.00	16,103.11	7,328.00	101.16	102.74	180.00	-755.76	8,844.61	1,025.00	941.05	83.95	12.209	
15,100.00	6,303.00	16,203.11	7,328.00	102.26	103.83	180.00	-755.09	8,944.61	1,025.00	940.17	84.83	12.083	
15,200.00	6,303.00	16,303.11	7,328.00	103.35	104.91	180.00	-754.43	9,044.60	1,025.00	939.29	85.71	11.959	
15,300.00	6,303.00	16,403.11	7,328.00	104.45	106.00	180.00	-753.77	9,144.60	1,025.00	938.41	86.59	11.838	
15,400.00	6,303.00	16,503.11	7,328.00	105.55	107.09	180.00	-753.11	9,244.60	1,025.00	937.53	87.47	11.718	
15,500.00	6,303.00	16,603.11	7,328.00	106.64	108.18	180.00	-752.44	9,344.60	1,025.00	936.65	88.35	11.602	
15,600.00	6,303.00	16,703.11	7,328.00	107.74	109.27	180.00	-751.78	9,444.60	1,025.00	935.77	89.23	11.487	
15,700.00	6,303.00	16,803.11	7,328.00	108.84	110.36	180.00	-751.12	9,544.59	1,025.00	934.89	90.11	11.375	
15,800.00	6,303.00	16,903.11	7,328.00	109.94	111.45	180.00	-750.46	9,644.59	1,025.00	934.00	90.99	11.264	
15,900.00	6,303.00	17,003.11	7,328.00	111.03	112.54	180.00	-749.79	9,744.59	1,025.00	933.12	91.88	11.156	
16,000.00	6,303.00	17,103.11	7,328.00	112.13	113.64	180.00	-749.13	9,844.59	1,025.00	932.24	92.76	11.050	
16,100.00	6,303.00	17,203.11	7,328.00	113.23	114.73	180.00	-748.47	9,944.58	1,025.00	931.35	93.64	10.946	
16,200.00	6,303.00	17,303.11	7,328.00	114.33	115.82	180.00	-747.80	10,044.58	1,025.00	930.47	94.53	10.843	
16,300.00	6,303.00	17,403.11	7,328.00	115.43	116.92	180.00	-747.14	10,144.58	1,025.00	929.59	95.41	10.743	
16,400.00	6,303.00	17,503.11	7,328.00	116.53	118.01	180.00	-746.48	10,244.58	1,025.00	928.70	96.30	10.644	
16,500.00	6,303.00	17,603.11	7,328.00	117.64	119.11	180.00	-745.82	10,344.58	1,025.00	927.81	97.18	10.547	
16,600.00	6,303.00	17,703.11	7,328.00	118.74	120.20	180.00	-745.15	10,444.57	1,025.00	926.93	98.07	10.452	
16,700.00	6,303.00	17,803.11	7,328.00	119.84	121.30	180.00	-744.49	10,544.57	1,025.00	926.04	98.96	10.358	
16,800.00	6,303.00	17,903.11	7,328.00	120.94	122.39	-180.00	-743.83	10,644.57	1,025.00	925.16	99.84	10.266	
16,890.04	6,303.00	17,993.15	7,328.00	121.94	123.38	-180.00	-743.23	10,734.61	1,025.00	924.36	100.64	10.184	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B07) Koala 9 Fed Com 113H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
300.00	300.00	300.00	300.00	0.84	0.84	-90.23	-0.12	-30.00	30.00	28.32	1.68	17.806	
400.00	400.00	400.00	400.00	1.20	1.20	-90.23	-0.12	-30.00	30.00	27.60	2.40	12.491	
500.00	500.00	500.00	500.00	1.56	1.56	-90.23	-0.12	-30.00	30.00	26.88	3.12	9.619	
600.00	600.00	600.00	600.00	1.92	1.92	-90.23	-0.12	-30.00	30.00	26.16	3.84	7.821	
700.00	700.00	700.00	700.00	2.28	2.28	-90.23	-0.12	-30.00	30.00	25.45	4.55	6.590	
800.00	800.00	800.00	800.00	2.63	2.63	-90.23	-0.12	-30.00	30.00	24.73	5.27	5.693	
900.00	899.99	899.99	899.99	2.98	2.99	89.53	-0.12	-30.00	29.96	23.99	5.97	5.020	
909.05	909.03	909.03	909.03	3.01	3.03	90.00	-0.12	-30.00	29.96	23.93	6.03	4.968	CC
1,000.00	999.91	999.91	999.91	3.31	3.35	96.99	-0.12	-30.00	30.18	23.53	6.65	4.536	ES
1,100.00	1,099.69	1,099.69	1,099.69	3.64	3.71	108.78	-0.12	-30.00	31.65	24.31	7.35	4.308	SF
1,200.00	1,199.27	1,199.27	1,199.27	3.98	4.07	122.74	-0.12	-30.00	35.68	27.63	8.04	4.435	
1,300.00	1,298.57	1,297.65	1,297.64	4.32	4.42	136.68	1.12	-30.12	44.23	35.49	8.74	5.061	
1,400.00	1,397.54	1,394.85	1,394.76	4.67	4.77	148.12	4.82	-30.49	59.06	49.63	9.43	6.265	
1,465.39	1,462.03	1,457.58	1,457.39	4.90	4.99	153.66	8.52	-30.85	72.12	62.25	9.87	7.307	
1,500.00	1,496.12	1,490.53	1,490.25	5.02	5.11	156.05	10.87	-31.08	79.91	69.81	10.10	7.911	
1,600.00	1,594.60	1,584.89	1,584.24	5.38	5.45	161.05	19.16	-31.89	104.56	93.81	10.76	9.721	
1,700.00	1,693.09	1,677.97	1,676.72	5.74	5.78	164.26	29.60	-32.92	132.05	120.65	11.40	11.586	
1,800.00	1,791.58	1,772.71	1,770.67	6.11	6.12	166.47	41.80	-34.12	161.40	149.34	12.06	13.383	
1,900.00	1,890.06	1,868.14	1,865.29	6.47	6.46	168.01	54.14	-35.33	190.97	178.23	12.74	14.992	
2,000.00	1,988.55	1,963.56	1,959.90	6.84	6.80	169.14	66.48	-36.54	220.62	207.21	13.42	16.446	
2,100.00	2,087.04	2,058.98	2,054.51	7.21	7.14	170.00	78.82	-37.76	250.34	236.24	14.09	17.761	
2,200.00	2,185.52	2,154.41	2,149.13	7.59	7.48	170.68	91.16	-38.97	280.09	265.32	14.77	18.957	
2,300.00	2,284.01	2,249.83	2,243.74	7.96	7.82	171.23	103.50	-40.18	309.88	294.42	15.46	20.049	
2,400.00	2,382.50	2,345.25	2,338.36	8.33	8.17	171.68	115.84	-41.39	339.68	323.55	16.14	21.048	
2,500.00	2,480.98	2,440.68	2,432.97	8.71	8.51	172.06	128.18	-42.61	369.51	352.68	16.82	21.966	
2,600.00	2,579.47	2,536.10	2,527.59	9.08	8.85	172.39	140.53	-43.82	399.34	381.83	17.51	22.811	
2,700.00	2,677.96	2,631.52	2,622.20	9.46	9.20	172.66	152.87	-45.03	429.19	410.99	18.19	23.593	
2,800.00	2,776.44	2,726.95	2,716.81	9.84	9.54	172.91	165.21	-46.24	459.04	440.16	18.88	24.318	
2,900.00	2,874.93	2,822.37	2,811.43	10.22	9.89	173.12	177.55	-47.46	488.90	469.34	19.56	24.992	
7,500.00	6,303.00	7,505.06	6,303.00	26.70	27.05	-90.00	514.28	1,336.00	1,319.68	1,266.23	53.45	24.692	
7,600.00	6,303.00	7,605.06	6,303.00	27.32	27.69	-90.00	514.94	1,436.00	1,319.68	1,264.96	54.72	24.118	
7,700.00	6,303.00	7,705.06	6,303.00	27.97	28.36	-90.00	515.61	1,536.00	1,319.68	1,263.63	56.05	23.544	
7,800.00	6,303.00	7,805.06	6,303.00	28.66	29.06	-90.00	516.27	1,636.00	1,319.69	1,262.24	57.44	22.974	
7,900.00	6,303.00	7,905.06	6,303.00	29.37	29.78	-90.00	516.94	1,736.00	1,319.69	1,260.80	58.89	22.411	
8,000.00	6,303.00	8,005.06	6,303.00	30.10	30.53	-90.00	517.60	1,835.99	1,319.69	1,259.31	60.38	21.858	
8,100.00	6,303.00	8,105.06	6,303.00	30.86	31.30	-90.00	518.27	1,935.99	1,319.69	1,257.78	61.91	21.315	
8,200.00	6,303.00	8,205.06	6,303.00	31.64	32.09	-90.00	518.93	2,035.99	1,319.70	1,256.20	63.49	20.785	
8,300.00	6,303.00	8,305.06	6,303.00	32.44	32.90	-90.00	519.59	2,135.99	1,319.70	1,254.59	65.11	20.268	
8,400.00	6,303.00	8,405.06	6,303.00	33.26	33.73	-90.00	520.26	2,235.98	1,319.70	1,252.94	66.77	19.766	
8,500.00	6,303.00	8,505.06	6,303.00	34.10	34.57	-90.00	520.92	2,335.98	1,319.71	1,251.25	68.45	19.278	
8,600.00	6,303.00	8,605.06	6,303.00	34.96	35.43	-90.00	521.59	2,435.98	1,319.71	1,249.53	70.17	18.806	
8,700.00	6,303.00	8,705.06	6,303.00	35.82	36.31	-90.00	522.25	2,535.98	1,319.71	1,247.79	71.92	18.349	
8,800.00	6,303.00	8,805.06	6,303.00	36.71	37.20	-90.00	522.92	2,635.98	1,319.71	1,246.02	73.70	17.907	
8,900.00	6,303.00	8,905.06	6,303.00	37.60	38.09	-90.00	523.58	2,735.97	1,319.72	1,244.22	75.50	17.480	
9,000.00	6,303.00	9,005.06	6,303.00	38.51	39.01	-90.00	524.25	2,835.97	1,319.72	1,242.40	77.32	17.068	
9,100.00	6,303.00	9,105.06	6,303.00	39.43	39.93	-90.00	524.91	2,935.97	1,319.72	1,240.56	79.17	16.670	
9,200.00	6,303.00	9,205.06	6,303.00	40.35	40.86	-90.00	525.57	3,035.97	1,319.72	1,238.69	81.03	16.287	
9,300.00	6,303.00	9,305.06	6,303.00	41.29	41.80	-90.00	526.24	3,135.96	1,319.73	1,236.81	82.92	15.917	
9,400.00	6,303.00	9,405.06	6,303.00	42.24	42.75	-90.00	526.90	3,235.96	1,319.73	1,234.91	84.82	15.560	
9,500.00	6,303.00	9,505.06	6,303.00	43.20	43.71	-90.00	527.57	3,335.96	1,319.73	1,233.00	86.73	15.216	
9,600.00	6,303.00	9,605.06	6,303.00	44.16	44.68	-90.00	528.23	3,435.96	1,319.73	1,231.07	88.67	14.884	
9,700.00	6,303.00	9,705.06	6,303.00	45.13	45.65	-90.00	528.90	3,535.96	1,319.74	1,229.12	90.61	14.564	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B07) Koala 9 Fed Com 113H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,800.00	6,303.00	9,805.06	6,303.00	46.11	46.63	-90.00	529.56	3,635.95	1,319.74	1,227.16	92.58	14.256	
9,900.00	6,303.00	9,905.06	6,303.00	47.09	47.61	-90.00	530.23	3,735.95	1,319.74	1,225.19	94.55	13.958	
10,000.00	6,303.00	10,005.06	6,303.00	48.08	48.61	-90.00	530.89	3,835.95	1,319.75	1,223.21	96.53	13.671	
10,100.00	6,303.00	10,105.06	6,303.00	49.08	49.60	-90.00	531.55	3,935.95	1,319.75	1,221.22	98.53	13.394	
10,200.00	6,303.00	10,205.06	6,303.00	50.08	50.61	-90.00	532.22	4,035.94	1,319.75	1,219.21	100.54	13.127	
10,300.00	6,303.00	10,305.06	6,303.00	51.08	51.61	-90.00	532.88	4,135.94	1,319.75	1,217.20	102.55	12.869	
10,400.00	6,303.00	10,405.06	6,303.00	52.10	52.63	-90.00	533.55	4,235.94	1,319.76	1,215.18	104.58	12.620	
10,500.00	6,303.00	10,505.06	6,303.00	53.11	53.64	-90.00	534.21	4,335.94	1,319.76	1,213.14	106.61	12.379	
10,600.00	6,303.00	10,605.06	6,303.00	54.13	54.66	-90.00	534.88	4,435.94	1,319.76	1,211.10	108.66	12.146	
10,700.00	6,303.00	10,705.06	6,303.00	55.15	55.69	-90.00	535.54	4,535.93	1,319.76	1,209.06	110.71	11.921	
10,800.00	6,303.00	10,805.06	6,303.00	56.18	56.71	-90.00	536.21	4,635.93	1,319.77	1,207.00	112.77	11.704	
10,900.00	6,303.00	10,905.06	6,303.00	57.21	57.75	-90.00	536.87	4,735.93	1,319.77	1,204.94	114.83	11.493	
11,000.00	6,303.00	11,005.06	6,303.00	58.25	58.78	-90.00	537.54	4,835.93	1,319.77	1,202.87	116.90	11.289	
11,100.00	6,303.00	11,105.06	6,303.00	59.28	59.82	-90.00	538.20	4,935.92	1,319.78	1,200.79	118.98	11.092	
11,200.00	6,303.00	11,205.06	6,303.00	60.32	60.86	-90.00	538.86	5,035.92	1,319.78	1,198.71	121.06	10.901	
11,300.00	6,303.00	11,305.06	6,303.00	61.37	61.90	-90.00	539.53	5,135.92	1,319.78	1,196.63	123.15	10.717	
11,400.00	6,303.00	11,405.06	6,303.00	62.41	62.95	-90.00	540.19	5,235.92	1,319.78	1,194.53	125.25	10.537	
11,500.00	6,303.00	11,505.06	6,303.00	63.46	64.00	-90.00	540.86	5,335.92	1,319.79	1,192.44	127.35	10.364	
11,600.00	6,303.00	11,605.06	6,303.00	64.51	65.05	-90.00	541.52	5,435.91	1,319.79	1,190.34	129.45	10.195	
11,700.00	6,303.00	11,705.06	6,303.00	65.57	66.11	-90.00	542.19	5,535.91	1,319.79	1,188.23	131.56	10.032	
11,800.00	6,303.00	11,805.06	6,303.00	66.62	67.16	-90.00	542.85	5,635.91	1,319.79	1,186.12	133.68	9.873	
11,900.00	6,303.00	11,905.06	6,303.00	67.68	68.22	-90.00	543.52	5,735.91	1,319.80	1,184.00	135.79	9.719	
12,000.00	6,303.00	12,005.06	6,303.00	68.74	69.28	-90.00	544.18	5,835.90	1,319.80	1,181.88	137.92	9.570	
12,100.00	6,303.00	12,105.06	6,303.00	69.80	70.34	-90.00	544.84	5,935.90	1,319.80	1,179.76	140.04	9.424	
12,200.00	6,303.00	12,205.06	6,303.00	70.87	71.41	-90.00	545.51	6,035.90	1,319.81	1,177.63	142.17	9.283	
12,300.00	6,303.00	12,305.06	6,303.00	71.93	72.47	-90.00	546.17	6,135.90	1,319.81	1,175.50	144.30	9.146	
12,400.00	6,303.00	12,405.06	6,303.00	73.00	73.54	-90.00	546.84	6,235.90	1,319.81	1,173.37	146.44	9.013	
12,500.00	6,303.00	12,505.06	6,303.00	74.07	74.61	-90.00	547.50	6,335.89	1,319.81	1,171.23	148.58	8.883	
12,600.00	6,303.00	12,605.06	6,303.00	75.14	75.68	-90.00	548.17	6,435.89	1,319.82	1,169.09	150.72	8.757	
12,700.00	6,303.00	12,705.06	6,303.00	76.21	76.75	-90.00	548.83	6,535.89	1,319.82	1,166.95	152.87	8.634	
12,800.00	6,303.00	12,805.06	6,303.00	77.28	77.82	-90.00	549.50	6,635.89	1,319.82	1,164.81	155.01	8.514	
12,900.00	6,303.00	12,905.06	6,303.00	78.36	78.90	-90.00	550.16	6,735.89	1,319.82	1,162.66	157.17	8.398	
13,000.00	6,303.00	13,005.06	6,303.00	79.43	79.98	-90.00	550.82	6,835.88	1,319.83	1,160.51	159.32	8.284	
13,100.00	6,303.00	13,105.06	6,303.00	80.51	81.05	-90.00	551.49	6,935.88	1,319.83	1,158.36	161.47	8.174	
13,200.00	6,303.00	13,205.06	6,303.00	81.59	82.13	-90.00	552.15	7,035.88	1,319.83	1,156.20	163.63	8.066	
13,300.00	6,303.00	13,305.06	6,303.00	82.67	83.21	-90.00	552.82	7,135.88	1,319.84	1,154.04	165.79	7.961	
13,400.00	6,303.00	13,405.06	6,303.00	83.75	84.29	-90.00	553.48	7,235.87	1,319.84	1,151.88	167.96	7.858	
13,500.00	6,303.00	13,505.06	6,303.00	84.83	85.37	-90.00	554.15	7,335.87	1,319.84	1,149.72	170.12	7.758	
13,600.00	6,303.00	13,605.06	6,303.00	85.91	86.46	-90.00	554.81	7,435.87	1,319.84	1,147.56	172.29	7.661	
13,700.00	6,303.00	13,705.06	6,303.00	87.00	87.54	-90.00	555.48	7,535.87	1,319.85	1,145.39	174.46	7.566	
13,800.00	6,303.00	13,805.06	6,303.00	88.08	88.62	-90.00	556.14	7,635.87	1,319.85	1,143.22	176.63	7.473	
13,900.00	6,303.00	13,905.06	6,303.00	89.17	89.71	-90.00	556.80	7,735.86	1,319.85	1,141.05	178.80	7.382	
14,000.00	6,303.00	14,005.06	6,303.00	90.26	90.80	-90.00	557.47	7,835.86	1,319.85	1,138.88	180.97	7.293	
14,100.00	6,303.00	14,105.06	6,303.00	91.34	91.88	-90.00	558.13	7,935.86	1,319.86	1,136.71	183.15	7.206	
14,200.00	6,303.00	14,205.06	6,303.00	92.43	92.97	-90.00	558.80	8,035.86	1,319.86	1,134.53	185.33	7.122	
14,300.00	6,303.00	14,305.06	6,303.00	93.52	94.06	-90.00	559.46	8,135.85	1,319.86	1,132.36	187.50	7.039	
14,400.00	6,303.00	14,405.06	6,303.00	94.61	95.15	-90.00	560.13	8,235.85	1,319.86	1,130.18	189.69	6.958	
14,500.00	6,303.00	14,505.06	6,303.00	95.70	96.24	-90.00	560.79	8,335.85	1,319.87	1,128.00	191.87	6.879	
14,600.00	6,303.00	14,605.06	6,303.00	96.79	97.33	-90.00	561.46	8,435.85	1,319.87	1,125.82	194.05	6.802	
14,700.00	6,303.00	14,705.06	6,303.00	97.88	98.43	-90.00	562.12	8,535.85	1,319.87	1,123.64	196.24	6.726	
14,800.00	6,303.00	14,805.06	6,303.00	98.98	99.52	-90.00	562.79	8,635.84	1,319.88	1,121.45	198.42	6.652	
14,900.00	6,303.00	14,905.06	6,303.00	100.07	100.61	-90.00	563.45	8,735.84	1,319.88	1,119.27	200.61	6.579	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: (Permit) Koala 9 Fed Com - (B07) Koala 9 Fed Com 113H - Permit - APD-Rev00

Offset Site Error: 0.00 usft

Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,000.00	6,303.00	15,005.06	6,303.00	101.16	101.71	-90.00	564.11	8,835.84	1,319.88	1,117.08	202.80	6.508	
15,100.00	6,303.00	15,105.06	6,303.00	102.26	102.80	-90.00	564.78	8,935.84	1,319.88	1,114.90	204.99	6.439	
15,200.00	6,303.00	15,205.06	6,303.00	103.35	103.89	-90.00	565.44	9,035.83	1,319.89	1,112.71	207.18	6.371	
15,300.00	6,303.00	15,305.06	6,303.00	104.45	104.99	-90.00	566.11	9,135.83	1,319.89	1,110.52	209.37	6.304	
15,400.00	6,303.00	15,405.06	6,303.00	105.55	106.09	-90.00	566.77	9,235.83	1,319.89	1,108.33	211.56	6.239	
15,500.00	6,303.00	15,505.06	6,303.00	106.64	107.18	-90.00	567.44	9,335.83	1,319.89	1,106.14	213.76	6.175	
15,600.00	6,303.00	15,605.06	6,303.00	107.74	108.28	-90.00	568.10	9,435.83	1,319.90	1,103.94	215.95	6.112	
15,700.00	6,303.00	15,705.06	6,303.00	108.84	109.38	-90.00	568.77	9,535.82	1,319.90	1,101.75	218.15	6.050	
15,800.00	6,303.00	15,805.06	6,303.00	109.94	110.48	-90.00	569.43	9,635.82	1,319.90	1,099.56	220.35	5.990	
15,900.00	6,303.00	15,905.06	6,303.00	111.03	111.58	-90.00	570.09	9,735.82	1,319.91	1,097.36	222.54	5.931	
16,000.00	6,303.00	16,005.06	6,303.00	112.13	112.67	-90.00	570.76	9,835.82	1,319.91	1,095.16	224.74	5.873	
16,100.00	6,303.00	16,105.06	6,303.00	113.23	113.77	-90.00	571.42	9,935.81	1,319.91	1,092.97	226.94	5.816	
16,200.00	6,303.00	16,205.06	6,303.00	114.33	114.87	-90.00	572.09	10,035.81	1,319.91	1,090.77	229.14	5.760	
16,300.00	6,303.00	16,305.06	6,303.00	115.43	115.97	-90.00	572.75	10,135.81	1,319.92	1,088.57	231.35	5.705	
16,400.00	6,303.00	16,405.06	6,303.00	116.53	117.08	-90.00	573.42	10,235.81	1,319.92	1,086.37	233.55	5.652	
16,500.00	6,303.00	16,505.06	6,303.00	117.64	118.18	-90.00	574.08	10,335.81	1,319.92	1,084.17	235.75	5.599	
16,600.00	6,303.00	16,605.06	6,303.00	118.74	119.28	-90.00	574.75	10,435.80	1,319.92	1,081.97	237.96	5.547	
16,700.00	6,303.00	16,705.06	6,303.00	119.84	120.38	-90.00	575.41	10,535.80	1,319.93	1,079.77	240.16	5.496	
16,800.00	6,303.00	16,805.06	6,303.00	120.94	121.48	-90.00	576.07	10,635.80	1,319.93	1,077.56	242.37	5.446	
16,890.04	6,303.00	16,895.10	6,303.00	121.94	122.48	-90.00	576.67	10,725.84	1,319.93	1,075.58	244.35	5.402	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W02_GOVERNMENT AO COM #001_1524032 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 121-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Rule Assigned: Warning
5,500.00	5,439.63	5,422.68	5,421.93	20.07	110.41	91.39	-492.86	-3,255.17	3,228.79	3,098.31	130.48	24.746	CC
5,600.00	5,539.56	5,521.50	5,520.56	20.42	113.88	91.44	-493.78	-3,255.17	3,228.80	3,094.50	134.30	24.041	
5,680.44	5,620.00	5,601.93	5,601.00	20.69	117.24	-85.80	-493.78	-3,255.17	3,228.83	3,090.90	137.92	23.410	
5,700.00	5,639.56	5,621.49	5,620.56	20.75	118.05	-85.80	-493.78	-3,255.17	3,228.83	3,090.03	138.80	23.263	
5,785.38	5,724.94	5,709.35	5,708.33	21.01	121.71	-85.77	-492.01	-3,255.17	3,228.96	3,086.23	142.73	22.623	
5,785.81	5,725.37	5,709.80	5,708.78	21.02	121.73	173.23	-492.02	-3,255.17	3,228.96	3,086.21	142.75	22.620	
5,800.00	5,739.56	5,724.59	5,723.57	21.06	122.35	173.22	-492.18	-3,255.17	3,229.13	3,085.72	143.41	22.517	ES
5,850.00	5,789.42	5,776.63	5,775.58	21.23	124.52	173.17	-493.06	-3,255.17	3,232.50	3,086.75	145.75	22.179	
5,900.00	5,838.80	5,821.52	5,819.80	21.39	126.56	173.08	-493.78	-3,255.17	3,240.17	3,092.22	147.95	21.900	
5,950.00	5,887.30	5,870.28	5,868.30	21.56	129.24	172.96	-493.78	-3,255.17	3,252.15	3,101.35	150.80	21.566	
6,000.00	5,934.58	5,917.85	5,915.58	21.72	132.07	172.78	-493.78	-3,255.17	3,268.28	3,114.49	153.79	21.251	
6,050.00	5,980.25	5,969.66	5,967.30	21.87	135.21	172.57	-492.96	-3,255.17	3,288.51	3,131.42	157.08	20.935	
6,100.00	6,023.98	6,007.69	6,004.98	22.02	137.57	172.24	-493.78	-3,255.17	3,312.48	3,152.90	159.58	20.757	
6,150.00	6,065.44	6,049.15	6,046.44	22.15	140.20	171.84	-493.78	-3,255.17	3,340.22	3,177.87	162.35	20.574	
6,200.00	6,104.31	6,088.85	6,086.01	22.28	142.73	171.39	-491.37	-3,255.17	3,371.63	3,206.64	164.99	20.435	
6,250.00	6,140.29	6,131.71	6,128.79	22.40	145.45	170.74	-492.02	-3,255.17	3,406.07	3,238.24	167.83	20.295	
6,300.00	6,173.10	6,171.32	6,168.28	22.51	147.97	169.89	-493.53	-3,255.17	3,443.43	3,272.99	170.44	20.203	SF
6,350.00	6,202.51	6,187.33	6,183.51	22.61	149.03	168.69	-493.78	-3,255.17	3,483.55	3,311.97	171.58	20.303	
6,385.38	6,221.14	6,205.95	6,202.14	22.68	150.28	167.64	-493.78	-3,255.17	3,513.45	3,340.56	172.89	20.322	
6,400.00	6,228.29	6,213.11	6,209.29	22.71	150.76	168.42	-493.78	-3,255.17	3,526.13	3,352.74	173.39	20.336	
6,450.00	6,250.45	6,251.04	6,247.07	22.80	153.32	171.44	-493.59	-3,255.17	3,570.84	3,394.84	176.00	20.289	
6,500.00	6,268.88	6,253.87	6,249.88	22.89	153.51	175.08	-493.78	-3,255.17	3,617.21	3,440.97	176.23	20.525	
6,550.00	6,283.45	6,268.77	6,264.45	22.98	154.56	-179.41	-493.78	-3,255.17	3,665.02	3,487.71	177.31	20.670	
6,600.00	6,294.04	6,279.35	6,275.04	23.07	155.31	-169.45	-493.78	-3,255.17	3,713.86	3,535.78	178.07	20.856	
6,650.00	6,300.57	6,285.88	6,281.57	23.17	155.77	-146.16	-493.78	-3,255.17	3,763.36	3,584.82	178.54	21.078	
6,704.35	6,303.00	6,288.32	6,284.00	23.29	155.94	-90.00	-493.78	-3,255.17	3,817.48	3,638.77	178.72	21.360	
6,800.00	6,303.00	6,288.32	6,284.00	23.52	155.94	-90.00	-493.78	-3,255.17	3,912.76	3,734.05	178.71	21.894	
6,900.00	6,303.00	6,288.32	6,284.00	23.82	155.94	-90.00	-493.78	-3,255.17	4,012.39	3,833.67	178.71	22.452	
7,000.00	6,303.00	6,288.32	6,284.00	24.18	155.94	-90.00	-493.78	-3,255.17	4,112.03	3,933.32	178.71	23.009	
7,100.00	6,303.00	6,288.32	6,284.00	24.59	155.94	-90.00	-493.78	-3,255.17	4,211.69	4,032.98	178.72	23.567	
7,200.00	6,303.00	6,288.32	6,284.00	25.06	155.94	-90.00	-493.78	-3,255.17	4,311.37	4,132.65	178.72	24.124	
7,300.00	6,303.00	6,288.32	6,284.00	25.56	155.94	-90.00	-493.78	-3,255.17	4,411.06	4,232.34	178.72	24.681	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W03_PRE-ONGARD WELL #001_1525793 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 192-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,100.00	3,071.90	3,045.47	3,044.90	10.97	66.04	82.84	-489.27	-1,892.19	1,881.73	1,804.72	77.01	24.436	
3,200.00	3,170.39	3,143.96	3,143.39	11.35	67.96	83.35	-489.27	-1,892.19	1,879.61	1,800.31	79.31	23.701	
3,300.00	3,268.87	3,242.03	3,241.46	11.73	69.87	83.88	-488.99	-1,892.19	1,877.64	1,796.04	81.60	23.011	
3,400.00	3,367.36	3,340.95	3,340.36	12.11	71.88	84.39	-489.27	-1,892.19	1,875.85	1,791.87	83.98	22.336	
3,500.00	3,465.85	3,439.44	3,438.85	12.49	73.97	84.91	-489.27	-1,892.19	1,874.21	1,787.75	86.46	21.677	
3,600.00	3,564.33	3,537.85	3,537.25	12.87	76.07	85.45	-488.64	-1,892.19	1,872.71	1,783.77	88.94	21.057	
3,700.00	3,662.82	3,636.23	3,635.63	13.26	78.16	85.96	-488.92	-1,892.19	1,871.40	1,779.99	91.41	20.472	
3,800.00	3,761.31	3,734.96	3,734.31	13.64	80.23	86.47	-489.27	-1,892.19	1,870.25	1,776.38	93.86	19.925	
3,900.00	3,859.79	3,833.45	3,832.79	14.02	82.24	86.99	-489.27	-1,892.19	1,869.24	1,772.99	96.25	19.420	
4,000.00	3,958.28	3,932.02	3,931.35	14.40	84.25	87.53	-488.80	-1,892.19	1,868.40	1,769.75	98.65	18.940	
4,100.00	4,056.77	4,030.46	4,029.77	14.78	86.18	88.04	-489.27	-1,892.19	1,867.72	1,766.76	100.96	18.500	
4,200.00	4,155.25	4,128.94	4,128.25	15.16	88.02	88.56	-489.27	-1,892.19	1,867.19	1,764.02	103.18	18.097	
4,300.00	4,253.74	4,227.54	4,226.84	15.55	89.86	89.10	-488.95	-1,892.19	1,866.84	1,761.44	105.40	17.712	
4,400.00	4,352.23	4,326.25	4,325.56	15.93	91.70	89.61	-489.25	-1,892.19	1,866.63	1,759.01	107.63	17.344	
4,474.42	4,425.52	4,399.23	4,398.52	16.21	93.06	90.00	-489.27	-1,892.19	1,866.59	1,757.31	109.28	17.081 CC	
4,500.00	4,450.71	4,424.43	4,423.71	16.31	93.54	90.13	-489.27	-1,892.19	1,866.59	1,756.75	109.85	16.993	
4,600.00	4,549.20	4,523.17	4,522.45	16.69	95.38	90.67	-488.86	-1,892.19	1,866.74	1,754.66	112.08	16.656	
4,700.00	4,647.69	4,621.42	4,620.69	17.07	97.23	91.18	-489.27	-1,892.19	1,867.00	1,752.70	114.30	16.334	
4,800.00	4,746.17	4,711.00	4,710.26	17.46	98.98	91.66	-489.27	-1,892.19	1,867.46	1,751.03	116.44	16.038 ES, SF	
4,900.00	4,844.66	4,711.00	4,710.26	17.84	98.98	91.66	-489.27	-1,892.19	1,871.13	1,754.50	116.63	16.043	
5,000.00	4,943.15	4,711.00	4,710.26	18.22	98.98	91.66	-489.27	-1,892.19	1,880.12	1,763.60	116.52	16.136	
5,015.05	4,957.97	4,711.00	4,710.26	18.28	98.98	91.66	-489.27	-1,892.19	1,881.93	1,765.45	116.48	16.157	
5,100.00	5,041.79	4,711.00	4,710.26	18.60	98.98	91.85	-489.27	-1,892.19	1,894.32	1,778.21	116.10	16.316	
5,200.00	5,140.82	4,711.00	4,710.26	18.98	98.98	92.14	-489.27	-1,892.19	1,913.57	1,798.17	115.40	16.582	
5,300.00	5,240.19	4,711.00	4,710.26	19.35	98.98	92.51	-489.27	-1,892.19	1,937.70	1,823.27	114.42	16.934	
5,400.00	5,339.81	4,711.00	4,710.26	19.71	98.98	92.96	-489.27	-1,892.19	1,966.51	1,853.30	113.21	17.371	
5,500.00	5,439.63	4,711.00	4,710.26	20.07	98.98	93.49	-489.27	-1,892.19	1,999.79	1,888.01	111.78	17.891	
5,600.00	5,539.56	4,711.00	4,710.26	20.42	98.98	94.10	-489.27	-1,892.19	2,037.29	1,927.12	110.17	18.493	
5,680.44	5,620.00	4,711.00	4,710.26	20.69	98.98	-82.61	-489.27	-1,892.19	2,070.35	1,961.60	108.75	19.038	
5,700.00	5,639.56	4,711.00	4,710.26	20.75	98.98	-82.61	-489.27	-1,892.19	2,078.76	1,970.37	108.39	19.178	
5,785.38	5,724.94	4,711.00	4,710.26	21.01	98.98	-82.61	-489.27	-1,892.19	2,117.22	2,010.44	106.78	19.828	
5,800.00	5,739.56	4,711.00	4,710.26	21.06	98.98	176.33	-489.27	-1,892.19	2,124.24	2,017.74	106.50	19.946	
5,850.00	5,789.42	4,711.00	4,710.26	21.23	98.98	176.12	-489.27	-1,892.19	2,151.22	2,045.65	105.58	20.376	
5,900.00	5,838.80	4,711.00	4,710.26	21.39	98.98	175.84	-489.27	-1,892.19	2,182.50	2,077.79	104.71	20.843	
5,950.00	5,887.30	4,711.00	4,710.26	21.56	98.98	175.47	-489.27	-1,892.19	2,217.67	2,113.76	103.91	21.342	
6,000.00	5,934.58	4,711.00	4,710.26	21.72	98.98	174.96	-489.27	-1,892.19	2,256.27	2,153.08	103.19	21.865	
6,050.00	5,980.25	4,711.00	4,710.26	21.87	98.98	174.25	-489.27	-1,892.19	2,297.85	2,195.29	102.56	22.405	
6,100.00	6,023.98	4,711.00	4,710.26	22.02	98.98	173.23	-489.27	-1,892.19	2,341.95	2,239.91	102.03	22.953	
6,150.00	6,065.44	4,711.00	4,710.26	22.15	98.98	171.65	-489.27	-1,892.19	2,388.09	2,286.48	101.61	23.503	
6,200.00	6,104.31	4,711.00	4,710.26	22.28	98.98	168.92	-489.27	-1,892.19	2,435.83	2,334.54	101.29	24.048	
6,250.00	6,140.29	4,711.00	4,710.26	22.40	98.98	163.29	-489.27	-1,892.19	2,484.71	2,383.63	101.08	24.582	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W04_FEDERAL V #001_1526451 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 456-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,400.00	5,339.81	5,378.12	5,376.83	19.71	125.78	142.00	2,163.17	-2,069.46	3,529.09	3,384.15	144.94	24.349	CC
5,500.00	5,439.63	5,429.11	5,427.63	20.07	127.20	142.06	2,162.55	-2,069.46	3,533.00	3,386.30	146.70	24.083	
5,600.00	5,539.56	5,529.05	5,527.56	20.42	129.72	142.12	2,162.55	-2,069.46	3,535.70	3,386.13	149.57	23.638	
5,680.44	5,620.00	5,609.48	5,608.00	20.69	131.75	-35.12	2,162.55	-2,069.46	3,536.37	3,384.50	151.87	23.285	
5,700.00	5,639.56	5,629.04	5,627.56	20.75	132.24	-35.12	2,162.55	-2,069.46	3,536.37	3,383.94	152.43	23.201	
5,785.38	5,724.94	5,726.14	5,724.62	21.01	134.69	-35.10	2,164.32	-2,069.46	3,537.83	3,382.68	155.15	22.803	
5,788.14	5,727.70	5,729.50	5,727.98	21.02	134.77	-136.10	2,164.30	-2,069.46	3,537.83	3,382.58	155.24	22.789	
5,800.00	5,739.56	5,743.94	5,742.41	21.06	135.13	-136.10	2,164.23	-2,069.46	3,537.91	3,382.26	155.65	22.730	ES
5,850.00	5,789.42	5,804.64	5,803.11	21.23	136.66	-136.00	2,163.81	-2,069.46	3,540.11	3,382.77	157.35	22.499	
5,900.00	5,838.80	5,864.78	5,863.23	21.39	138.18	-135.75	2,163.17	-2,069.46	3,545.30	3,386.27	159.03	22.294	
5,950.00	5,887.30	5,923.89	5,922.33	21.56	139.67	-135.34	2,162.32	-2,069.46	3,553.45	3,392.78	160.68	22.116	
6,000.00	5,934.58	5,924.23	5,922.58	21.72	139.63	-134.51	2,162.55	-2,069.46	3,565.11	3,404.33	160.78	22.173	
6,050.00	5,980.25	5,969.91	5,968.25	21.87	140.64	-133.62	2,162.55	-2,069.46	3,579.88	3,417.94	161.94	22.106	
6,100.00	6,023.98	6,013.64	6,011.98	22.02	141.61	-132.50	2,162.55	-2,069.46	3,597.56	3,434.51	163.05	22.064	
6,150.00	6,065.44	6,055.10	6,053.44	22.15	142.53	-131.13	2,162.55	-2,069.46	3,618.04	3,453.95	164.09	22.049	SF
6,200.00	6,104.31	6,093.96	6,092.31	22.28	143.39	-129.46	2,162.55	-2,069.46	3,641.22	3,476.15	165.07	22.058	
6,250.00	6,140.29	6,129.94	6,128.29	22.40	144.18	-127.47	2,162.55	-2,069.46	3,666.96	3,500.98	165.98	22.093	
6,300.00	6,173.10	6,163.70	6,162.03	22.51	144.93	-125.10	2,163.90	-2,069.46	3,696.15	3,529.33	166.82	22.156	
6,350.00	6,202.51	6,197.50	6,195.83	22.61	145.68	-122.37	2,163.86	-2,069.46	3,726.46	3,558.80	167.66	22.226	
6,385.38	6,221.14	6,218.92	6,217.25	22.68	146.15	-120.16	2,163.82	-2,069.46	3,749.13	3,580.94	168.19	22.291	
6,400.00	6,228.29	6,227.16	6,225.49	22.71	146.34	-118.72	2,163.79	-2,069.46	3,758.71	3,590.32	168.40	22.321	
6,450.00	6,250.45	6,252.68	6,251.00	22.80	146.90	-113.83	2,163.70	-2,069.46	3,791.87	3,622.84	169.03	22.434	
6,500.00	6,268.88	6,273.91	6,272.24	22.89	147.37	-108.99	2,163.60	-2,069.46	3,825.44	3,655.89	169.55	22.562	
6,550.00	6,283.45	6,290.71	6,289.03	22.98	147.74	-104.21	2,163.50	-2,069.46	3,859.23	3,689.25	169.98	22.704	
6,600.00	6,294.04	6,302.92	6,301.24	23.07	148.01	-99.54	2,163.43	-2,069.46	3,893.02	3,722.72	170.29	22.860	
6,650.00	6,300.57	6,310.45	6,308.77	23.17	148.18	-95.03	2,163.38	-2,069.46	3,926.59	3,756.09	170.50	23.030	
6,704.35	6,303.00	6,313.26	6,311.58	23.29	148.24	-90.39	2,163.36	-2,069.46	3,962.59	3,791.99	170.61	23.227	
6,800.00	6,303.00	6,313.25	6,311.57	23.52	148.24	-90.39	2,163.36	-2,069.46	4,025.97	3,855.29	170.69	23.587	
6,900.00	6,303.00	6,313.25	6,311.57	23.82	148.24	-90.39	2,163.36	-2,069.46	4,093.58	3,922.78	170.79	23.968	
7,000.00	6,303.00	6,313.24	6,311.56	24.18	148.24	-90.39	2,163.36	-2,069.46	4,162.48	3,991.57	170.92	24.354	
7,100.00	6,303.00	6,313.24	6,311.56	24.59	148.24	-90.39	2,163.36	-2,069.46	4,232.63	4,061.58	171.06	24.744	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W06_FEDERAL V #003_1526867 - Depth Only - Depth Only

Offset Site Error: 0.00 usft

Survey Program: 6300-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,200.00	3,170.39	3,161.39	3,161.39	11.35	199.69	116.02	2,152.61	-4,524.94	5,159.79	4,948.82	210.97	24.458	CC, ES
3,300.00	3,268.87	3,259.87	3,259.87	11.73	205.91	116.20	2,152.61	-4,524.94	5,167.51	4,949.95	217.56	23.752	
3,400.00	3,367.36	3,358.36	3,358.36	12.11	212.13	116.37	2,152.61	-4,524.94	5,175.28	4,951.12	224.16	23.088	
3,500.00	3,465.85	3,456.85	3,456.85	12.49	218.35	116.54	2,152.61	-4,524.94	5,183.09	4,952.34	230.75	22.462	
3,600.00	3,564.33	3,555.33	3,555.33	12.87	224.57	116.70	2,152.61	-4,524.94	5,190.96	4,953.61	237.35	21.871	
3,700.00	3,662.82	3,653.82	3,653.82	13.26	230.79	116.87	2,152.61	-4,524.94	5,198.86	4,954.92	243.94	21.312	
3,800.00	3,761.31	3,752.31	3,752.31	13.64	237.01	117.04	2,152.61	-4,524.94	5,206.81	4,956.28	250.54	20.782	
3,900.00	3,859.79	3,850.79	3,850.79	14.02	243.24	117.21	2,152.61	-4,524.94	5,214.81	4,957.68	257.13	20.280	
4,000.00	3,958.28	3,949.28	3,949.28	14.40	249.46	117.38	2,152.61	-4,524.94	5,222.86	4,959.13	263.73	19.804	
4,100.00	4,056.77	4,047.77	4,047.77	14.78	255.68	117.54	2,152.61	-4,524.94	5,230.94	4,960.62	270.33	19.350	
4,200.00	4,155.25	4,146.25	4,146.25	15.16	261.90	117.71	2,152.61	-4,524.94	5,239.08	4,962.15	276.92	18.919	
4,300.00	4,253.74	4,244.74	4,244.74	15.55	268.12	117.87	2,152.61	-4,524.94	5,247.25	4,963.74	283.52	18.508	
4,400.00	4,352.23	4,343.23	4,343.23	15.93	274.34	118.04	2,152.61	-4,524.94	5,255.48	4,965.36	290.11	18.115	
4,500.00	4,450.71	4,441.71	4,441.71	16.31	280.56	118.20	2,152.61	-4,524.94	5,263.74	4,967.03	296.71	17.740	
4,600.00	4,549.20	4,540.20	4,540.20	16.69	286.78	118.37	2,152.61	-4,524.94	5,272.05	4,968.75	303.31	17.382	
4,700.00	4,647.69	4,638.69	4,638.69	17.07	293.00	118.53	2,152.61	-4,524.94	5,280.41	4,970.51	309.90	17.039	
4,800.00	4,746.17	4,737.17	4,737.17	17.46	299.22	118.69	2,152.61	-4,524.94	5,288.81	4,972.31	316.50	16.710	
4,900.00	4,844.66	4,835.66	4,835.66	17.84	305.44	118.86	2,152.61	-4,524.94	5,297.25	4,974.15	323.09	16.395	
5,000.00	4,943.15	4,934.15	4,934.15	18.22	311.67	119.02	2,152.61	-4,524.94	5,305.73	4,976.04	329.69	16.093	
5,015.05	4,957.97	4,948.97	4,948.97	18.28	312.60	119.04	2,152.61	-4,524.94	5,307.01	4,976.33	330.68	16.049	
5,100.00	5,041.79	5,032.79	5,032.79	18.60	317.90	119.26	2,152.61	-4,524.94	5,313.80	4,977.51	336.29	15.801	
5,200.00	5,140.82	5,131.82	5,131.82	18.98	324.15	119.48	2,152.61	-4,524.94	5,320.64	4,977.72	342.92	15.516	
5,300.00	5,240.19	5,231.19	5,231.19	19.35	330.43	119.66	2,152.61	-4,524.94	5,326.21	4,976.65	349.56	15.237	
5,400.00	5,339.81	5,330.81	5,330.81	19.71	336.72	119.79	2,152.61	-4,524.94	5,330.51	4,974.30	356.21	14.964	
5,500.00	5,439.63	5,430.63	5,430.63	20.07	343.03	119.89	2,152.61	-4,524.94	5,333.51	4,970.64	362.87	14.698	
5,600.00	5,539.56	5,530.56	5,530.56	20.42	349.34	119.94	2,152.61	-4,524.94	5,335.22	4,965.68	369.54	14.438	
5,680.44	5,620.00	5,611.00	5,611.00	20.69	354.42	-57.30	2,152.61	-4,524.94	5,335.64	4,960.76	374.89	14.233	
5,700.00	5,639.56	5,630.56	5,630.56	20.75	355.65	-57.30	2,152.61	-4,524.94	5,335.64	4,959.46	376.18	14.184	
5,785.38	5,724.94	5,715.94	5,715.94	21.01	361.05	-57.30	2,152.61	-4,524.94	5,335.64	4,953.80	381.84	13.973	
5,800.00	5,739.56	5,730.56	5,730.56	21.06	361.97	-158.29	2,152.61	-4,524.94	5,335.81	4,953.00	382.81	13.938	
5,850.00	5,789.42	5,780.42	5,780.42	21.23	365.12	-158.19	2,152.61	-4,524.94	5,339.02	4,952.89	386.13	13.827	
5,900.00	5,838.80	5,829.80	5,829.80	21.39	368.24	-157.95	2,152.61	-4,524.94	5,346.26	4,956.85	389.41	13.729	
5,950.00	5,887.30	5,878.30	5,878.30	21.56	371.30	-157.56	2,152.61	-4,524.94	5,357.47	4,964.83	392.63	13.645	
6,000.00	5,934.58	5,925.58	5,925.58	21.72	374.29	-157.01	2,152.61	-4,524.94	5,372.57	4,976.80	395.77	13.575	
6,050.00	5,980.25	5,971.25	5,971.25	21.87	377.17	-156.29	2,152.61	-4,524.94	5,391.46	4,992.66	398.80	13.519	
6,100.00	6,023.98	6,014.98	6,014.98	22.02	379.94	-155.36	2,152.61	-4,524.94	5,413.99	5,012.29	401.70	13.478	
6,150.00	6,065.44	6,056.44	6,056.44	22.15	382.56	-154.18	2,152.61	-4,524.94	5,440.01	5,035.56	404.44	13.451	
6,200.00	6,104.31	6,095.31	6,095.31	22.28	385.01	-152.70	2,152.61	-4,524.94	5,469.31	5,062.30	407.01	13.438	SF
6,250.00	6,140.29	6,131.29	6,131.29	22.40	387.28	-150.85	2,152.61	-4,524.94	5,501.68	5,092.31	409.38	13.439	
6,300.00	6,173.10	6,164.10	6,164.10	22.51	389.36	-148.53	2,152.61	-4,524.94	5,536.89	5,125.36	411.53	13.454	
6,350.00	6,202.51	6,193.51	6,193.51	22.61	391.21	-145.59	2,152.61	-4,524.94	5,574.68	5,161.22	413.46	13.483	
6,385.38	6,221.14	6,212.14	6,212.14	22.68	392.39	-143.04	2,152.61	-4,524.94	5,602.82	5,188.14	414.68	13.511	
6,400.00	6,228.29	6,219.29	6,219.29	22.71	392.84	-141.03	2,152.61	-4,524.94	5,614.72	5,199.57	415.15	13.525	
6,450.00	6,250.45	6,241.45	6,241.45	22.80	394.24	-133.70	2,152.61	-4,524.94	5,656.23	5,239.64	416.59	13.577	
6,500.00	6,268.88	6,259.88	6,259.88	22.89	395.41	-125.67	2,152.61	-4,524.94	5,698.71	5,280.92	417.79	13.640	
6,550.00	6,283.45	6,274.45	6,274.45	22.98	396.33	-117.02	2,152.61	-4,524.94	5,741.86	5,323.13	418.73	13.713	
6,600.00	6,294.04	6,285.04	6,285.04	23.07	396.99	-108.04	2,152.61	-4,524.94	5,785.38	5,365.97	419.41	13.794	
6,650.00	6,300.57	6,291.57	6,291.57	23.17	397.41	-99.12	2,152.61	-4,524.94	5,828.94	5,409.11	419.83	13.884	
6,704.35	6,303.00	6,300.00	6,292.04	23.29	397.94	-89.96	2,152.61	-4,524.94	5,875.98	5,455.62	420.37	13.978	
6,800.00	6,303.00	6,300.00	6,292.04	23.52	397.94	-89.96	2,152.61	-4,524.94	5,958.46	5,538.08	420.38	14.174	
6,900.00	6,303.00	6,300.00	6,292.04	23.82	397.94	-89.96	2,152.61	-4,524.94	6,045.10	5,624.70	420.40	14.379	
7,000.00	6,303.00	6,300.00	6,292.04	24.18	397.94	-89.96	2,152.61	-4,524.94	6,132.15	5,711.71	420.44	14.585	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W06_FEDERAL V #003_1526867 - Depth Only - Depth Only

Offset Site Error: 0.00 usft

Survey Program: 6300-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,100.00	6,303.00	6,300.00	6,292.04	24.59	397.94	-89.96	2,152.61	-4,524.94	6,219.59	5,799.10	420.49	14.791	
7,200.00	6,303.00	6,300.00	6,292.04	25.06	397.94	-89.96	2,152.61	-4,524.94	6,307.40	5,886.85	420.54	14.998	
7,300.00	6,303.00	6,300.00	6,292.04	25.56	397.94	-89.96	2,152.61	-4,524.94	6,395.56	5,974.96	420.60	15.206	
7,400.00	6,303.00	6,300.00	6,292.04	26.11	397.94	-89.96	2,152.61	-4,524.94	6,484.08	6,063.40	420.68	15.414	
7,500.00	6,303.00	6,300.00	6,292.04	26.70	397.94	-89.96	2,152.61	-4,524.94	6,572.92	6,152.17	420.75	15.622	
7,600.00	6,303.00	6,300.00	6,292.04	27.32	397.94	-89.96	2,152.61	-4,524.94	6,662.08	6,241.24	420.84	15.831	
7,700.00	6,303.00	6,300.00	6,292.04	27.97	397.94	-89.96	2,152.61	-4,524.94	6,751.54	6,330.61	420.92	16.040	
7,800.00	6,303.00	6,300.00	6,292.04	28.66	397.94	-89.96	2,152.61	-4,524.94	6,841.29	6,420.27	421.02	16.249	
7,900.00	6,303.00	6,300.00	6,292.04	29.37	397.94	-89.96	2,152.61	-4,524.94	6,931.33	6,510.21	421.12	16.459	
8,000.00	6,303.00	6,300.00	6,292.04	30.10	397.94	-89.96	2,152.61	-4,524.94	7,021.63	6,600.41	421.22	16.670	
8,100.00	6,303.00	6,300.00	6,292.04	30.86	397.94	-89.96	2,152.61	-4,524.94	7,112.19	6,690.87	421.33	16.881	
8,200.00	6,303.00	6,300.00	6,292.04	31.64	397.94	-89.96	2,152.61	-4,524.94	7,203.00	6,781.57	421.43	17.092	
8,300.00	6,303.00	6,300.00	6,292.04	32.44	397.94	-89.96	2,152.61	-4,524.94	7,294.06	6,872.51	421.55	17.303	
8,400.00	6,303.00	6,300.00	6,292.04	33.26	397.94	-89.96	2,152.61	-4,524.94	7,385.34	6,963.68	421.66	17.515	
8,500.00	6,303.00	6,300.00	6,292.04	34.10	397.94	-89.96	2,152.61	-4,524.94	7,476.85	7,055.07	421.78	17.727	
8,600.00	6,303.00	6,300.00	6,292.04	34.96	397.94	-89.96	2,152.61	-4,524.94	7,568.57	7,146.67	421.90	17.939	
8,700.00	6,303.00	6,300.00	6,292.04	35.82	397.94	-89.96	2,152.61	-4,524.94	7,660.50	7,238.48	422.02	18.152	
8,800.00	6,303.00	6,300.00	6,292.04	36.71	397.94	-89.96	2,152.61	-4,524.94	7,752.63	7,330.49	422.14	18.365	
8,900.00	6,303.00	6,300.00	6,292.04	37.60	397.94	-89.96	2,152.61	-4,524.94	7,844.95	7,422.69	422.27	18.578	
9,000.00	6,303.00	6,300.00	6,292.04	38.51	397.94	-89.96	2,152.61	-4,524.94	7,937.46	7,515.07	422.39	18.792	
9,100.00	6,303.00	6,300.00	6,292.04	39.43	397.94	-89.96	2,152.61	-4,524.94	8,030.15	7,607.63	422.52	19.006	
9,200.00	6,303.00	6,300.00	6,292.04	40.35	397.94	-89.96	2,152.61	-4,524.94	8,123.01	7,700.37	422.64	19.220	
9,300.00	6,303.00	6,300.00	6,292.04	41.29	397.94	-89.96	2,152.61	-4,524.94	8,216.04	7,793.27	422.77	19.434	
9,400.00	6,303.00	6,300.00	6,292.04	42.24	397.94	-89.96	2,152.61	-4,524.94	8,309.23	7,886.33	422.90	19.648	
9,500.00	6,303.00	6,300.00	6,292.04	43.20	397.94	-89.96	2,152.61	-4,524.94	8,402.58	7,979.55	423.03	19.863	
9,600.00	6,303.00	6,300.00	6,292.04	44.16	397.94	-89.96	2,152.61	-4,524.94	8,496.08	8,072.92	423.16	20.078	
9,700.00	6,303.00	6,300.00	6,292.04	45.13	397.94	-89.96	2,152.61	-4,524.94	8,589.72	8,166.44	423.29	20.293	
9,800.00	6,303.00	6,300.00	6,292.04	46.11	397.94	-89.96	2,152.61	-4,524.94	8,683.51	8,260.09	423.41	20.508	
9,900.00	6,303.00	6,300.00	6,292.04	47.09	397.94	-89.96	2,152.61	-4,524.94	8,777.43	8,353.89	423.54	20.724	
10,000.00	6,303.00	6,300.00	6,292.04	48.08	397.94	-89.96	2,152.61	-4,524.94	8,871.49	8,447.82	423.67	20.939	
10,100.00	6,303.00	6,300.00	6,292.04	49.08	397.94	-89.96	2,152.61	-4,524.94	8,965.68	8,541.87	423.80	21.155	
10,200.00	6,303.00	6,300.00	6,292.04	50.08	397.94	-89.96	2,152.61	-4,524.94	9,059.99	8,636.05	423.93	21.371	
10,300.00	6,303.00	6,300.00	6,292.04	51.08	397.94	-89.96	2,152.61	-4,524.94	9,154.42	8,730.35	424.06	21.587	
10,400.00	6,303.00	6,300.00	6,292.04	52.10	397.94	-89.96	2,152.61	-4,524.94	9,248.96	8,824.77	424.19	21.804	
10,500.00	6,303.00	6,300.00	6,292.04	53.11	397.94	-89.96	2,152.61	-4,524.94	9,343.63	8,919.31	424.32	22.020	
10,600.00	6,303.00	6,300.00	6,292.04	54.13	397.94	-89.96	2,152.61	-4,524.94	9,438.40	9,013.95	424.45	22.237	
10,700.00	6,303.00	6,300.00	6,292.04	55.15	397.94	-89.96	2,152.61	-4,524.94	9,533.28	9,108.70	424.58	22.454	
10,800.00	6,303.00	6,300.00	6,292.04	56.18	397.94	-89.96	2,152.61	-4,524.94	9,628.26	9,203.55	424.70	22.670	
10,900.00	6,303.00	6,300.00	6,292.04	57.21	397.94	-89.96	2,152.61	-4,524.94	9,723.34	9,298.51	424.83	22.887	
11,000.00	6,303.00	6,300.00	6,292.04	58.25	397.94	-89.96	2,152.61	-4,524.94	9,818.52	9,393.56	424.96	23.105	
11,100.00	6,303.00	6,300.00	6,292.04	59.28	397.94	-89.96	2,152.61	-4,524.94	9,913.80	9,488.71	425.09	23.322	
11,200.00	6,303.00	6,300.00	6,292.04	60.32	397.94	-89.96	2,152.61	-4,524.94	10,009.16	9,583.95	425.21	23.539	
11,300.00	6,303.00	6,300.00	6,292.04	61.37	397.94	-89.96	2,152.61	-4,524.94	10,104.62	9,679.28	425.34	23.757	
11,400.00	6,303.00	6,300.00	6,292.04	62.41	397.94	-89.96	2,152.61	-4,524.94	10,200.17	9,774.70	425.46	23.974	
11,500.00	6,303.00	6,300.00	6,292.04	63.46	397.94	-89.96	2,152.61	-4,524.94	10,295.79	9,870.20	425.59	24.192	
11,600.00	6,303.00	6,300.00	6,292.04	64.51	397.94	-89.96	2,152.61	-4,524.94	10,391.50	9,965.79	425.72	24.410	
11,700.00	6,303.00	6,300.00	6,292.04	65.57	397.94	-89.96	2,152.61	-4,524.94	10,487.30	10,061.46	425.84	24.627	
11,800.00	6,303.00	6,300.00	6,292.04	66.62	397.94	-89.96	2,152.61	-4,524.94	10,583.17	10,157.20	425.96	24.845	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W07_PRE-ONGARD WELL #001_1527282 - Depth Only - Depth Only

Offset Site Error: 0.00 usft

Survey Program: 7450-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,200.00	1,199.27	1,166.27	1,166.27	3.98	73.67	72.69	-489.14	-1,791.13	1,850.36	1,772.71	77.64	23.831	
1,300.00	1,298.57	1,265.57	1,265.57	4.32	79.94	73.08	-489.14	-1,791.13	1,846.88	1,762.61	84.26	21.919	
1,400.00	1,397.54	1,364.54	1,364.54	4.67	86.19	73.56	-489.14	-1,791.13	1,842.72	1,751.86	90.86	20.281	
1,465.39	1,462.03	1,429.03	1,429.03	4.90	90.26	73.93	-489.14	-1,791.13	1,839.66	1,744.50	95.16	19.332	
1,500.00	1,496.12	1,463.12	1,463.12	5.02	92.42	74.10	-489.14	-1,791.13	1,837.99	1,740.55	97.44	18.863	
1,600.00	1,594.60	1,561.60	1,561.60	5.38	98.64	74.62	-489.14	-1,791.13	1,833.25	1,729.23	104.02	17.624	
1,700.00	1,693.09	1,660.09	1,660.09	5.74	104.86	75.13	-489.14	-1,791.13	1,828.66	1,718.06	110.60	16.534	
1,800.00	1,791.58	1,758.58	1,758.58	6.11	111.08	75.65	-489.14	-1,791.13	1,824.23	1,707.04	117.18	15.567	
1,900.00	1,890.06	1,857.06	1,857.06	6.47	117.30	76.17	-489.14	-1,791.13	1,819.95	1,696.18	123.77	14.704	
2,000.00	1,988.55	1,955.55	1,955.55	6.84	123.52	76.70	-489.14	-1,791.13	1,815.82	1,685.46	130.36	13.929	
2,100.00	2,087.04	2,054.04	2,054.04	7.21	129.74	77.22	-489.14	-1,791.13	1,811.86	1,674.91	136.95	13.230	
2,200.00	2,185.52	2,152.52	2,152.52	7.59	135.96	77.75	-489.14	-1,791.13	1,808.05	1,664.50	143.54	12.596	
2,300.00	2,284.01	2,251.01	2,251.01	7.96	142.19	78.28	-489.14	-1,791.13	1,804.39	1,654.26	150.14	12.018	
2,400.00	2,382.50	2,349.50	2,349.50	8.33	148.41	78.81	-489.14	-1,791.13	1,800.90	1,644.17	156.73	11.490	
2,500.00	2,480.98	2,447.98	2,447.98	8.71	154.63	79.35	-489.14	-1,791.13	1,797.57	1,634.24	163.33	11.006	
2,600.00	2,579.47	2,546.47	2,546.47	9.08	160.85	79.88	-489.14	-1,791.13	1,794.40	1,624.47	169.92	10.560	
2,700.00	2,677.96	2,644.96	2,644.96	9.46	167.07	80.42	-489.14	-1,791.13	1,791.39	1,614.87	176.52	10.148	
2,800.00	2,776.44	2,743.44	2,743.44	9.84	173.29	80.96	-489.14	-1,791.13	1,788.54	1,605.42	183.12	9.767	
2,900.00	2,874.93	2,841.93	2,841.93	10.22	179.51	81.50	-489.14	-1,791.13	1,785.86	1,596.14	189.72	9.413	
3,000.00	2,973.41	2,940.41	2,940.41	10.60	185.73	82.04	-489.14	-1,791.13	1,783.34	1,587.02	196.32	9.084	
3,100.00	3,071.90	3,038.90	3,038.90	10.97	191.95	82.59	-489.14	-1,791.13	1,780.99	1,578.07	202.92	8.777	
3,200.00	3,170.39	3,137.39	3,137.39	11.35	198.17	83.13	-489.14	-1,791.13	1,778.80	1,569.28	209.52	8.490	
3,300.00	3,268.87	3,235.87	3,235.87	11.73	204.39	83.68	-489.14	-1,791.13	1,776.78	1,560.66	216.12	8.221	
3,400.00	3,367.36	3,334.36	3,334.36	12.11	210.61	84.23	-489.14	-1,791.13	1,774.93	1,552.21	222.72	7.969	
3,500.00	3,465.85	3,432.85	3,432.85	12.49	216.84	84.78	-489.14	-1,791.13	1,773.24	1,543.92	229.33	7.732	
3,600.00	3,564.33	3,531.33	3,531.33	12.87	223.06	85.33	-489.14	-1,791.13	1,771.73	1,535.80	235.93	7.510	
3,700.00	3,662.82	3,629.82	3,629.82	13.26	229.28	85.88	-489.14	-1,791.13	1,770.38	1,527.85	242.53	7.300	
3,800.00	3,761.31	3,728.31	3,728.31	13.64	235.50	86.43	-489.14	-1,791.13	1,769.20	1,520.06	249.13	7.101	
3,900.00	3,859.79	3,826.79	3,826.79	14.02	241.72	86.98	-489.14	-1,791.13	1,768.18	1,512.45	255.74	6.914	
4,000.00	3,958.28	3,925.28	3,925.28	14.40	247.94	87.53	-489.14	-1,791.13	1,767.34	1,505.00	262.34	6.737	
4,100.00	4,056.77	4,023.77	4,023.77	14.78	254.16	88.09	-489.14	-1,791.13	1,766.67	1,497.73	268.94	6.569	
4,200.00	4,155.25	4,122.25	4,122.25	15.16	260.38	88.64	-489.14	-1,791.13	1,766.17	1,490.62	275.54	6.410	
4,300.00	4,253.74	4,220.74	4,220.74	15.55	266.60	89.19	-489.14	-1,791.13	1,765.83	1,483.69	282.15	6.259	
4,400.00	4,352.23	4,319.23	4,319.23	15.93	272.82	89.75	-489.14	-1,791.13	1,765.67	1,476.92	288.75	6.115	
4,445.75	4,397.29	4,364.29	4,364.29	16.10	275.67	90.00	-489.14	-1,791.13	1,765.65	1,473.88	291.77	6.051	CC
4,500.00	4,450.71	4,417.71	4,417.71	16.31	279.04	90.30	-489.14	-1,791.13	1,765.68	1,470.32	295.35	5.978	
4,600.00	4,549.20	4,516.20	4,516.20	16.69	285.27	90.85	-489.14	-1,791.13	1,765.85	1,463.90	301.96	5.848	
4,700.00	4,647.69	4,614.69	4,614.69	17.07	291.49	91.41	-489.14	-1,791.13	1,766.20	1,457.64	308.56	5.724	
4,800.00	4,746.17	4,713.17	4,713.17	17.46	297.71	91.96	-489.14	-1,791.13	1,766.72	1,451.56	315.16	5.606	
4,900.00	4,844.66	4,811.66	4,811.66	17.84	303.93	92.51	-489.14	-1,791.13	1,767.41	1,445.64	321.77	5.493	
5,000.00	4,943.15	4,910.15	4,910.15	18.22	310.15	93.07	-489.14	-1,791.13	1,768.26	1,439.89	328.37	5.385	
5,015.05	4,957.97	4,924.97	4,924.97	18.28	311.09	93.15	-489.14	-1,791.13	1,768.41	1,439.04	329.36	5.369	
5,100.00	5,041.79	5,008.79	5,008.79	18.60	316.38	93.60	-489.14	-1,791.13	1,769.23	1,434.25	334.98	5.282	
5,200.00	5,140.82	5,107.82	5,107.82	18.98	322.64	94.06	-489.14	-1,791.13	1,770.16	1,428.55	341.61	5.182	
5,300.00	5,240.19	5,207.19	5,207.19	19.35	328.91	94.43	-489.14	-1,791.13	1,771.00	1,422.75	348.26	5.085	
5,400.00	5,339.81	5,306.81	5,306.81	19.71	335.20	94.72	-489.14	-1,791.13	1,771.69	1,416.78	354.91	4.992	
5,500.00	5,439.63	5,406.63	5,406.63	20.07	341.51	94.92	-489.14	-1,791.13	1,772.20	1,410.63	361.57	4.901	
5,600.00	5,539.56	5,506.56	5,506.56	20.42	347.82	95.04	-489.14	-1,791.13	1,772.50	1,404.26	368.24	4.813	
5,680.44	5,620.00	5,587.00	5,587.00	20.69	352.90	-82.19	-489.14	-1,791.13	1,772.57	1,398.99	373.58	4.745	
5,700.00	5,639.56	5,606.56	5,606.56	20.75	354.14	-82.19	-489.14	-1,791.13	1,772.57	1,397.69	374.88	4.728	
5,785.38	5,724.94	5,691.94	5,691.94	21.01	359.53	-82.19	-489.14	-1,791.13	1,772.57	1,392.03	380.54	4.658	
5,800.00	5,739.56	5,706.56	5,706.56	21.06	360.45	176.81	-489.14	-1,791.13	1,772.76	1,391.25	381.51	4.647	ES

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W07_PRE-ONGARD WELL #001_1527282 - Depth Only - Depth Only

Offset Site Error: 0.00 usft

Survey Program: 7450-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,850.00	5,789.42	5,756.42	5,756.42	21.23	363.60	176.80	-489.14	-1,791.13	1,776.21	1,391.38	384.83	4.616	
5,900.00	5,838.80	5,805.80	5,805.80	21.39	366.72	176.77	-489.14	-1,791.13	1,783.98	1,395.87	388.11	4.597	
5,950.00	5,887.30	5,854.30	5,854.30	21.56	369.79	176.72	-489.14	-1,791.13	1,796.02	1,404.69	391.34	4.589 SF	
6,000.00	5,934.58	5,901.58	5,901.58	21.72	372.77	176.65	-489.14	-1,791.13	1,812.24	1,417.76	394.48	4.594	
6,050.00	5,980.25	5,947.25	5,947.25	21.87	375.66	176.55	-489.14	-1,791.13	1,832.51	1,434.99	397.52	4.610	
6,100.00	6,023.98	5,990.98	5,990.98	22.02	378.42	176.43	-489.14	-1,791.13	1,856.68	1,456.26	400.42	4.637	
6,150.00	6,065.44	6,032.44	6,032.44	22.15	381.04	176.27	-489.14	-1,791.13	1,884.56	1,481.39	403.17	4.674	
6,200.00	6,104.31	6,071.31	6,071.31	22.28	383.49	176.06	-489.14	-1,791.13	1,915.95	1,510.21	405.74	4.722	
6,250.00	6,140.29	6,107.29	6,107.29	22.40	385.77	175.80	-489.14	-1,791.13	1,950.60	1,542.48	408.12	4.779	
6,300.00	6,173.10	6,140.10	6,140.10	22.51	387.84	175.44	-489.14	-1,791.13	1,988.26	1,577.97	410.29	4.846	
6,350.00	6,202.51	6,169.51	6,169.51	22.61	389.70	174.96	-489.14	-1,791.13	2,028.63	1,616.40	412.22	4.921	
6,385.38	6,221.14	6,188.14	6,188.14	22.68	390.87	174.52	-489.14	-1,791.13	2,058.67	1,645.22	413.45	4.979	
6,400.00	6,228.29	6,195.29	6,195.29	22.71	391.33	175.61	-489.14	-1,791.13	2,071.40	1,657.48	413.92	5.004	
6,450.00	6,250.45	6,217.45	6,217.45	22.80	392.73	179.82	-489.14	-1,791.13	2,116.20	1,700.83	415.37	5.095	
6,500.00	6,268.88	6,235.88	6,235.88	22.89	393.89	-174.62	-489.14	-1,791.13	2,162.66	1,746.09	416.57	5.192	
6,550.00	6,283.45	6,250.45	6,250.45	22.98	394.81	-166.38	-489.14	-1,791.13	2,210.42	1,792.91	417.51	5.294	
6,600.00	6,294.04	6,261.04	6,261.04	23.07	395.48	-152.53	-489.14	-1,791.13	2,259.13	1,840.94	418.20	5.402	
6,650.00	6,300.57	6,267.57	6,267.57	23.17	395.89	-127.72	-489.14	-1,791.13	2,308.43	1,889.81	418.62	5.514	
6,704.35	6,303.00	6,270.00	6,270.00	23.29	396.04	-90.00	-489.14	-1,791.13	2,362.25	1,943.48	418.77	5.641	
6,800.00	6,303.00	6,270.00	6,270.00	23.52	396.04	-90.00	-489.14	-1,791.13	2,456.96	2,038.20	418.76	5.867	
6,900.00	6,303.00	6,270.00	6,270.00	23.82	396.04	-90.00	-489.14	-1,791.13	2,556.05	2,137.29	418.76	6.104	
7,000.00	6,303.00	6,270.00	6,270.00	24.18	396.04	-90.00	-489.14	-1,791.13	2,655.21	2,236.45	418.76	6.341	
7,100.00	6,303.00	6,270.00	6,270.00	24.59	396.04	-90.00	-489.14	-1,791.13	2,754.43	2,335.67	418.76	6.578	
7,200.00	6,303.00	6,270.00	6,270.00	25.06	396.04	-90.00	-489.14	-1,791.13	2,853.71	2,434.94	418.77	6.815	
7,300.00	6,303.00	6,270.00	6,270.00	25.56	396.04	-90.00	-489.14	-1,791.13	2,953.03	2,534.26	418.77	7.052	
7,400.00	6,303.00	6,270.00	6,270.00	26.11	396.04	-90.00	-489.14	-1,791.13	3,052.40	2,633.62	418.78	7.289	
7,500.00	6,303.00	6,270.00	6,270.00	26.70	396.04	-90.00	-489.14	-1,791.13	3,151.81	2,733.02	418.79	7.526	
7,600.00	6,303.00	6,270.00	6,270.00	27.32	396.04	-90.00	-489.14	-1,791.13	3,251.25	2,832.46	418.80	7.763	
7,700.00	6,303.00	6,270.00	6,270.00	27.97	396.04	-90.00	-489.14	-1,791.13	3,350.73	2,931.92	418.81	8.001	
7,800.00	6,303.00	6,270.00	6,270.00	28.66	396.04	-90.00	-489.14	-1,791.13	3,450.24	3,031.42	418.82	8.238	
7,900.00	6,303.00	6,270.00	6,270.00	29.37	396.04	-90.00	-489.14	-1,791.13	3,549.77	3,130.94	418.83	8.475	
8,000.00	6,303.00	6,270.00	6,270.00	30.10	396.04	-90.00	-489.14	-1,791.13	3,649.34	3,230.49	418.85	8.713	
8,100.00	6,303.00	6,270.00	6,270.00	30.86	396.04	-90.00	-489.14	-1,791.13	3,748.92	3,330.05	418.87	8.950	
8,200.00	6,303.00	6,270.00	6,270.00	31.64	396.04	-90.00	-489.14	-1,791.13	3,848.53	3,429.64	418.88	9.188	
8,300.00	6,303.00	6,270.00	6,270.00	32.44	396.04	-90.00	-489.14	-1,791.13	3,948.15	3,529.25	418.90	9.425	
8,400.00	6,303.00	6,270.00	6,270.00	33.26	396.04	-90.00	-489.14	-1,791.13	4,047.79	3,628.87	418.92	9.662	
8,500.00	6,303.00	6,270.00	6,270.00	34.10	396.04	-90.00	-489.14	-1,791.13	4,147.46	3,728.51	418.94	9.900	
8,600.00	6,303.00	6,270.00	6,270.00	34.96	396.04	-90.00	-489.14	-1,791.13	4,247.13	3,828.17	418.96	10.137	
8,700.00	6,303.00	6,270.00	6,270.00	35.82	396.04	-90.00	-489.14	-1,791.13	4,346.83	3,927.84	418.99	10.375	
8,800.00	6,303.00	6,270.00	6,270.00	36.71	396.04	-90.00	-489.14	-1,791.13	4,446.53	4,027.52	419.01	10.612	
8,900.00	6,303.00	6,270.00	6,270.00	37.60	396.04	-90.00	-489.14	-1,791.13	4,546.25	4,127.21	419.04	10.849	
9,000.00	6,303.00	6,270.00	6,270.00	38.51	396.04	-90.00	-489.14	-1,791.13	4,645.98	4,226.92	419.06	11.087	
9,100.00	6,303.00	6,270.00	6,270.00	39.43	396.04	-90.00	-489.14	-1,791.13	4,745.72	4,326.63	419.09	11.324	
9,200.00	6,303.00	6,270.00	6,270.00	40.35	396.04	-90.00	-489.14	-1,791.13	4,845.48	4,426.36	419.12	11.561	
9,300.00	6,303.00	6,270.00	6,270.00	41.29	396.04	-90.00	-489.14	-1,791.13	4,945.24	4,526.09	419.15	11.798	
9,400.00	6,303.00	6,270.00	6,270.00	42.24	396.04	-90.00	-489.14	-1,791.13	5,045.01	4,625.83	419.18	12.035	
9,500.00	6,303.00	6,270.00	6,270.00	43.20	396.04	-90.00	-489.14	-1,791.13	5,144.79	4,725.58	419.21	12.273	
9,600.00	6,303.00	6,270.00	6,270.00	44.16	396.04	-90.00	-489.14	-1,791.13	5,244.58	4,825.34	419.24	12.510	
9,700.00	6,303.00	6,270.00	6,270.00	45.13	396.04	-90.00	-489.14	-1,791.13	5,344.38	4,925.10	419.27	12.747	
9,800.00	6,303.00	6,270.00	6,270.00	46.11	396.04	-90.00	-489.14	-1,791.13	5,444.18	5,024.88	419.31	12.984	
9,900.00	6,303.00	6,270.00	6,270.00	47.09	396.04	-90.00	-489.14	-1,791.13	5,543.99	5,124.65	419.34	13.221	
10,000.00	6,303.00	6,270.00	6,270.00	48.08	396.04	-90.00	-489.14	-1,791.13	5,643.81	5,224.43	419.38	13.458	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W07_PRE-ONGARD WELL #001_1527282 - Depth Only - Depth Only

Offset Site Error: 0.00 usft

Survey Program: 7450-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Rule Assigned: Minimum Separation (usft)	Separation Factor	Warning
10,100.00	6,303.00	6,270.00	6,270.00	49.08	396.04	-90.00	-489.14	-1,791.13	5,743.64	5,324.22	419.42	13.694	
10,200.00	6,303.00	6,270.00	6,270.00	50.08	396.04	-90.00	-489.14	-1,791.13	5,843.47	5,424.02	419.45	13.931	
10,300.00	6,303.00	6,270.00	6,270.00	51.08	396.04	-90.00	-489.14	-1,791.13	5,943.30	5,523.81	419.49	14.168	
10,400.00	6,303.00	6,270.00	6,270.00	52.10	396.04	-90.00	-489.14	-1,791.13	6,043.15	5,623.62	419.53	14.405	
10,500.00	6,303.00	6,270.00	6,270.00	53.11	396.04	-90.00	-489.14	-1,791.13	6,142.99	5,723.42	419.57	14.641	
10,600.00	6,303.00	6,270.00	6,270.00	54.13	396.04	-90.00	-489.14	-1,791.13	6,242.85	5,823.23	419.61	14.878	
10,700.00	6,303.00	6,270.00	6,270.00	55.15	396.04	-90.00	-489.14	-1,791.13	6,342.70	5,923.05	419.65	15.114	
10,800.00	6,303.00	6,270.00	6,270.00	56.18	396.04	-90.00	-489.14	-1,791.13	6,442.56	6,022.87	419.70	15.350	
10,900.00	6,303.00	6,270.00	6,270.00	57.21	396.04	-90.00	-489.14	-1,791.13	6,542.43	6,122.69	419.74	15.587	
11,000.00	6,303.00	6,270.00	6,270.00	58.25	396.04	-90.00	-489.14	-1,791.13	6,642.30	6,222.51	419.79	15.823	
11,100.00	6,303.00	6,270.00	6,270.00	59.28	396.04	-90.00	-489.14	-1,791.13	6,742.17	6,322.34	419.83	16.059	
11,200.00	6,303.00	6,270.00	6,270.00	60.32	396.04	-90.00	-489.14	-1,791.13	6,842.05	6,422.17	419.88	16.295	
11,300.00	6,303.00	6,270.00	6,270.00	61.37	396.04	-90.00	-489.14	-1,791.13	6,941.93	6,522.00	419.93	16.531	
11,400.00	6,303.00	6,270.00	6,270.00	62.41	396.04	-90.00	-489.14	-1,791.13	7,041.81	6,621.84	419.97	16.767	
11,500.00	6,303.00	6,270.00	6,270.00	63.46	396.04	-90.00	-489.14	-1,791.13	7,141.70	6,721.68	420.02	17.003	
11,600.00	6,303.00	6,270.00	6,270.00	64.51	396.04	-90.00	-489.14	-1,791.13	7,241.59	6,821.52	420.07	17.239	
11,700.00	6,303.00	6,270.00	6,270.00	65.57	396.04	-90.00	-489.14	-1,791.13	7,341.48	6,921.36	420.12	17.475	
11,800.00	6,303.00	6,270.00	6,270.00	66.62	396.04	-90.00	-489.14	-1,791.13	7,441.38	7,021.20	420.17	17.710	
11,900.00	6,303.00	6,270.00	6,270.00	67.68	396.04	-90.00	-489.14	-1,791.13	7,541.28	7,121.05	420.23	17.946	
12,000.00	6,303.00	6,270.00	6,270.00	68.74	396.04	-90.00	-489.14	-1,791.13	7,641.18	7,220.90	420.28	18.181	
12,100.00	6,303.00	6,270.00	6,270.00	69.80	396.04	-90.00	-489.14	-1,791.13	7,741.08	7,320.75	420.33	18.417	
12,200.00	6,303.00	6,270.00	6,270.00	70.87	396.04	-90.00	-489.14	-1,791.13	7,840.99	7,420.60	420.39	18.652	
12,300.00	6,303.00	6,270.00	6,270.00	71.93	396.04	-90.00	-489.14	-1,791.13	7,940.90	7,520.46	420.44	18.887	
12,400.00	6,303.00	6,270.00	6,270.00	73.00	396.04	-90.00	-489.14	-1,791.13	8,040.81	7,620.31	420.50	19.122	
12,500.00	6,303.00	6,270.00	6,270.00	74.07	396.04	-90.00	-489.14	-1,791.13	8,140.72	7,720.17	420.56	19.357	
12,600.00	6,303.00	6,270.00	6,270.00	75.14	396.04	-90.00	-489.14	-1,791.13	8,240.64	7,820.02	420.61	19.592	
12,700.00	6,303.00	6,270.00	6,270.00	76.21	396.04	-90.00	-489.14	-1,791.13	8,340.55	7,919.88	420.67	19.827	
12,800.00	6,303.00	6,270.00	6,270.00	77.28	396.04	-90.00	-489.14	-1,791.13	8,440.47	8,019.74	420.73	20.061	
12,900.00	6,303.00	6,270.00	6,270.00	78.36	396.04	-90.00	-489.14	-1,791.13	8,540.39	8,119.61	420.79	20.296	
13,000.00	6,303.00	6,270.00	6,270.00	79.43	396.04	-90.00	-489.14	-1,791.13	8,640.32	8,219.47	420.85	20.531	
13,100.00	6,303.00	6,270.00	6,270.00	80.51	396.04	-90.00	-489.14	-1,791.13	8,740.24	8,319.33	420.91	20.765	
13,200.00	6,303.00	6,270.00	6,270.00	81.59	396.04	-90.00	-489.14	-1,791.13	8,840.17	8,419.20	420.97	20.999	
13,300.00	6,303.00	6,270.00	6,270.00	82.67	396.04	-90.00	-489.14	-1,791.13	8,940.10	8,519.06	421.04	21.234	
13,400.00	6,303.00	6,270.00	6,270.00	83.75	396.04	-90.00	-489.14	-1,791.13	9,040.03	8,618.93	421.10	21.468	
13,500.00	6,303.00	6,270.00	6,270.00	84.83	396.04	-90.00	-489.14	-1,791.13	9,139.96	8,718.79	421.16	21.702	
13,600.00	6,303.00	6,270.00	6,270.00	85.91	396.04	-90.00	-489.14	-1,791.13	9,239.89	8,818.66	421.23	21.936	
13,700.00	6,303.00	6,270.00	6,270.00	87.00	396.04	-90.00	-489.14	-1,791.13	9,339.83	8,918.53	421.29	22.169	
13,800.00	6,303.00	6,270.00	6,270.00	88.08	396.04	-90.00	-489.14	-1,791.13	9,439.76	9,018.40	421.36	22.403	
13,900.00	6,303.00	6,270.00	6,270.00	89.17	396.04	-90.00	-489.14	-1,791.13	9,539.70	9,118.27	421.43	22.637	
14,000.00	6,303.00	6,270.00	6,270.00	90.26	396.04	-90.00	-489.14	-1,791.13	9,639.64	9,218.14	421.50	22.870	
14,100.00	6,303.00	6,270.00	6,270.00	91.34	396.04	-90.00	-489.14	-1,791.13	9,739.58	9,318.01	421.56	23.103	
14,200.00	6,303.00	6,270.00	6,270.00	92.43	396.04	-90.00	-489.14	-1,791.13	9,839.52	9,417.88	421.63	23.337	
14,300.00	6,303.00	6,270.00	6,270.00	93.52	396.04	-90.00	-489.14	-1,791.13	9,939.46	9,517.76	421.70	23.570	
14,400.00	6,303.00	6,270.00	6,270.00	94.61	396.04	-90.00	-489.14	-1,791.13	10,039.40	9,617.63	421.77	23.803	
14,500.00	6,303.00	6,270.00	6,270.00	95.70	396.04	-90.00	-489.14	-1,791.13	10,139.35	9,717.50	421.84	24.036	
14,600.00	6,303.00	6,270.00	6,270.00	96.79	396.04	-90.00	-489.14	-1,791.13	10,239.29	9,817.38	421.92	24.269	
14,700.00	6,303.00	6,270.00	6,270.00	97.88	396.04	-90.00	-489.14	-1,791.13	10,339.24	9,917.25	421.99	24.501	
14,800.00	6,303.00	6,270.00	6,270.00	98.98	396.04	-90.00	-489.14	-1,791.13	10,439.18	10,017.12	422.06	24.734	
14,900.00	6,303.00	6,270.00	6,270.00	100.07	396.04	-90.00	-489.14	-1,791.13	10,539.13	10,117.00	422.13	24.966	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W09_GOVERNMENT AB #002_1521480 - Inc Only - Inc Only — **Offset Site Error:** 0.00 usft

Survey Program: 300-INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,200.00	6,303.00	6,265.28	6,264.00	70.87	138.84	-90.00	900.72	10,092.63	4,380.81	4,204.74	176.08	24.880	
12,300.00	6,303.00	6,265.28	6,264.00	71.93	138.84	-90.00	900.72	10,092.63	4,288.33	4,111.49	176.84	24.250	
12,400.00	6,303.00	6,265.28	6,264.00	73.00	138.84	-90.00	900.72	10,092.63	4,196.18	4,018.54	177.64	23.621	
12,500.00	6,303.00	6,265.28	6,264.00	74.07	138.84	-90.00	900.72	10,092.63	4,104.41	3,925.92	178.49	22.995	
12,600.00	6,303.00	6,265.28	6,264.00	75.14	138.84	-90.00	900.72	10,092.63	4,013.03	3,833.65	179.38	22.372	
12,700.00	6,303.00	6,265.28	6,264.00	76.21	138.84	-90.00	900.72	10,092.63	3,922.06	3,741.75	180.32	21.751	
12,800.00	6,303.00	6,265.28	6,264.00	77.28	138.84	-90.00	900.72	10,092.63	3,831.55	3,650.25	181.31	21.133	
12,900.00	6,303.00	6,265.28	6,264.00	78.36	138.84	-90.00	900.72	10,092.63	3,741.52	3,559.18	182.35	20.519	
13,000.00	6,303.00	6,265.28	6,264.00	79.43	138.84	-90.00	900.72	10,092.63	3,652.01	3,468.57	183.44	19.908	
13,100.00	6,303.00	6,265.28	6,264.00	80.51	138.84	-90.00	900.72	10,092.63	3,563.06	3,378.46	184.60	19.301	
13,200.00	6,303.00	6,265.28	6,264.00	81.59	138.84	-90.00	900.72	10,092.63	3,474.71	3,288.89	185.82	18.699	
13,300.00	6,303.00	6,265.28	6,264.00	82.67	138.84	-90.00	900.72	10,092.63	3,387.01	3,199.90	187.11	18.102	
13,400.00	6,303.00	6,265.28	6,264.00	83.75	138.84	-90.00	900.72	10,092.63	3,300.01	3,111.54	188.46	17.510	
13,500.00	6,303.00	6,265.28	6,264.00	84.83	138.84	-90.00	900.72	10,092.63	3,213.76	3,023.86	189.90	16.924	
13,600.00	6,303.00	6,265.28	6,264.00	85.91	138.84	-90.00	900.72	10,092.63	3,128.33	2,936.93	191.41	16.344	
13,700.00	6,303.00	6,265.28	6,264.00	87.00	138.84	-90.00	900.72	10,092.63	3,043.79	2,850.79	193.00	15.771	
13,800.00	6,303.00	6,265.28	6,264.00	88.08	138.84	-90.00	900.72	10,092.63	2,960.22	2,765.54	194.68	15.206	
13,900.00	6,303.00	6,265.28	6,264.00	89.17	138.84	-90.00	900.72	10,092.63	2,877.69	2,681.24	196.45	14.648	
14,000.00	6,303.00	6,265.28	6,264.00	90.26	138.84	-90.00	900.72	10,092.63	2,796.30	2,597.99	198.32	14.100	
14,100.00	6,303.00	6,265.28	6,264.00	91.34	138.84	-90.00	900.72	10,092.63	2,716.16	2,515.88	200.28	13.562	
14,200.00	6,303.00	6,265.28	6,264.00	92.43	138.84	-90.00	900.72	10,092.63	2,637.37	2,435.02	202.35	13.034	
14,300.00	6,303.00	6,265.28	6,264.00	93.52	138.84	-90.00	900.72	10,092.63	2,560.07	2,355.54	204.53	12.517	
14,400.00	6,303.00	6,265.28	6,264.00	94.61	138.84	-90.00	900.72	10,092.63	2,484.38	2,277.57	206.81	12.013	
14,500.00	6,303.00	6,265.28	6,264.00	95.70	138.84	-90.00	900.72	10,092.63	2,410.47	2,201.27	209.20	11.522	
14,600.00	6,303.00	6,265.28	6,264.00	96.79	138.84	-90.00	900.72	10,092.63	2,338.50	2,126.80	211.70	11.046	
14,700.00	6,303.00	6,265.28	6,264.00	97.88	138.84	-90.00	900.72	10,092.63	2,268.65	2,054.34	214.31	10.586	
14,800.00	6,303.00	6,265.28	6,264.00	98.98	138.84	-90.00	900.72	10,092.63	2,201.13	1,984.12	217.02	10.143	
14,900.00	6,303.00	6,265.28	6,264.00	100.07	138.84	-90.00	900.72	10,092.63	2,136.16	1,916.34	219.82	9.718	
15,000.00	6,303.00	6,265.28	6,264.00	101.16	138.84	-90.00	900.72	10,092.63	2,073.98	1,851.28	222.71	9.313	
15,100.00	6,303.00	6,265.28	6,264.00	102.26	138.84	-90.00	900.72	10,092.63	2,014.85	1,789.19	225.66	8.929	
15,200.00	6,303.00	6,265.28	6,264.00	103.35	138.84	-90.00	900.72	10,092.63	1,959.04	1,730.37	228.66	8.567	
15,300.00	6,303.00	6,265.28	6,264.00	104.45	138.84	-90.00	900.72	10,092.63	1,906.84	1,675.15	231.68	8.230	
15,400.00	6,303.00	6,265.28	6,264.00	105.55	138.84	-90.00	900.72	10,092.63	1,858.56	1,623.86	234.70	7.919	
15,500.00	6,303.00	6,265.28	6,264.00	106.64	138.84	-90.00	900.72	10,092.63	1,814.51	1,576.85	237.66	7.635	
15,600.00	6,303.00	6,265.28	6,264.00	107.74	138.84	-90.00	900.72	10,092.63	1,775.01	1,534.47	240.54	7.379	
15,700.00	6,303.00	6,265.28	6,264.00	108.84	138.84	-90.00	900.72	10,092.63	1,740.36	1,497.09	243.27	7.154	
15,800.00	6,303.00	6,265.28	6,264.00	109.94	138.84	-90.00	900.72	10,092.63	1,710.87	1,465.05	245.82	6.960	
15,900.00	6,303.00	6,265.28	6,264.00	111.03	138.84	-90.00	900.72	10,092.63	1,686.80	1,438.67	248.13	6.798	
16,000.00	6,303.00	6,265.28	6,264.00	112.13	138.84	-90.00	900.72	10,092.63	1,668.38	1,418.23	250.15	6.669	
16,100.00	6,303.00	6,265.28	6,264.00	113.23	138.84	-90.00	900.72	10,092.63	1,655.81	1,403.96	251.85	6.575	
16,200.00	6,303.00	6,265.28	6,264.00	114.33	138.84	-90.00	900.72	10,092.63	1,649.22	1,396.05	253.17	6.514	
16,258.95	6,303.00	6,265.28	6,264.00	114.98	138.84	-90.00	900.72	10,092.63	1,648.16	1,394.39	253.77	6.495	CC, ES
16,300.00	6,303.00	6,265.28	6,264.00	115.43	138.84	-90.00	900.72	10,092.63	1,648.67	1,394.57	254.11	6.488	SF
16,400.00	6,303.00	6,265.28	6,264.00	116.53	138.84	-90.00	900.72	10,092.63	1,654.19	1,399.55	254.64	6.496	
16,500.00	6,303.00	6,265.28	6,264.00	117.64	138.84	-90.00	900.72	10,092.63	1,665.70	1,410.92	254.78	6.538	
16,600.00	6,303.00	6,265.28	6,264.00	118.74	138.84	-90.00	900.72	10,092.63	1,683.08	1,428.55	254.53	6.613	
16,700.00	6,303.00	6,265.28	6,264.00	119.84	138.84	-90.00	900.72	10,092.63	1,706.16	1,452.23	253.92	6.719	
16,800.00	6,303.00	6,265.28	6,264.00	120.94	138.84	-90.00	900.72	10,092.63	1,734.70	1,481.70	252.99	6.857	
16,890.04	6,303.00	6,265.28	6,264.00	121.94	138.84	-90.00	900.72	10,092.63	1,764.86	1,512.94	251.92	7.006	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W10_GOVERNMENT AB #003_1521774 - Inc Only - Inc Only — **Offset Site Error:** 0.00 usft

Survey Program: 350-INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,300.00	6,303.00	6,274.30	6,274.00	51.08	117.72	-90.00	882.55	7,420.88	3,676.97	3,526.16	150.81	24.381	
10,400.00	6,303.00	6,274.30	6,274.00	52.10	117.72	-90.00	882.55	7,420.88	3,587.85	3,436.30	151.55	23.674	
10,500.00	6,303.00	6,274.30	6,274.00	53.11	117.72	-90.00	882.55	7,420.88	3,499.32	3,346.98	152.34	22.971	
10,600.00	6,303.00	6,274.30	6,274.00	54.13	117.72	-90.00	882.55	7,420.88	3,411.43	3,258.25	153.17	22.272	
10,700.00	6,303.00	6,274.30	6,274.00	55.15	117.72	-90.00	882.55	7,420.88	3,324.21	3,170.15	154.06	21.577	
10,800.00	6,303.00	6,274.30	6,274.00	56.18	117.72	-90.00	882.55	7,420.88	3,237.74	3,082.73	155.01	20.887	
10,900.00	6,303.00	6,274.30	6,274.00	57.21	117.72	-90.00	882.55	7,420.88	3,152.07	2,996.05	156.02	20.203	
11,000.00	6,303.00	6,274.30	6,274.00	58.25	117.72	-90.00	882.55	7,420.88	3,067.26	2,910.17	157.09	19.525	
11,100.00	6,303.00	6,274.30	6,274.00	59.28	117.72	-90.00	882.55	7,420.88	2,983.40	2,825.17	158.23	18.855	
11,200.00	6,303.00	6,274.30	6,274.00	60.32	117.72	-90.00	882.55	7,420.88	2,900.56	2,741.12	159.44	18.192	
11,300.00	6,303.00	6,274.30	6,274.00	61.37	117.72	-90.00	882.55	7,420.88	2,818.83	2,658.11	160.72	17.538	
11,400.00	6,303.00	6,274.30	6,274.00	62.41	117.72	-90.00	882.55	7,420.88	2,738.32	2,576.23	162.09	16.894	
11,500.00	6,303.00	6,274.30	6,274.00	63.46	117.72	-90.00	882.55	7,420.88	2,659.13	2,495.60	163.53	16.261	
11,600.00	6,303.00	6,274.30	6,274.00	64.51	117.72	-90.00	882.55	7,420.88	2,581.38	2,416.32	165.06	15.639	
11,700.00	6,303.00	6,274.30	6,274.00	65.57	117.72	-90.00	882.55	7,420.88	2,505.22	2,338.54	166.68	15.030	
11,800.00	6,303.00	6,274.30	6,274.00	66.62	117.72	-90.00	882.55	7,420.88	2,430.78	2,262.40	168.38	14.436	
11,900.00	6,303.00	6,274.30	6,274.00	67.68	117.72	-90.00	882.55	7,420.88	2,358.23	2,188.05	170.18	13.857	
12,000.00	6,303.00	6,274.30	6,274.00	68.74	117.72	-90.00	882.55	7,420.88	2,287.76	2,115.70	172.06	13.296	
12,100.00	6,303.00	6,274.30	6,274.00	69.80	117.72	-90.00	882.55	7,420.88	2,219.55	2,045.52	174.03	12.754	
12,200.00	6,303.00	6,274.30	6,274.00	70.87	117.72	-90.00	882.55	7,420.88	2,153.83	1,977.74	176.09	12.232	
12,300.00	6,303.00	6,274.30	6,274.00	71.93	117.72	-90.00	882.55	7,420.88	2,090.83	1,912.60	178.22	11.732	
12,400.00	6,303.00	6,274.30	6,274.00	73.00	117.72	-90.00	882.55	7,420.88	2,030.79	1,850.37	180.42	11.256	
12,500.00	6,303.00	6,274.30	6,274.00	74.07	117.72	-90.00	882.55	7,420.88	1,974.00	1,791.33	182.68	10.806	
12,600.00	6,303.00	6,274.30	6,274.00	75.14	117.72	-90.00	882.55	7,420.88	1,920.75	1,735.78	184.97	10.384	
12,700.00	6,303.00	6,274.30	6,274.00	76.21	117.72	-90.00	882.55	7,420.88	1,871.32	1,684.04	187.28	9.992	
12,800.00	6,303.00	6,274.30	6,274.00	77.28	117.72	-90.00	882.55	7,420.88	1,826.04	1,636.46	189.58	9.632	
12,900.00	6,303.00	6,274.30	6,274.00	78.36	117.72	-90.00	882.55	7,420.88	1,785.21	1,593.38	191.83	9.306	
13,000.00	6,303.00	6,274.30	6,274.00	79.43	117.72	-90.00	882.55	7,420.88	1,749.16	1,555.14	194.02	9.015	
13,100.00	6,303.00	6,274.30	6,274.00	80.51	117.72	-90.00	882.55	7,420.88	1,718.18	1,522.08	196.10	8.762	
13,200.00	6,303.00	6,274.30	6,274.00	81.59	117.72	-90.00	882.55	7,420.88	1,692.54	1,494.52	198.02	8.547	
13,300.00	6,303.00	6,274.30	6,274.00	82.67	117.72	-90.00	882.55	7,420.88	1,672.50	1,472.74	199.76	8.372	
13,400.00	6,303.00	6,274.30	6,274.00	83.75	117.72	-90.00	882.55	7,420.88	1,658.27	1,456.99	201.28	8.239	
13,500.00	6,303.00	6,274.30	6,274.00	84.83	117.72	-90.00	882.55	7,420.88	1,649.97	1,447.43	202.54	8.146	
13,587.14	6,303.00	6,274.30	6,274.00	85.78	117.72	-90.00	882.55	7,420.88	1,647.67	1,444.25	203.42	8.100 CC	
13,600.00	6,303.00	6,274.30	6,274.00	85.91	117.72	-90.00	882.55	7,420.88	1,647.72	1,444.19	203.54	8.095 ES	
13,700.00	6,303.00	6,274.30	6,274.00	87.00	117.72	-90.00	882.55	7,420.88	1,651.53	1,447.29	204.24	8.086 SF	
13,800.00	6,303.00	6,274.30	6,274.00	88.08	117.72	-90.00	882.55	7,420.88	1,661.36	1,456.71	204.65	8.118	
13,900.00	6,303.00	6,274.30	6,274.00	89.17	117.72	-90.00	882.55	7,420.88	1,677.11	1,472.34	204.78	8.190	
14,000.00	6,303.00	6,274.30	6,274.00	90.26	117.72	-90.00	882.55	7,420.88	1,698.61	1,493.98	204.63	8.301	
14,100.00	6,303.00	6,274.30	6,274.00	91.34	117.72	-90.00	882.55	7,420.88	1,725.64	1,521.41	204.23	8.449	
14,200.00	6,303.00	6,274.30	6,274.00	92.43	117.72	-90.00	882.55	7,420.88	1,757.96	1,554.35	203.61	8.634	
14,300.00	6,303.00	6,274.30	6,274.00	93.52	117.72	-90.00	882.55	7,420.88	1,795.27	1,592.47	202.80	8.852	
14,400.00	6,303.00	6,274.30	6,274.00	94.61	117.72	-90.00	882.55	7,420.88	1,837.27	1,635.44	201.83	9.103	
14,500.00	6,303.00	6,274.30	6,274.00	95.70	117.72	-90.00	882.55	7,420.88	1,883.65	1,682.92	200.73	9.384	
14,600.00	6,303.00	6,274.30	6,274.00	96.79	117.72	-90.00	882.55	7,420.88	1,934.09	1,734.56	199.53	9.693	
14,700.00	6,303.00	6,274.30	6,274.00	97.88	117.72	-90.00	882.55	7,420.88	1,988.29	1,790.02	198.26	10.029	
14,800.00	6,303.00	6,274.30	6,274.00	98.98	117.72	-90.00	882.55	7,420.88	2,045.94	1,848.99	196.95	10.388	
14,900.00	6,303.00	6,274.30	6,274.00	100.07	117.72	-90.00	882.55	7,420.88	2,106.76	1,911.16	195.60	10.771	
15,000.00	6,303.00	6,274.30	6,274.00	101.16	117.72	-90.00	882.55	7,420.88	2,170.48	1,976.24	194.25	11.174	
15,100.00	6,303.00	6,274.30	6,274.00	102.26	117.72	-90.00	882.55	7,420.88	2,236.87	2,043.97	192.90	11.596	
15,200.00	6,303.00	6,274.30	6,274.00	103.35	117.72	-90.00	882.55	7,420.88	2,305.68	2,114.11	191.56	12.036	
15,300.00	6,303.00	6,274.30	6,274.00	104.45	117.72	-90.00	882.55	7,420.88	2,376.70	2,186.45	190.25	12.492	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W10_GOVERNMENT AB #003_1521774 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 350-INC-ONLY **Rule Assigned:** **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	6,303.00	6,274.30	6,274.00	105.55	117.72	-90.00	882.55	7,420.88	2,449.75	2,260.78	188.97	12.963	
15,500.00	6,303.00	6,274.30	6,274.00	106.64	117.72	-90.00	882.55	7,420.88	2,524.65	2,336.92	187.73	13.448	
15,600.00	6,303.00	6,274.30	6,274.00	107.74	117.72	-90.00	882.55	7,420.88	2,601.24	2,414.71	186.53	13.945	
15,700.00	6,303.00	6,274.30	6,274.00	108.84	117.72	-90.00	882.55	7,420.88	2,679.37	2,494.00	185.37	14.454	
15,800.00	6,303.00	6,274.30	6,274.00	109.94	117.72	-90.00	882.55	7,420.88	2,758.91	2,574.65	184.26	14.973	
15,900.00	6,303.00	6,274.30	6,274.00	111.03	117.72	-90.00	882.55	7,420.88	2,839.74	2,656.56	183.18	15.502	
16,000.00	6,303.00	6,274.30	6,274.00	112.13	117.72	-90.00	882.55	7,420.88	2,921.77	2,739.61	182.16	16.040	
16,100.00	6,303.00	6,274.30	6,274.00	113.23	117.72	-90.00	882.55	7,420.88	3,004.88	2,823.70	181.17	16.586	
16,200.00	6,303.00	6,274.30	6,274.00	114.33	117.72	-90.00	882.55	7,420.88	3,088.99	2,908.76	180.23	17.139	
16,300.00	6,303.00	6,274.30	6,274.00	115.43	117.72	-90.00	882.55	7,420.88	3,174.03	2,994.69	179.34	17.699	
16,400.00	6,303.00	6,274.30	6,274.00	116.53	117.72	-90.00	882.55	7,420.88	3,259.91	3,081.43	178.48	18.265	
16,500.00	6,303.00	6,274.30	6,274.00	117.64	117.72	-90.00	882.55	7,420.88	3,346.58	3,168.92	177.66	18.837	
16,600.00	6,303.00	6,274.30	6,274.00	118.74	117.72	-90.00	882.55	7,420.88	3,433.97	3,257.09	176.88	19.414	
16,700.00	6,303.00	6,274.30	6,274.00	119.84	117.72	-90.00	882.55	7,420.88	3,522.03	3,345.90	176.14	19.996	
16,800.00	6,303.00	6,274.30	6,274.00	120.94	117.72	-90.00	882.55	7,420.88	3,610.72	3,435.29	175.43	20.583	
16,890.04	6,303.00	6,274.30	6,274.00	121.94	117.72	-90.00	882.55	7,420.88	3,691.07	3,516.25	174.82	21.114	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 156-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,800.00	6,303.00	6,301.36	6,298.95	46.11	159.24	-90.29	3,531.89	6,138.53	4,989.94	4,787.86	202.09	24.692	
9,900.00	6,303.00	6,301.35	6,298.94	47.09	159.24	-90.29	3,531.89	6,138.53	4,940.15	4,736.97	203.17	24.315	
10,000.00	6,303.00	6,301.35	6,298.94	48.08	159.24	-90.29	3,531.89	6,138.53	4,891.89	4,687.61	204.28	23.946	
10,100.00	6,303.00	6,301.34	6,298.93	49.08	159.24	-90.29	3,531.89	6,138.53	4,845.22	4,639.80	205.41	23.588	
10,200.00	6,303.00	6,301.34	6,298.93	50.08	159.24	-90.29	3,531.89	6,138.53	4,800.17	4,593.61	206.56	23.238	
10,300.00	6,303.00	6,301.33	6,298.92	51.08	159.24	-90.29	3,531.89	6,138.53	4,756.80	4,549.08	207.73	22.899	
10,400.00	6,303.00	6,301.33	6,298.92	52.10	159.24	-90.29	3,531.89	6,138.53	4,715.16	4,506.25	208.91	22.571	
10,500.00	6,303.00	6,301.33	6,298.91	53.11	159.24	-90.29	3,531.89	6,138.53	4,675.28	4,465.18	210.10	22.253	
10,600.00	6,303.00	6,301.32	6,298.91	54.13	159.24	-90.29	3,531.89	6,138.53	4,637.22	4,425.91	211.30	21.946	
10,700.00	6,303.00	6,301.32	6,298.90	55.15	159.24	-90.29	3,531.89	6,138.53	4,601.01	4,388.50	212.51	21.650	
10,800.00	6,303.00	6,301.31	6,298.90	56.18	159.24	-90.29	3,531.89	6,138.53	4,566.71	4,352.98	213.73	21.366	
10,900.00	6,303.00	6,301.31	6,298.89	57.21	159.24	-90.29	3,531.89	6,138.53	4,534.35	4,319.40	214.96	21.094	
11,000.00	6,303.00	6,301.30	6,298.89	58.25	159.24	-90.29	3,531.89	6,138.53	4,503.99	4,287.80	216.18	20.834	
11,100.00	6,303.00	6,301.30	6,298.88	59.28	159.24	-90.29	3,531.89	6,138.53	4,475.65	4,258.24	217.41	20.586	
11,200.00	6,303.00	6,301.29	6,298.88	60.32	159.24	-90.29	3,531.89	6,138.53	4,449.38	4,230.75	218.63	20.351	
11,300.00	6,303.00	6,301.29	6,298.87	61.37	159.24	-90.29	3,531.89	6,138.53	4,425.21	4,205.37	219.85	20.129	
11,400.00	6,303.00	6,301.28	6,298.87	62.41	159.24	-90.29	3,531.89	6,138.53	4,403.18	4,182.13	221.05	19.919	
11,500.00	6,303.00	6,301.28	6,298.86	63.46	159.24	-90.29	3,531.89	6,138.53	4,383.33	4,161.08	222.25	19.723	
11,600.00	6,303.00	6,301.27	6,298.86	64.51	159.24	-90.29	3,531.89	6,138.53	4,365.67	4,142.24	223.43	19.539	
11,700.00	6,303.00	6,301.27	6,298.85	65.57	159.24	-90.29	3,531.89	6,138.53	4,350.24	4,125.64	224.60	19.369	
11,800.00	6,303.00	6,301.26	6,298.85	66.62	159.24	-90.29	3,531.89	6,138.53	4,337.07	4,111.32	225.75	19.212	
11,900.00	6,303.00	6,301.26	6,298.84	67.68	159.24	-90.29	3,531.89	6,138.53	4,326.16	4,099.29	226.87	19.069	
12,000.00	6,303.00	6,301.25	6,298.84	68.74	159.24	-90.29	3,531.89	6,138.53	4,317.55	4,089.57	227.97	18.939	
12,100.00	6,303.00	6,301.25	6,298.83	69.80	159.24	-90.29	3,531.89	6,138.53	4,311.23	4,082.18	229.05	18.822	
12,200.00	6,303.00	6,301.24	6,298.83	70.87	159.24	-90.29	3,531.89	6,138.53	4,307.23	4,077.14	230.10	18.719	
12,300.00	6,303.00	6,301.24	6,298.82	71.93	159.24	-90.29	3,531.89	6,138.53	4,305.55	4,074.44	231.11	18.630	
12,322.35	6,303.00	6,301.24	6,298.82	72.17	159.24	-90.29	3,531.89	6,138.53	4,305.50	4,074.16	231.33	18.612 CC	
12,400.00	6,303.00	6,301.23	6,298.82	73.00	159.24	-90.29	3,531.89	6,138.53	4,306.20	4,074.10	232.10	18.554 ES	
12,500.00	6,303.00	6,301.23	6,298.81	74.07	159.24	-90.29	3,531.89	6,138.53	4,309.16	4,076.11	233.04	18.491	
12,600.00	6,303.00	6,301.22	6,298.81	75.14	159.24	-90.29	3,531.89	6,138.53	4,314.44	4,080.48	233.96	18.441	
12,700.00	6,303.00	6,301.22	6,298.81	76.21	159.24	-90.29	3,531.89	6,138.53	4,322.03	4,087.19	234.83	18.405	
12,800.00	6,303.00	6,301.21	6,298.80	77.28	159.24	-90.29	3,531.89	6,138.53	4,331.91	4,096.24	235.67	18.381	
12,900.00	6,303.00	6,301.21	6,298.80	78.36	159.24	-90.29	3,531.89	6,138.53	4,344.07	4,107.60	236.47	18.370 SF	
13,000.00	6,303.00	6,301.20	6,298.79	79.43	159.24	-90.29	3,531.89	6,138.53	4,358.50	4,121.27	237.23	18.373	
13,100.00	6,303.00	6,301.20	6,298.79	80.51	159.24	-90.29	3,531.89	6,138.53	4,375.16	4,137.21	237.95	18.387	
13,200.00	6,303.00	6,301.19	6,298.78	81.59	159.24	-90.29	3,531.89	6,138.53	4,394.04	4,155.41	238.62	18.414	
13,300.00	6,303.00	6,301.19	6,298.78	82.67	159.24	-90.29	3,531.89	6,138.53	4,415.10	4,175.84	239.26	18.453	
13,400.00	6,303.00	6,301.18	6,298.77	83.75	159.24	-90.29	3,531.89	6,138.53	4,438.31	4,198.46	239.86	18.504	
13,500.00	6,303.00	6,301.18	6,298.77	84.83	159.24	-90.29	3,531.89	6,138.53	4,463.65	4,223.24	240.41	18.567	
13,600.00	6,303.00	6,301.17	6,298.76	85.91	159.24	-90.29	3,531.89	6,138.53	4,491.07	4,250.14	240.93	18.641	
13,700.00	6,303.00	6,301.17	6,298.76	87.00	159.24	-90.29	3,531.89	6,138.53	4,520.53	4,279.13	241.40	18.726	
13,800.00	6,303.00	6,301.16	6,298.75	88.08	159.24	-90.29	3,531.89	6,138.53	4,552.00	4,310.16	241.84	18.822	
13,900.00	6,303.00	6,301.16	6,298.75	89.17	159.24	-90.29	3,531.89	6,138.53	4,585.44	4,343.20	242.24	18.929	
14,000.00	6,303.00	6,301.16	6,298.74	90.26	159.24	-90.29	3,531.89	6,138.53	4,620.80	4,378.20	242.60	19.047	
14,100.00	6,303.00	6,301.15	6,298.74	91.34	159.24	-90.29	3,531.89	6,138.53	4,658.04	4,415.11	242.93	19.174	
14,200.00	6,303.00	6,301.15	6,298.73	92.43	159.24	-90.29	3,531.89	6,138.53	4,697.11	4,453.89	243.22	19.312	
14,300.00	6,303.00	6,301.14	6,298.73	93.52	159.24	-90.29	3,531.89	6,138.53	4,737.97	4,494.49	243.48	19.459	
14,400.00	6,303.00	6,301.14	6,298.72	94.61	159.24	-90.29	3,531.89	6,138.53	4,780.58	4,536.87	243.71	19.616	
14,500.00	6,303.00	6,301.13	6,298.72	95.70	159.24	-90.29	3,531.89	6,138.53	4,824.88	4,580.97	243.91	19.782	
14,600.00	6,303.00	6,301.13	6,298.71	96.79	159.24	-90.29	3,531.89	6,138.53	4,870.83	4,626.76	244.07	19.956	
14,700.00	6,303.00	6,301.12	6,298.71	97.88	159.24	-90.29	3,531.89	6,138.53	4,918.39	4,674.17	244.21	20.140	
14,800.00	6,303.00	6,301.12	6,298.70	98.98	159.24	-90.29	3,531.89	6,138.53	4,967.50	4,723.17	244.33	20.331	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 156-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,900.00	6,303.00	6,301.11	6,298.70	100.07	159.24	-90.29	3,531.89	6,138.53	5,018.12	4,773.71	244.42	20.531	
15,000.00	6,303.00	6,301.11	6,298.69	101.16	159.24	-90.29	3,531.89	6,138.53	5,070.22	4,825.73	244.48	20.739	
15,100.00	6,303.00	6,301.10	6,298.69	102.26	159.24	-90.29	3,531.89	6,138.53	5,123.73	4,879.21	244.53	20.954	
15,200.00	6,303.00	6,301.10	6,298.68	103.35	159.24	-90.29	3,531.89	6,138.53	5,178.63	4,934.08	244.55	21.176	
15,300.00	6,303.00	6,301.09	6,298.68	104.45	159.24	-90.29	3,531.89	6,138.53	5,234.85	4,990.30	244.55	21.406	
15,400.00	6,303.00	6,301.09	6,298.67	105.55	159.24	-90.29	3,531.89	6,138.53	5,292.37	5,047.84	244.54	21.642	
15,500.00	6,303.00	6,301.08	6,298.67	106.64	159.24	-90.29	3,531.89	6,138.53	5,351.15	5,106.64	244.51	21.885	
15,600.00	6,303.00	6,301.08	6,298.66	107.74	159.24	-90.29	3,531.89	6,138.53	5,411.13	5,166.67	244.46	22.135	
15,700.00	6,303.00	6,301.07	6,298.66	108.84	159.24	-90.29	3,531.89	6,138.53	5,472.28	5,227.88	244.40	22.391	
15,800.00	6,303.00	6,301.07	6,298.66	109.94	159.24	-90.29	3,531.89	6,138.53	5,534.56	5,290.24	244.32	22.653	
15,900.00	6,303.00	6,301.06	6,298.65	111.03	159.24	-90.29	3,531.89	6,138.53	5,597.94	5,353.70	244.23	22.920	
16,000.00	6,303.00	6,301.06	6,298.65	112.13	159.24	-90.29	3,531.89	6,138.53	5,662.37	5,418.23	244.14	23.194	
16,100.00	6,303.00	6,301.05	6,298.64	113.23	159.24	-90.29	3,531.89	6,138.53	5,727.82	5,483.80	244.03	23.472	
16,200.00	6,303.00	6,301.05	6,298.64	114.33	159.24	-90.29	3,531.89	6,138.53	5,794.26	5,550.36	243.91	23.756	
16,300.00	6,303.00	6,301.04	6,298.63	115.43	159.24	-90.29	3,531.89	6,138.53	5,861.65	5,617.88	243.78	24.045	
16,400.00	6,303.00	6,301.04	6,298.63	116.53	159.24	-90.29	3,531.89	6,138.53	5,929.97	5,686.33	243.64	24.339	
16,500.00	6,303.00	6,301.03	6,298.62	117.64	159.24	-90.29	3,531.89	6,138.53	5,999.17	5,755.67	243.50	24.637	
16,600.00	6,303.00	6,301.03	6,298.62	118.74	159.24	-90.29	3,531.89	6,138.53	6,069.23	5,825.88	243.35	24.940	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 155-INC-ONLY

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,400.00	6,303.00	6,312.79	6,309.55	52.10	170.67	-90.51	3,541.52	7,459.02	5,390.94	5,174.64	216.30	24.923	
10,500.00	6,303.00	6,312.79	6,309.55	53.11	170.67	-90.51	3,541.52	7,459.02	5,331.39	5,113.97	217.42	24.521	
10,600.00	6,303.00	6,312.78	6,309.54	54.13	170.67	-90.51	3,541.52	7,459.02	5,273.05	5,054.49	218.56	24.126	
10,700.00	6,303.00	6,312.77	6,309.53	55.15	170.67	-90.51	3,541.52	7,459.02	5,215.99	4,996.26	219.73	23.738	
10,800.00	6,303.00	6,312.76	6,309.52	56.18	170.67	-90.51	3,541.52	7,459.02	5,160.23	4,939.31	220.92	23.358	
10,900.00	6,303.00	6,312.75	6,309.51	57.21	170.67	-90.51	3,541.52	7,459.02	5,105.82	4,883.69	222.13	22.986	
11,000.00	6,303.00	6,312.75	6,309.51	58.25	170.67	-90.51	3,541.52	7,459.02	5,052.80	4,829.44	223.36	22.622	
11,100.00	6,303.00	6,312.74	6,309.50	59.28	170.67	-90.51	3,541.52	7,459.02	5,001.22	4,776.61	224.62	22.266	
11,200.00	6,303.00	6,312.73	6,309.49	60.32	170.67	-90.51	3,541.52	7,459.02	4,951.13	4,725.24	225.89	21.919	
11,300.00	6,303.00	6,312.72	6,309.48	61.37	170.67	-90.51	3,541.52	7,459.02	4,902.56	4,675.38	227.18	21.581	
11,400.00	6,303.00	6,312.71	6,309.47	62.41	170.67	-90.51	3,541.52	7,459.02	4,855.56	4,627.08	228.48	21.252	
11,500.00	6,303.00	6,312.71	6,309.47	63.46	170.67	-90.51	3,541.52	7,459.02	4,810.19	4,580.39	229.80	20.932	
11,600.00	6,303.00	6,312.70	6,309.46	64.51	170.66	-90.51	3,541.52	7,459.02	4,766.48	4,535.35	231.13	20.623	
11,700.00	6,303.00	6,312.69	6,309.45	65.57	170.66	-90.51	3,541.52	7,459.02	4,724.49	4,492.02	232.47	20.323	
11,800.00	6,303.00	6,312.68	6,309.44	66.62	170.66	-90.51	3,541.52	7,459.02	4,684.25	4,450.43	233.82	20.034	
11,900.00	6,303.00	6,312.67	6,309.43	67.68	170.66	-90.51	3,541.52	7,459.02	4,645.82	4,410.65	235.17	19.755	
12,000.00	6,303.00	6,312.66	6,309.43	68.74	170.66	-90.51	3,541.52	7,459.02	4,609.24	4,372.71	236.53	19.487	
12,100.00	6,303.00	6,312.66	6,309.42	69.80	170.66	-90.51	3,541.52	7,459.02	4,574.55	4,336.66	237.89	19.230	
12,200.00	6,303.00	6,312.65	6,309.41	70.87	170.66	-90.51	3,541.52	7,459.02	4,541.80	4,302.55	239.25	18.984	
12,300.00	6,303.00	6,312.64	6,309.40	71.93	170.66	-90.51	3,541.52	7,459.02	4,511.02	4,270.42	240.60	18.749	
12,400.00	6,303.00	6,312.63	6,309.39	73.00	170.66	-90.51	3,541.52	7,459.02	4,482.27	4,240.33	241.95	18.526	
12,500.00	6,303.00	6,312.62	6,309.39	74.07	170.66	-90.51	3,541.52	7,459.02	4,455.58	4,212.30	243.28	18.314	
12,600.00	6,303.00	6,312.62	6,309.38	75.14	170.66	-90.51	3,541.52	7,459.02	4,430.98	4,186.38	244.61	18.115	
12,700.00	6,303.00	6,312.61	6,309.37	76.21	170.66	-90.51	3,541.52	7,459.02	4,408.52	4,162.60	245.92	17.927	
12,800.00	6,303.00	6,312.60	6,309.36	77.28	170.66	-90.51	3,541.52	7,459.02	4,388.22	4,141.01	247.21	17.751	
12,900.00	6,303.00	6,312.59	6,309.35	78.36	170.66	-90.51	3,541.53	7,459.02	4,370.11	4,121.64	248.48	17.588	
13,000.00	6,303.00	6,312.58	6,309.35	79.43	170.66	-90.51	3,541.53	7,459.02	4,354.23	4,104.51	249.72	17.436	
13,100.00	6,303.00	6,312.58	6,309.34	80.51	170.66	-90.51	3,541.53	7,459.02	4,340.59	4,089.65	250.94	17.297	
13,200.00	6,303.00	6,312.57	6,309.33	81.59	170.66	-90.51	3,541.53	7,459.02	4,329.22	4,077.09	252.13	17.171	
13,300.00	6,303.00	6,312.56	6,309.32	82.67	170.66	-90.51	3,541.53	7,459.02	4,320.14	4,066.85	253.28	17.056	
13,400.00	6,303.00	6,312.55	6,309.31	83.75	170.66	-90.51	3,541.53	7,459.02	4,313.35	4,058.95	254.41	16.955	
13,500.00	6,303.00	6,312.54	6,309.31	84.83	170.66	-90.51	3,541.53	7,459.02	4,308.88	4,053.39	255.49	16.865	
13,600.00	6,303.00	6,312.54	6,309.30	85.91	170.66	-90.51	3,541.53	7,459.02	4,306.72	4,050.19	256.54	16.788	
13,642.87	6,303.00	6,312.53	6,309.29	86.38	170.66	-90.51	3,541.53	7,459.02	4,306.51	4,049.54	256.97	16.759 CC	
13,700.00	6,303.00	6,312.53	6,309.29	87.00	170.66	-90.51	3,541.53	7,459.02	4,306.89	4,049.35	257.54	16.723 ES	
13,800.00	6,303.00	6,312.52	6,309.28	88.08	170.66	-90.51	3,541.53	7,459.02	4,309.37	4,050.87	258.50	16.670	
13,900.00	6,303.00	6,312.51	6,309.27	89.17	170.66	-90.51	3,541.53	7,459.02	4,314.18	4,054.75	259.42	16.630	
14,000.00	6,303.00	6,312.50	6,309.26	90.26	170.66	-90.51	3,541.53	7,459.02	4,321.29	4,060.99	260.30	16.601	
14,100.00	6,303.00	6,312.50	6,309.26	91.34	170.66	-90.51	3,541.53	7,459.02	4,330.70	4,069.58	261.12	16.585	
14,200.00	6,303.00	6,312.49	6,309.25	92.43	170.66	-90.51	3,541.53	7,459.02	4,342.40	4,080.49	261.90	16.580 SF	
14,300.00	6,303.00	6,312.48	6,309.24	93.52	170.66	-90.51	3,541.53	7,459.02	4,356.36	4,093.72	262.63	16.587	
14,400.00	6,303.00	6,312.47	6,309.23	94.61	170.66	-90.51	3,541.53	7,459.02	4,372.56	4,109.24	263.32	16.606	
14,500.00	6,303.00	6,312.46	6,309.22	95.70	170.66	-90.51	3,541.53	7,459.02	4,390.98	4,127.03	263.95	16.636	
14,600.00	6,303.00	6,312.46	6,309.22	96.79	170.66	-90.51	3,541.53	7,459.02	4,411.59	4,147.05	264.54	16.676	
14,700.00	6,303.00	6,312.45	6,309.21	97.88	170.66	-90.51	3,541.53	7,459.02	4,434.36	4,169.28	265.08	16.728	
14,800.00	6,303.00	6,312.44	6,309.20	98.98	170.66	-90.51	3,541.53	7,459.02	4,459.26	4,193.68	265.57	16.791	
14,900.00	6,303.00	6,312.43	6,309.19	100.07	170.66	-90.51	3,541.53	7,459.02	4,486.24	4,220.23	266.02	16.864	
15,000.00	6,303.00	6,312.42	6,309.18	101.16	170.66	-90.51	3,541.53	7,459.02	4,515.29	4,248.87	266.42	16.948	
15,100.00	6,303.00	6,312.42	6,309.18	102.26	170.66	-90.51	3,541.53	7,459.02	4,546.34	4,279.57	266.78	17.042	
15,200.00	6,303.00	6,312.41	6,309.17	103.35	170.66	-90.51	3,541.53	7,459.02	4,579.37	4,312.28	267.09	17.145	
15,300.00	6,303.00	6,312.40	6,309.16	104.45	170.66	-90.51	3,541.53	7,459.02	4,614.33	4,346.97	267.36	17.259	
15,400.00	6,303.00	6,312.39	6,309.15	105.55	170.66	-90.51	3,541.53	7,459.02	4,651.18	4,383.59	267.60	17.381	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc Only

Offset Site Error: 0.00 usft

Survey Program: 155-INC-ONLY

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,500.00	6,303.00	6,312.38	6,309.14	106.64	170.66	-90.51	3,541.53	7,459.02	4,689.88	4,422.08	267.79	17.513	
15,600.00	6,303.00	6,312.38	6,309.14	107.74	170.66	-90.51	3,541.53	7,459.02	4,730.37	4,462.42	267.95	17.654	
15,700.00	6,303.00	6,312.37	6,309.13	108.84	170.66	-90.51	3,541.53	7,459.02	4,772.61	4,504.54	268.07	17.804	
15,800.00	6,303.00	6,312.36	6,309.12	109.94	170.66	-90.51	3,541.53	7,459.02	4,816.56	4,548.40	268.16	17.962	
15,900.00	6,303.00	6,312.35	6,309.11	111.03	170.66	-90.51	3,541.53	7,459.02	4,862.16	4,593.95	268.22	18.128	
16,000.00	6,303.00	6,312.34	6,309.10	112.13	170.66	-90.51	3,541.53	7,459.02	4,909.38	4,641.14	268.24	18.302	
16,100.00	6,303.00	6,312.34	6,309.10	113.23	170.65	-90.51	3,541.53	7,459.02	4,958.17	4,689.93	268.24	18.484	
16,200.00	6,303.00	6,312.33	6,309.09	114.33	170.65	-90.51	3,541.53	7,459.02	5,008.48	4,740.27	268.21	18.674	
16,300.00	6,303.00	6,312.32	6,309.08	115.43	170.65	-90.51	3,541.53	7,459.02	5,060.27	4,792.11	268.16	18.870	
16,400.00	6,303.00	6,312.31	6,309.07	116.53	170.65	-90.51	3,541.53	7,459.02	5,113.49	4,845.41	268.08	19.074	
16,500.00	6,303.00	6,312.30	6,309.06	117.64	170.65	-90.51	3,541.53	7,459.02	5,168.09	4,900.11	267.98	19.285	
16,600.00	6,303.00	6,312.30	6,309.06	118.74	170.65	-90.51	3,541.53	7,459.02	5,224.04	4,956.18	267.87	19.502	
16,700.00	6,303.00	6,312.29	6,309.05	119.84	170.65	-90.51	3,541.53	7,459.02	5,281.29	5,013.56	267.73	19.726	
16,800.00	6,303.00	6,312.28	6,309.04	120.94	170.65	-90.51	3,541.53	7,459.02	5,339.80	5,072.23	267.57	19.956	
16,890.04	6,303.00	6,312.27	6,309.03	121.94	170.65	-90.51	3,541.53	7,459.02	5,393.53	5,126.11	267.42	20.169	

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W13_GOVERNMENT AB #008_1527863 - Inc Only - Inc Only — **Offset Site Error:** 0.00 usft

Survey Program: 150-INC-ONLY — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,000.00	6,303.00	6,347.97	6,346.01	68.74	147.90	-91.02	3,400.04	8,805.61	5,119.43	4,912.19	207.23	24.704	
12,100.00	6,303.00	6,347.95	6,345.99	69.80	147.90	-91.02	3,400.04	8,805.61	5,061.70	4,853.11	208.60	24.266	
12,200.00	6,303.00	6,347.93	6,345.97	70.87	147.90	-91.02	3,400.04	8,805.61	5,005.31	4,795.33	209.98	23.837	
12,300.00	6,303.00	6,347.91	6,345.95	71.93	147.90	-91.02	3,400.04	8,805.61	4,950.30	4,738.91	211.38	23.419	
12,400.00	6,303.00	6,347.89	6,345.93	73.00	147.90	-91.02	3,400.04	8,805.61	4,896.71	4,683.90	212.81	23.010	
12,500.00	6,303.00	6,347.88	6,345.91	74.07	147.90	-91.02	3,400.04	8,805.61	4,844.59	4,630.34	214.25	22.612	
12,600.00	6,303.00	6,347.86	6,345.89	75.14	147.90	-91.02	3,400.04	8,805.61	4,793.99	4,578.28	215.71	22.225	
12,700.00	6,303.00	6,347.84	6,345.87	76.21	147.90	-91.02	3,400.04	8,805.61	4,744.96	4,527.78	217.18	21.848	
12,800.00	6,303.00	6,347.82	6,345.86	77.28	147.90	-91.02	3,400.04	8,805.61	4,697.54	4,478.88	218.67	21.483	
12,900.00	6,303.00	6,347.80	6,345.84	78.36	147.90	-91.02	3,400.04	8,805.61	4,651.80	4,431.64	220.16	21.129	
13,000.00	6,303.00	6,347.78	6,345.82	79.43	147.90	-91.02	3,400.04	8,805.61	4,607.77	4,386.10	221.67	20.787	
13,100.00	6,303.00	6,347.76	6,345.80	80.51	147.90	-91.02	3,400.04	8,805.61	4,565.50	4,342.32	223.18	20.457	
13,200.00	6,303.00	6,347.75	6,345.78	81.59	147.90	-91.02	3,400.04	8,805.61	4,525.05	4,300.36	224.69	20.139	
13,300.00	6,303.00	6,347.73	6,345.76	82.67	147.90	-91.02	3,400.04	8,805.61	4,486.47	4,260.26	226.21	19.833	
13,400.00	6,303.00	6,347.71	6,345.74	83.75	147.89	-91.02	3,400.04	8,805.61	4,449.80	4,222.08	227.72	19.540	
13,500.00	6,303.00	6,347.69	6,345.73	84.83	147.89	-91.02	3,400.04	8,805.61	4,415.09	4,185.86	229.23	19.260	
13,600.00	6,303.00	6,347.67	6,345.71	85.91	147.89	-91.02	3,400.04	8,805.61	4,382.39	4,151.66	230.73	18.994	
13,700.00	6,303.00	6,347.65	6,345.69	87.00	147.89	-91.02	3,400.05	8,805.61	4,351.74	4,119.52	232.22	18.740	
13,800.00	6,303.00	6,347.63	6,345.67	88.08	147.89	-91.02	3,400.05	8,805.61	4,323.18	4,089.49	233.69	18.500	
13,900.00	6,303.00	6,347.62	6,345.65	89.17	147.89	-91.02	3,400.05	8,805.61	4,296.77	4,061.62	235.15	18.273	
14,000.00	6,303.00	6,347.60	6,345.63	90.26	147.89	-91.02	3,400.05	8,805.61	4,272.53	4,035.95	236.58	18.060	
14,100.00	6,303.00	6,347.58	6,345.61	91.34	147.89	-91.01	3,400.05	8,805.61	4,250.51	4,012.52	237.99	17.860	
14,200.00	6,303.00	6,347.56	6,345.60	92.43	147.89	-91.01	3,400.05	8,805.61	4,230.73	3,991.37	239.36	17.675	
14,300.00	6,303.00	6,347.54	6,345.58	93.52	147.89	-91.01	3,400.05	8,805.61	4,213.24	3,972.53	240.71	17.503	
14,400.00	6,303.00	6,347.52	6,345.56	94.61	147.89	-91.01	3,400.05	8,805.61	4,198.06	3,956.04	242.02	17.346	
14,500.00	6,303.00	6,347.50	6,345.54	95.70	147.89	-91.01	3,400.05	8,805.61	4,185.21	3,941.92	243.29	17.202	
14,600.00	6,303.00	6,347.49	6,345.52	96.79	147.89	-91.01	3,400.05	8,805.61	4,174.72	3,930.20	244.52	17.073	
14,700.00	6,303.00	6,347.47	6,345.50	97.88	147.89	-91.01	3,400.05	8,805.61	4,166.60	3,920.90	245.71	16.958	
14,800.00	6,303.00	6,347.45	6,345.48	98.98	147.89	-91.01	3,400.05	8,805.61	4,160.88	3,914.03	246.84	16.856	
14,900.00	6,303.00	6,347.43	6,345.46	100.07	147.89	-91.01	3,400.05	8,805.61	4,157.55	3,909.61	247.93	16.769	
14,988.51	6,303.00	6,347.41	6,345.45	101.04	147.89	-91.01	3,400.05	8,805.61	4,156.60	3,907.75	248.85	16.703 CC	
15,000.00	6,303.00	6,347.41	6,345.45	101.16	147.89	-91.01	3,400.05	8,805.61	4,156.62	3,907.65	248.97	16.696 ES	
15,100.00	6,303.00	6,347.39	6,345.43	102.26	147.89	-91.01	3,400.05	8,805.61	4,158.10	3,908.15	249.95	16.636	
15,200.00	6,303.00	6,347.37	6,345.41	103.35	147.89	-91.01	3,400.05	8,805.61	4,161.98	3,911.11	250.87	16.590	
15,300.00	6,303.00	6,347.36	6,345.39	104.45	147.89	-91.01	3,400.05	8,805.61	4,168.26	3,916.52	251.74	16.558	
15,400.00	6,303.00	6,347.34	6,345.37	105.55	147.89	-91.01	3,400.05	8,805.61	4,176.92	3,924.37	252.55	16.539	
15,500.00	6,303.00	6,347.32	6,345.35	106.64	147.89	-91.01	3,400.05	8,805.61	4,187.96	3,934.65	253.30	16.534 SF	
15,600.00	6,303.00	6,347.30	6,345.34	107.74	147.89	-91.01	3,400.05	8,805.61	4,201.34	3,947.35	253.99	16.541	
15,700.00	6,303.00	6,347.28	6,345.32	108.84	147.88	-91.01	3,400.05	8,805.61	4,217.06	3,962.43	254.62	16.562	
15,800.00	6,303.00	6,347.26	6,345.30	109.94	147.88	-91.01	3,400.05	8,805.61	4,235.08	3,979.88	255.20	16.595	
15,900.00	6,303.00	6,347.24	6,345.28	111.03	147.88	-91.01	3,400.05	8,805.61	4,255.37	3,999.66	255.71	16.641	
16,000.00	6,303.00	6,347.23	6,345.26	112.13	147.88	-91.01	3,400.05	8,805.61	4,277.90	4,021.73	256.17	16.699	
16,100.00	6,303.00	6,347.21	6,345.24	113.23	147.88	-91.01	3,400.05	8,805.61	4,302.65	4,046.08	256.57	16.770	
16,200.00	6,303.00	6,347.19	6,345.22	114.33	147.88	-91.01	3,400.05	8,805.61	4,329.56	4,072.64	256.91	16.852	
16,300.00	6,303.00	6,347.17	6,345.21	115.43	147.88	-91.01	3,400.05	8,805.61	4,358.60	4,101.39	257.20	16.946	
16,400.00	6,303.00	6,347.15	6,345.19	116.53	147.88	-91.01	3,400.05	8,805.61	4,389.72	4,132.28	257.44	17.051	
16,500.00	6,303.00	6,347.13	6,345.17	117.64	147.88	-91.01	3,400.05	8,805.61	4,422.89	4,165.26	257.63	17.168	
16,600.00	6,303.00	6,347.11	6,345.15	118.74	147.88	-91.01	3,400.05	8,805.61	4,458.05	4,200.28	257.77	17.295	
16,700.00	6,303.00	6,347.10	6,345.13	119.84	147.88	-91.01	3,400.05	8,805.61	4,495.17	4,237.31	257.86	17.432	
16,800.00	6,303.00	6,347.08	6,345.11	120.94	147.88	-91.01	3,400.06	8,805.61	4,534.19	4,276.28	257.91	17.580	
16,890.04	6,303.00	6,347.06	6,345.10	121.94	147.88	-91.01	3,400.06	8,805.61	4,570.91	4,312.99	257.92	17.722	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W17_GOVERNMENT AB FEDERAL #013_1540920 - MWD - MWD

Offset Site Error: 0.00 usft

Survey Program: 267-OWSG MWD Rev 5

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,400.00	6,303.00	6,330.47	6,327.98	105.55	25.41	-90.83	2,280.66	10,062.74	3,142.44	3,015.28	127.16	24.713	
15,500.00	6,303.00	6,330.71	6,328.22	106.64	25.41	-90.84	2,280.65	10,062.74	3,117.25	2,988.26	128.99	24.167	
15,600.00	6,303.00	6,330.95	6,328.45	107.74	25.41	-90.84	2,280.65	10,062.74	3,095.10	2,964.34	130.76	23.671	
15,700.00	6,303.00	6,331.19	6,328.69	108.84	25.41	-90.85	2,280.65	10,062.74	3,076.04	2,943.59	132.44	23.226	
15,800.00	6,303.00	6,331.42	6,328.93	109.94	25.41	-90.85	2,280.64	10,062.74	3,060.12	2,926.09	134.04	22.830	
15,900.00	6,303.00	6,331.66	6,329.16	111.03	25.41	-90.85	2,280.64	10,062.74	3,047.41	2,911.87	135.54	22.484	
16,000.00	6,303.00	6,331.89	6,329.40	112.13	25.41	-90.86	2,280.64	10,062.74	3,037.94	2,901.01	136.93	22.186	
16,100.00	6,303.00	6,332.13	6,329.63	113.23	25.41	-90.86	2,280.63	10,062.74	3,031.74	2,893.52	138.21	21.935	
16,200.00	6,303.00	6,332.37	6,329.87	114.33	25.41	-90.87	2,280.63	10,062.75	3,028.83	2,889.45	139.38	21.731	
16,238.20	6,303.00	6,332.46	6,329.96	114.75	25.41	-90.87	2,280.63	10,062.75	3,028.59	2,888.80	139.79	21.665	CC, ES
16,300.00	6,303.00	6,332.60	6,330.10	115.43	25.41	-90.87	2,280.62	10,062.75	3,029.22	2,888.80	140.42	21.573	
16,400.00	6,303.00	6,332.84	6,330.34	116.53	25.41	-90.88	2,280.62	10,062.75	3,032.90	2,891.57	141.33	21.459	
16,500.00	6,303.00	6,333.07	6,330.57	117.64	25.40	-90.88	2,280.62	10,062.75	3,039.88	2,897.76	142.12	21.389	
16,600.00	6,303.00	6,333.31	6,330.81	118.74	25.40	-90.89	2,280.61	10,062.75	3,050.12	2,907.34	142.78	21.362	SF
16,700.00	6,303.00	6,333.54	6,331.04	119.84	25.40	-90.89	2,280.61	10,062.75	3,063.59	2,920.28	143.31	21.377	
16,800.00	6,303.00	6,333.77	6,331.28	120.94	25.40	-90.89	2,280.61	10,062.75	3,080.25	2,936.54	143.71	21.434	
16,890.04	6,303.00	6,333.98	6,331.49	121.94	25.40	-90.90	2,280.60	10,062.75	3,097.94	2,953.97	143.97	21.519	

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

COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Offset Design: Koala 9 Fed Com Offsets - W18_GOVERNMENT AB FEDERAL #012_1541049 - MWD - MWD

Offset Site Error: 0.00 usft

Survey Program: 144-OWSG MWD Rev 5

Rule Assigned:

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
15,000.00	6,303.00	6,784.00	6,661.38	101.16	24.55	-96.86	2,333.48	8,986.56	3,114.70	2,989.58	125.12	24.894	
15,100.00	6,303.00	6,784.00	6,661.38	102.26	24.55	-96.86	2,333.48	8,986.56	3,111.09	2,984.98	126.11	24.670	
15,162.40	6,303.00	6,784.00	6,661.38	102.94	24.55	-96.86	2,333.48	8,986.56	3,110.46	2,983.79	126.67	24.555	CC
15,200.00	6,303.00	6,784.00	6,661.38	103.35	24.55	-96.86	2,333.48	8,986.56	3,110.69	2,983.70	126.99	24.495	ES
15,300.00	6,303.00	6,784.00	6,661.38	104.45	24.55	-96.86	2,333.48	8,986.56	3,113.50	2,985.74	127.77	24.369	
15,400.00	6,303.00	6,784.00	6,661.38	105.55	24.55	-96.86	2,333.48	8,986.56	3,119.52	2,991.09	128.43	24.289	
15,500.00	6,303.00	6,784.00	6,661.38	106.64	24.55	-96.86	2,333.48	8,986.56	3,128.73	2,999.75	128.99	24.257	SF
15,600.00	6,303.00	6,784.00	6,661.38	107.74	24.55	-96.86	2,333.48	8,986.56	3,141.09	3,011.67	129.43	24.269	
15,700.00	6,303.00	6,784.00	6,661.38	108.84	24.55	-96.86	2,333.48	8,986.56	3,156.58	3,026.82	129.76	24.326	
15,800.00	6,303.00	6,784.00	6,661.38	109.94	24.55	-96.86	2,333.48	8,986.56	3,175.14	3,045.15	129.99	24.426	
15,900.00	6,303.00	6,784.00	6,661.38	111.03	24.55	-96.86	2,333.48	8,986.56	3,196.72	3,066.61	130.12	24.568	
16,000.00	6,303.00	6,784.00	6,661.38	112.13	24.55	-96.86	2,333.48	8,986.56	3,221.27	3,091.13	130.14	24.752	
16,100.00	6,303.00	6,784.00	6,661.38	113.23	24.55	-96.86	2,333.48	8,986.56	3,248.70	3,118.63	130.07	24.976	

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

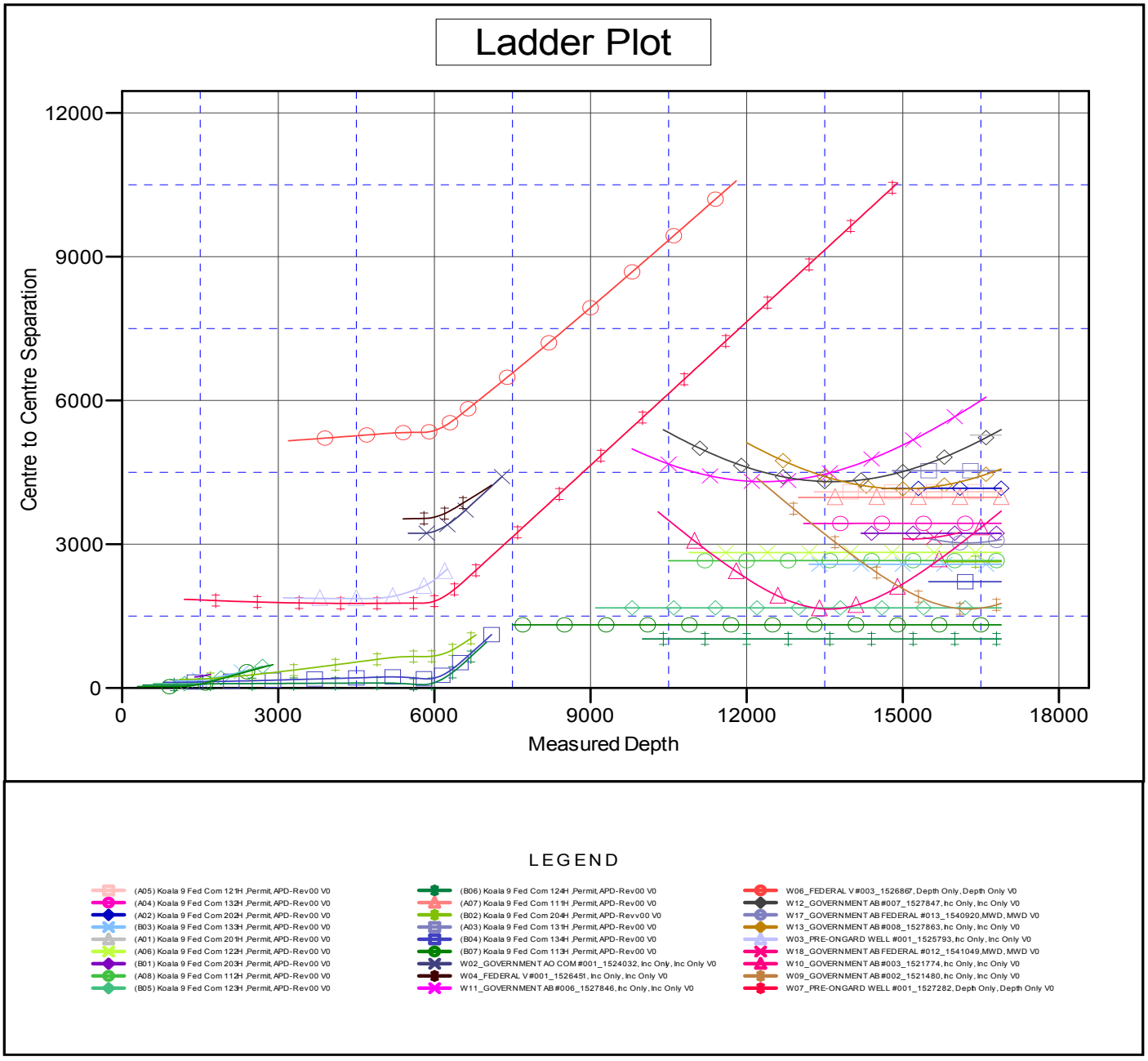
COLGATE ENERGY

Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to 3274+30 @ 3304.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.33333334

Coordinates are relative to: (B08) Koala 9 Fed Com 114H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.08°



COLGATE ENERGY

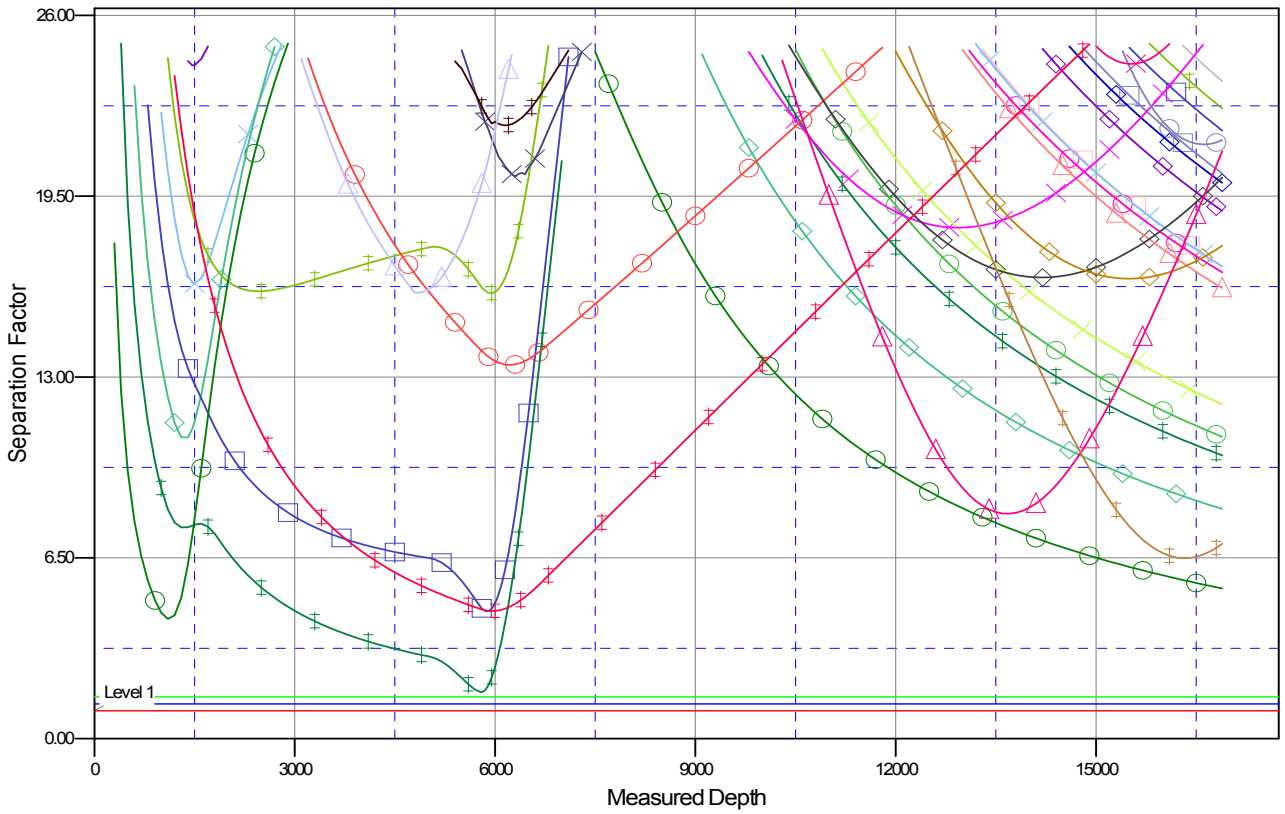
Anticollision Report

Company:	Colgate Energy	**Local Co-ordinate Reference:**	Well (B08) Koala 9 Fed Com 114H
Project:	(Permit) Eddy County, NM (83-NME)	**TVD Reference:**	3274+30 @ 3304.00usft
Reference Site:	(Permit) Koala 9 Fed Com	**MD Reference:**	3274+30 @ 3304.00usft
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	(B08) Koala 9 Fed Com 114H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Permit	**Database:**	EDM 5000.14 Single User Db
Reference Design:	APD-Rev00	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to 3274+30 @ 3304.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -104.33333334

Coordinates are relative to: (B08) Koala 9 Fed Com 114H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.08°

Separation Factor Plot



LEGEND

(A05) Koala 9 Fed Com 121H ,Permit, APD-Rev00 V0
(A04) Koala 9 Fed Com 132H ,Permit, APD-Rev00 V0
(A02) Koala 9 Fed Com 202H ,Permit, APD-Rev00 V0
(B03) Koala 9 Fed Com 133H ,Permit, APD-Rev00 V0
(A01) Koala 9 Fed Com 201H ,Permit, APD-Rev00 V0
(A06) Koala 9 Fed Com 122H ,Permit, APD-Rev00 V0
(B01) Koala 9 Fed Com 203H ,Permit, APD-Rev00 V0
(A08) Koala 9 Fed Com 112H ,Permit, APD-Rev00 V0
(B05) Koala 9 Fed Com 123H ,Permit, APD-Rev00 V0
(B06) Koala 9 Fed Com 124H ,Permit, APD-Rev00 V0
(A07) Koala 9 Fed Com 111H ,Permit, APD-Rev00 V0
(B02) Koala 9 Fed Com 204H ,Permit, APD-Revv00 V0
(A03) Koala 9 Fed Com 131H ,Permit, APD-Rev00 V0
(B04) Koala 9 Fed Com 134H ,Permit, APD-Rev00 V0
(B07) Koala 9 Fed Com 113H ,Permit, APD-Rev00 V0
W02_GOVERNMENT AO COM #001_1524032, Inc Only, Inc Only V0
W04_FEDERAL V #001_1526451, Inc Only, Inc Only V0
W11_GOVERNMENT AB #006_1527846, Inc Only, Inc Only V0
W06_FEDERAL V #003_1526867, Depth Only, Depth Only V0
W12_GOVERNMENT AB #007_1527847, Inc Only, Inc Only V0
W17_GOVERNMENT AB FEDERAL #013_1540920,MWD, MWD V0
W13_GOVERNMENT AB #008_1527863, Inc Only, Inc Only V0
W03_PRE-ONGARD WELL #001_1525793, Inc Only, Inc Only V0
W18_GOVERNMENT AB FEDERAL #012_1541049,MWD, MWD V0
W10_GOVERNMENT AB #003_1521774, Inc Only, Inc Only V0
W09_GOVERNMENT AB #002_1521480, Inc Only, Inc Only V0
W07_PRE-ONGARD WELL #001_1527282, Depth Only, Depth Only V0

Permian Resources - Koala 9 Fed Com 114H

1. Geologic Formations

Formation	Elevation	TVD	Target
Rustler	-3077	227	No
Top of Salt	-2936	368	No
Capitan	NP	NP	No
Tansill	-2600	704	No
Yates	-2525	779	No
Seven Rivers	-2150	1154	No
Queen	-1480	1824	No
Grayburg	-1250	2054	No
San Andres	-900	2404	No
Delaware Mountain Group	-325	2979	No
Bone Spring Lime	1350	4654	No
1st Bone Spring Sand	2800	6104	Yes
2nd Bone Spring Sand	NP	NP	No
3rd Bone Spring Sand	NP	NP	No
Wolfcamp XY	NP	NP	No

2. Blowout Prevention

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12.25	13-5/8”	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
8.75	13-5/8”	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		

Equipment: BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing;

Requesting Variance? YES
Variance request: Flex hose and offline cement variances, see attachments in section 8.
Testing Procedure: The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Choke Diagram Attachemnt: 5 M Choe Manifold
BOP Diagram Attachment: BOP Schematic

3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	378	0	378	378	J55	54.5	BTC	6.05	3.07	Dry	7.54	Dry	7.07
Intermediate	12.25	9.625	0	2929	0	2929	2929	J55	36	BTC	3.63	1.83	Dry	3.11	Dry	2.75
Production	8.75	5.5	0	6385	0	6221	6385	P110RY	17	GeoConn	2.28	2.38	Dry	2.64	Dry	2.64
Production	7.875	5.5	6385	16890	6221	6303	10505	P110RY	17	GeoConn	2.28	2.38	Dry	2.64	Dry	2.64
								BLM Min Safety Factor			1.125	1		1.6		1.6

Non API casing spec sheets and casing design assumptions attached.

4. Cement

String	Lead/Tail	Top MD	Bottom MD	Quanity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	378	300	1.34	14.8	400	50%	Class C	Accelerator
Intermediate	Lead	0	2340	510	2.08	12.7	1060	50%	Class C	Salt, Extender, and LCM
Intermediate	Tail	2340	2929	210	1.34	14.8	280	50%	Class C	Accelerator
Production	Lead	2429	5785	480	2.41	11.5	1150	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	5785	16890	1430	1.73	12.5	2470	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

5. Circulating Medium

Mud System Type: Closed
Will an air or gas system be used: No
Describe what will be on location to control well or mitigate oter conditions: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

Cuttings Volume: 7720 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	378	Water Based Mud	8.6	9.5
378	2929	Salt Saturated	10	10
2929	6385	Brine	9	10
6385	16890	OBM	9	10

6. Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:
Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.
List of open and cased hole logs run in the well:
DIRECTIONAL SURVEY,GAMMA RAY LOG,
Coring operation description for the well:
N/A

7. Pressure

Anticipated Bottom Hole Pressure	3280	psi
Anticipated Surface Pressure	1890.9	psi
Anticipated Bottom Hole Temperature	122	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

8. Other Information

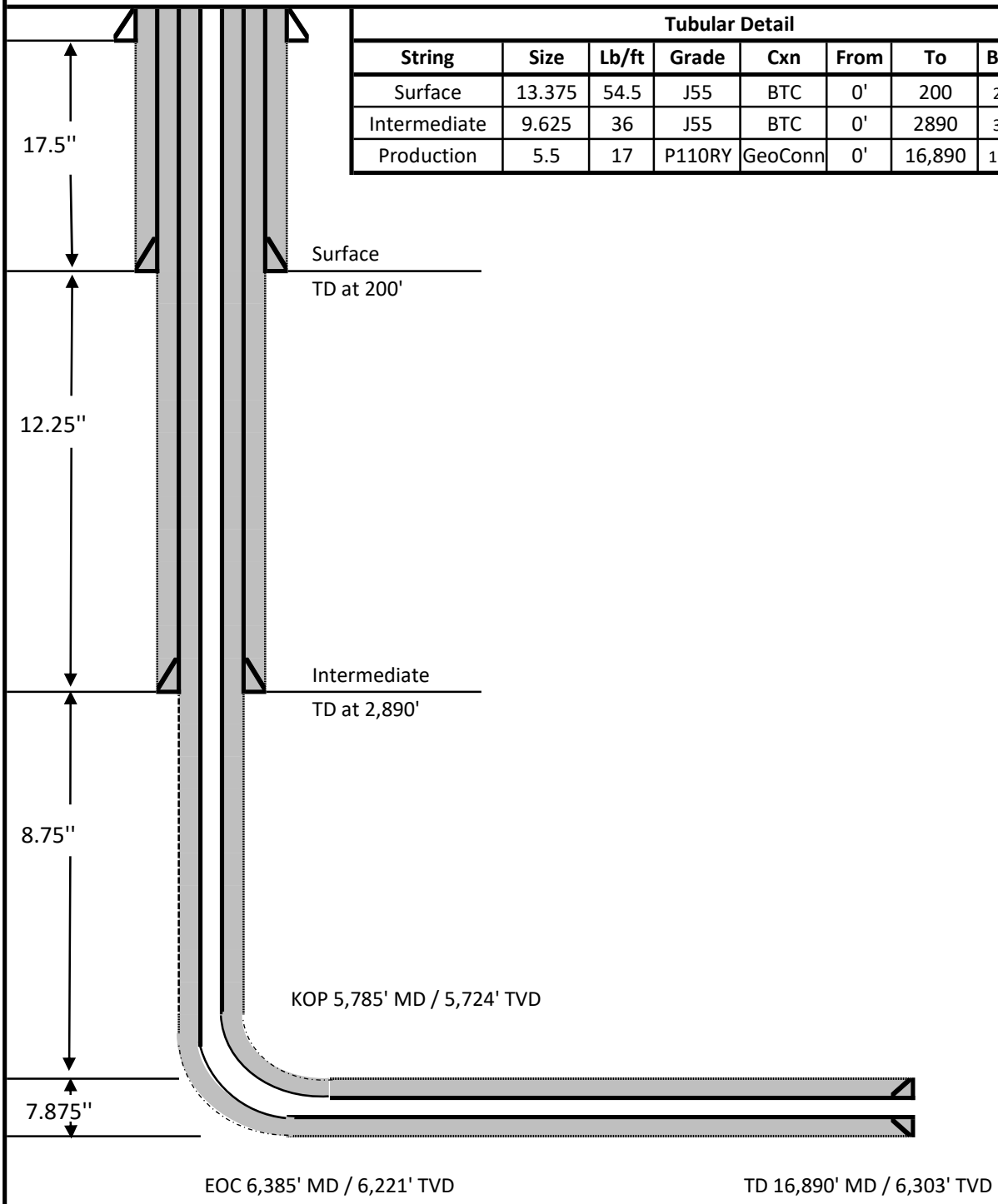
Well Plan and AC Report: attached
Batching Drilling Procedure: attached
WBD: attached
Flex Hose Specs: attached
Offline Cementing Procedure Attached:

Permian Resources

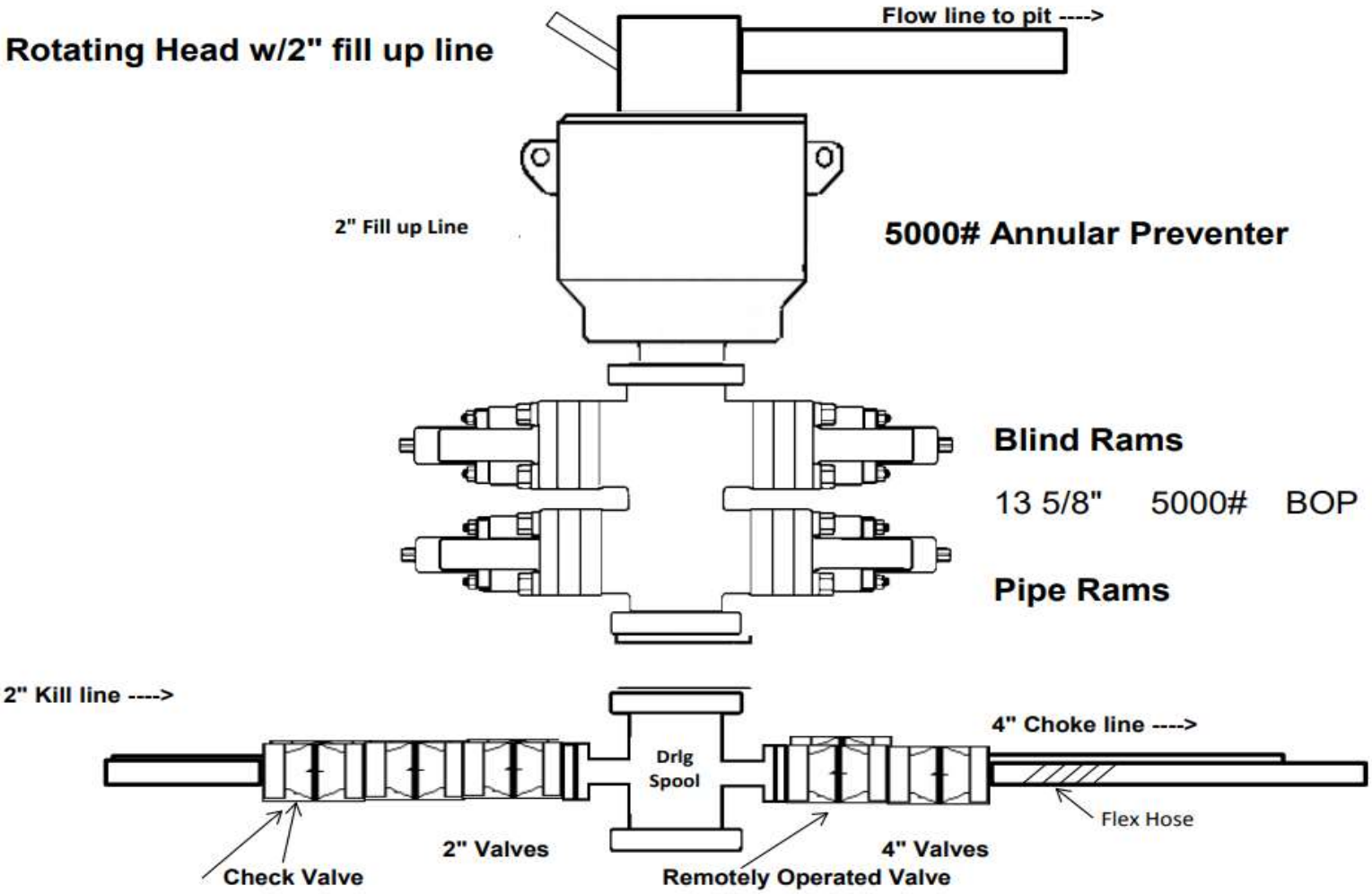
Well: Koala 9 Fed Com 114H
State New Mexico **County:** Eddy
FM Target: 1st Bone Spring Sand
Location: Lot P, Section 8, T20S, R28E, 1144' FSL, 105' FEL
BHL: Lot P, Section 10, T20S, R28E, 330' FSL, 10' FEL
KB Elev: 3304 **KB:** 30 **GL Elev:** 3274

Tubular Detail

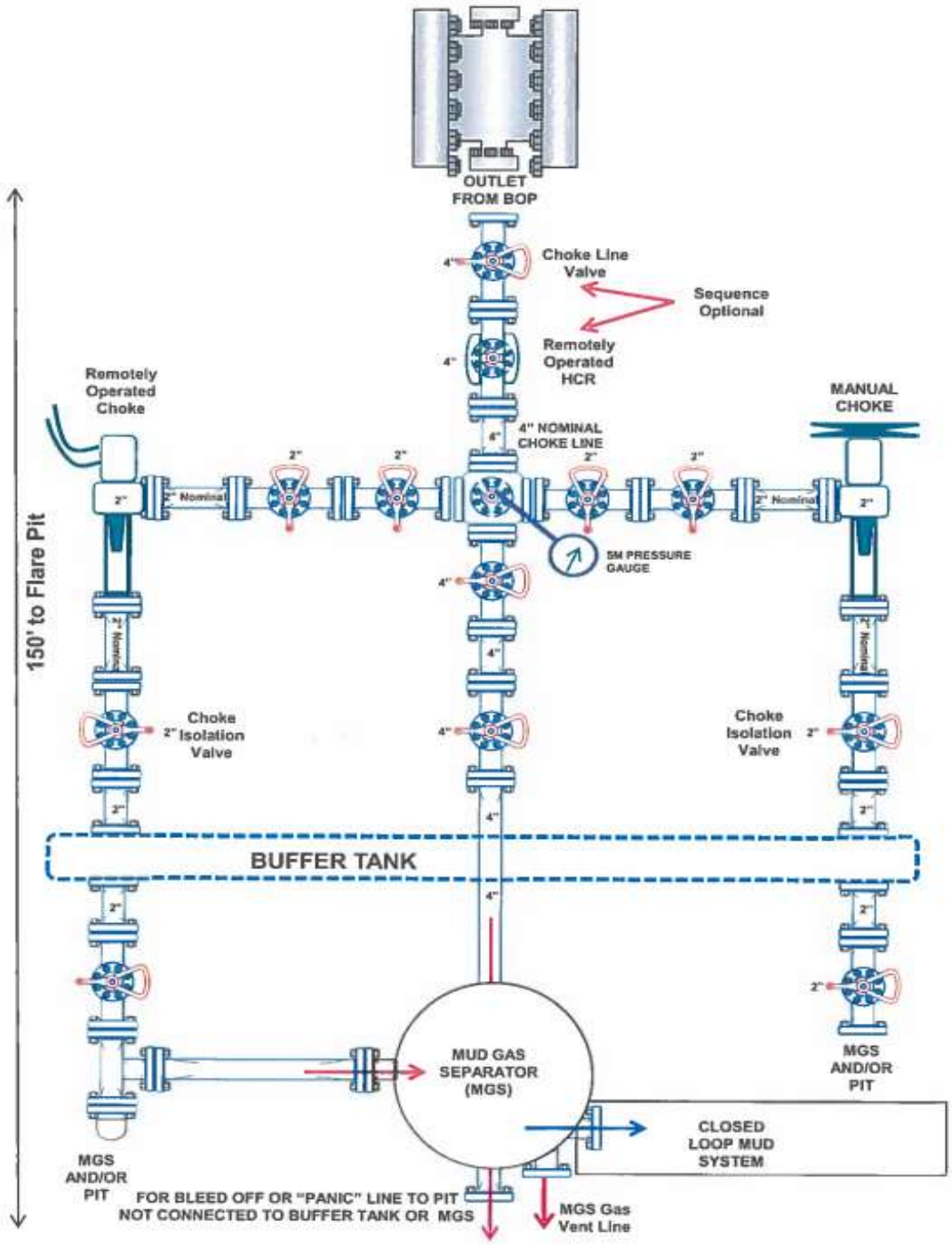
String	Size	Lb/ft	Grade	Cxn	From	To	Burst	Cllps
Surface	13.375	54.5	J55	BTC	0'	200	2740	1,130
Intermediate	9.625	36	J55	BTC	0'	2890	3520	2,020
Production	5.5	17	P110RY	GeoConn	0'	16,890	11550	7,480



5,000 psi BOP Schematic



5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



Continental
ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 9 / 113

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE					CERT. N°:	504	
PURCHASER:	ContiTech Oil & Marine Corp.				P.O. N°:	4500409659	
CONTITECH RUBBER order N°:	538236		HOSE TYPE:	3" ID	Choke and Kill Hose		
HOSE SERIAL N°:	67255		NOMINAL / ACTUAL LENGTH:		10,67 m / 10,77 m		
W.P. 68,9 MPa	10000 psi		T.P. 103,4 MPa	15000 psi	Duration:	60	min.

Pressure test with water at
ambient tempecature

See attachment. (1 page)

↑ 10 mm = 10 Min.
→ 10 mm = 20 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	9251	9254	AISI 4130	A0579N
4 1/16" 10K API b.w. Flange end			AISI 4130	035608

Not Designed For Well Testing **API Spec 16 C**

Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

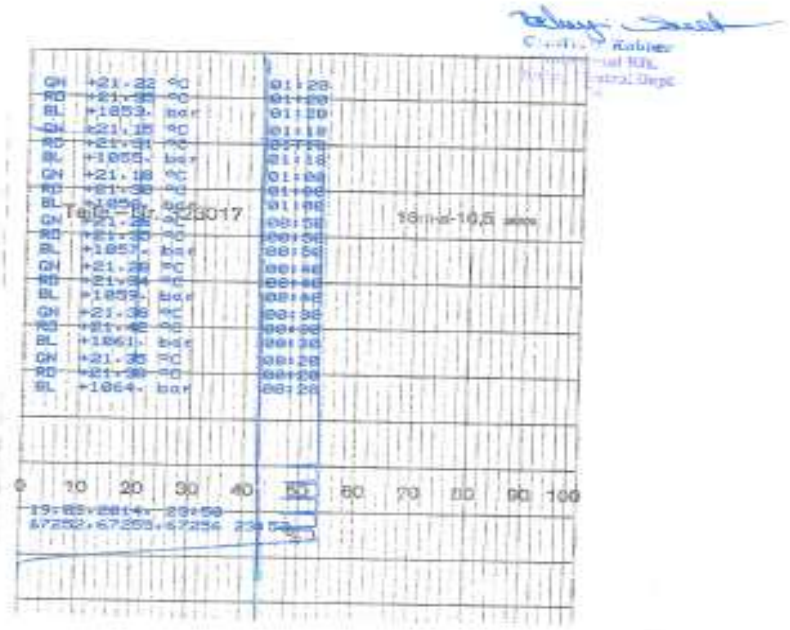
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

COUNTRY OF ORIGIN HUNGARY/EU

Date:	Inspector	Quality Control
20. March 2014.		

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 501, 504, 505

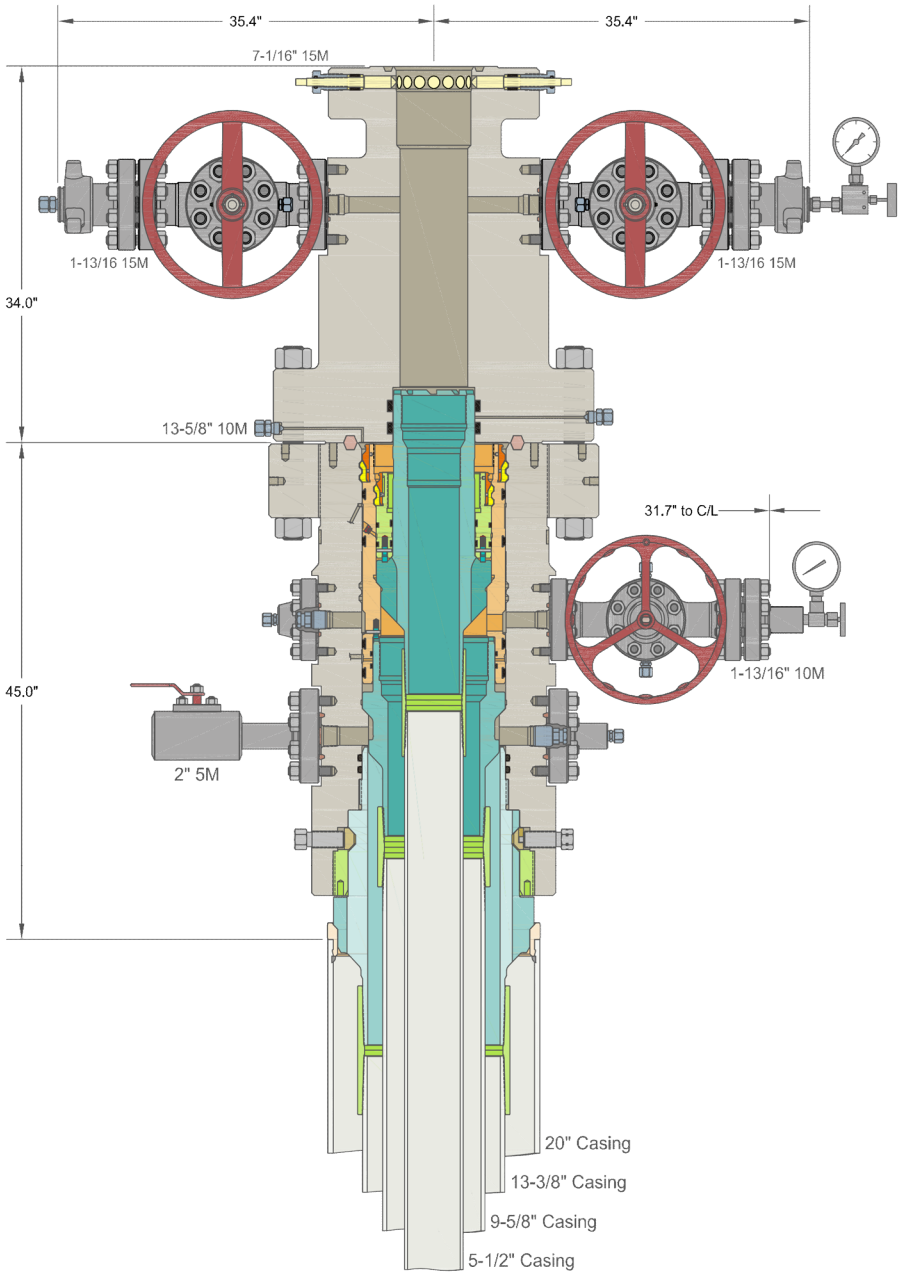
Page: 1 / 1



Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

Printed: TIRETECH/ICsontosG - 2014.03.10 15:22:17



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	CENTENNIAL RESOURCE DEVELOPMENT LEE CO, NM		
20" x 13-3/8" x 9-5/8" x 5-1/2" 10M MBU-3T-CFL-R-DBLO System With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head, 20" Landing Ring & Pin Down Mandrel Casing Hangers	DRAWN	DLE	10JUN20
	APPRV		
	DRAWING NO.	HBE0000338	

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

1) Burst Design Loads
   a) Displacement to Gas
      (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

(2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.

2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

<u>Intermediate or Intermediate II</u>

1) Burst Design Loads
   a) Gas Kick Profile
      (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
   b) Lost Returns with Mud Drop
      (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

1) Burst Design Loads
   a) Injection Down Casing
      (1) Internal: Surface pressure plus injection fluid gradient.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   b) Casing Pressure Test (Drilling)
      (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
      (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
   c) Casing Pressure Test (Production)
      (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
   d) Tubing Leak
      (1) Internal: SITP plus a packer fluid gradient to the top of packer.
      (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
2) Collapse Loads
   a) Cementing
      (1) Internal: Displacement fluid density.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
   b) Full Evacuation
      (1) Internal: Full void pipe.
      (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
3) Tension Loads
   a) Overpull Force
      1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
   b) Green Cement Casing Test
      1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources
Multi-Well Pad Batch Drilling Procedure

Surface Casing - PR intends to Batch set all 13-3/8" casing to a depth approved in the APD. 17-1/2" Surface Holes will be batch drilled by a rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill 17-1/2" Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land 13-3/8" 54.5# J55 BTC casing see Illustration 1-1 Below to depth approved in APD.
3. Set packoff and test to 5k psi
4. Offline Cement
5. Install wellhead with pressure gauge and nightcap. Nightcap is shown on final wellhead Stack up Illustration #2-2.
6. Skid Rig to adjacent well to drill Surface hole.
7. Surface casing test will be performed by the rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is

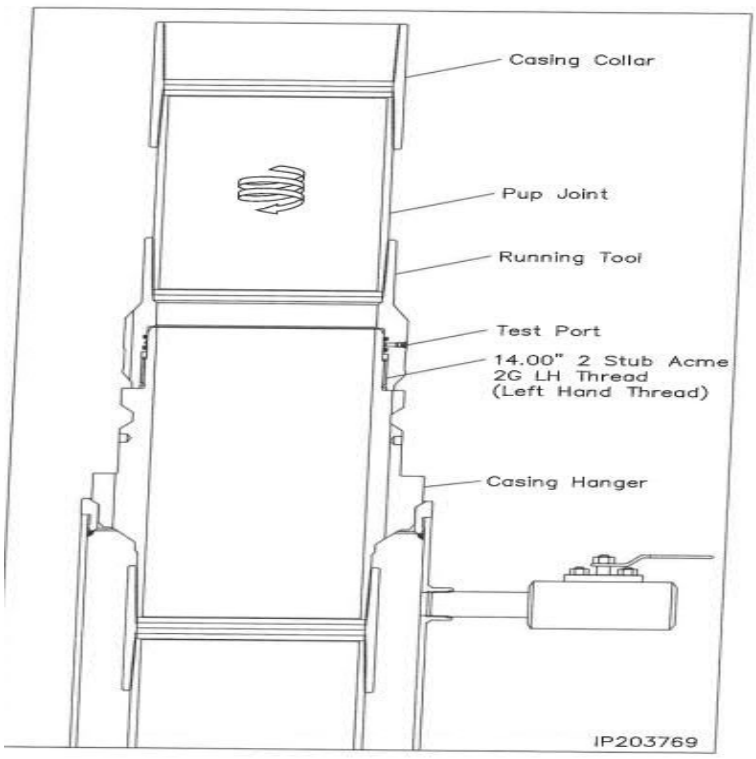


Illustration 1-1

Intermediate Casing – PR intends to Batch set all intermediate casing strings to a depth approved in the APD, typically set into Lamar. 12-1/4" Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out 13-3/8" shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 5,000 psi for 15 minutes. Nightcap shown on final wellhead stack up illustration 2-2 on page 3.
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

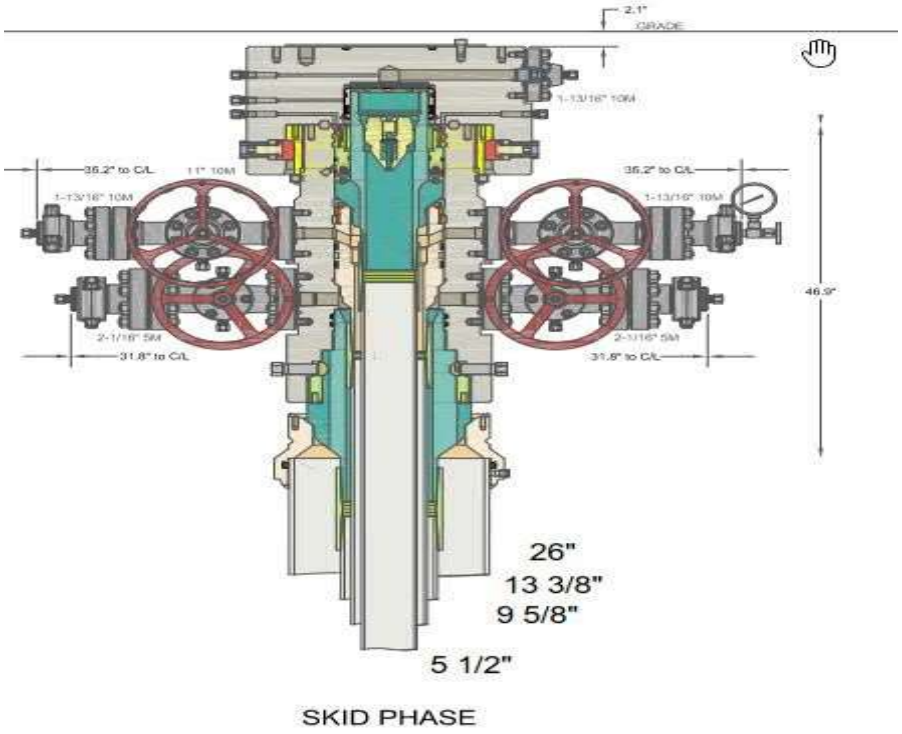


Illustration 2-2

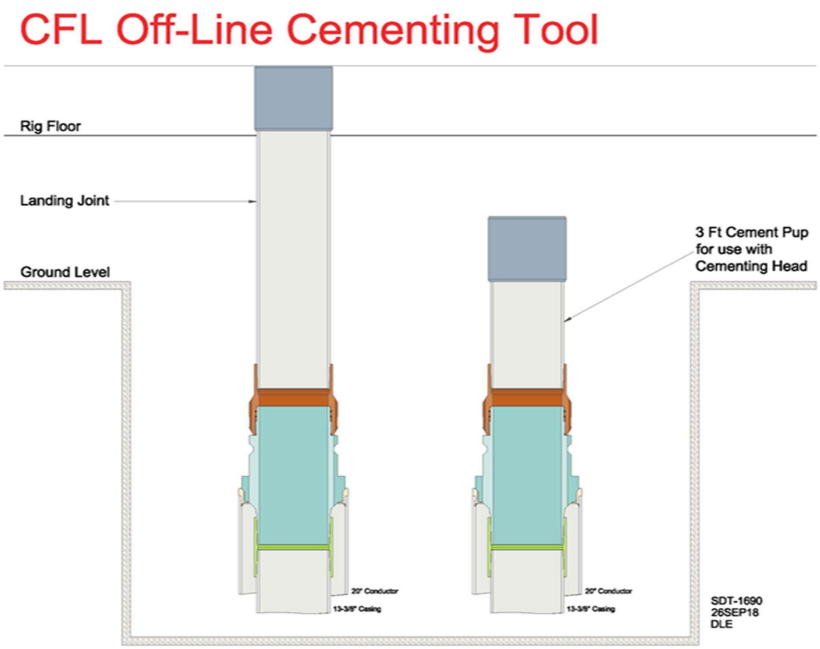
Production Casing – PR intends to Batch set all Production casings with Rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Big Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run 51/2" Production Casing.
6. Remove wear bushing then run 5-1/2" production casing to TD landing casing mandrel in wellhead.
7. Cement 5-1/2" Production string with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 5,000psi for 15 minutes.
9. Install BPV in 5-1/2" mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.

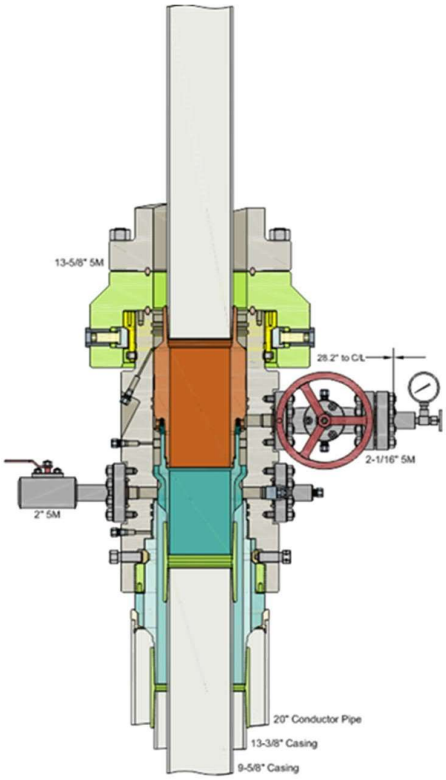
Permian Resources Offline Cementing Procedure
13-3/8" & 9-5/8" Casing

1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
    a) If well is not static use the casing outlet valves to kill well
    b) Drillers method will be used in well control event
    c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    d) Kill mud will be circulated once influx is circulated out of hole
    e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.

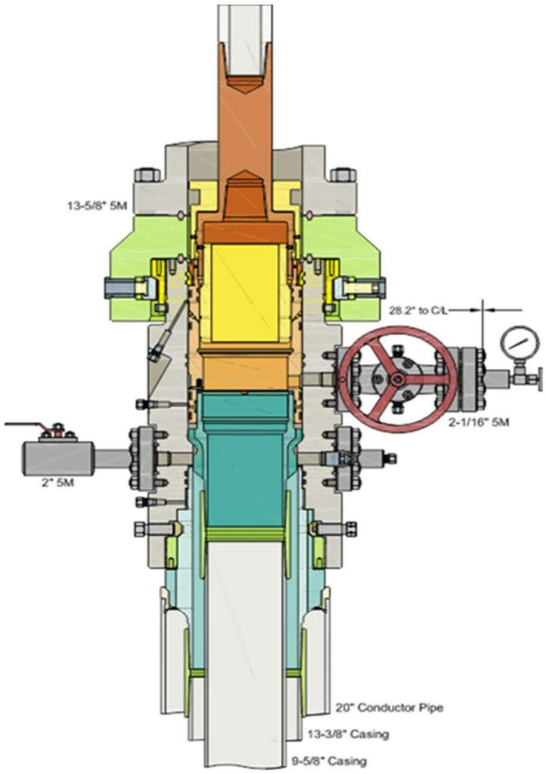
13 3/8" Surface



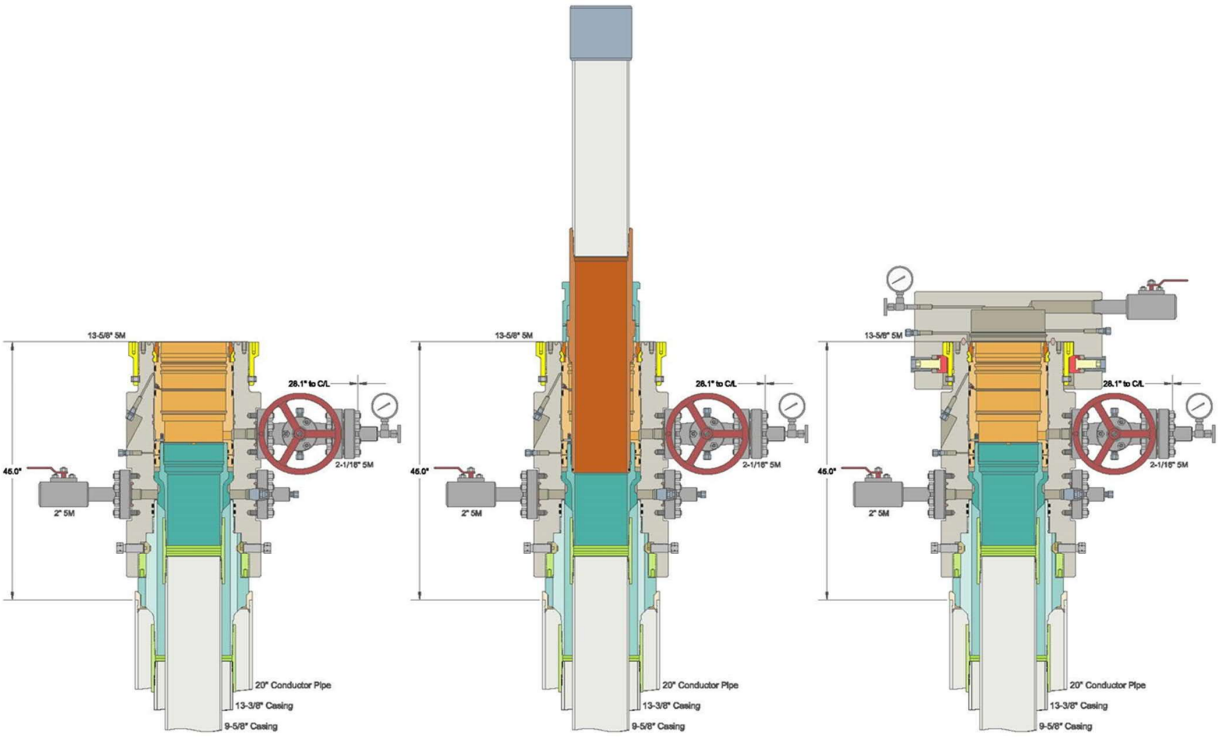
9 5/8" Intermediate



Run 9-5/8" Casing
Land Casing on 9-5/8" Mandrel Hanger
Cement 9-5/8" Casing
Retrieve Running Tool



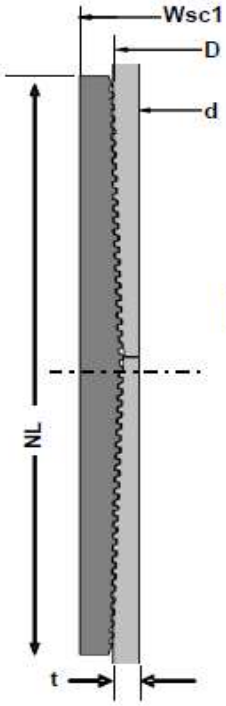
Run 13-5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



Metal One Corp.	GEOCONN-SC Pipe: SeAH P110RY 95%PBW (SMYS110ksi) *1 Coupling: P110RY (SMYS110ksi) Connection Data Sheet	Page	MAI GC 5.5 17 SeAH P110RY 95%RBW+SC-Cplg6.050 P110RY
Metal One		Date	3-Feb-21
		Rev.	0

Geometry

GEOCONN-SC



Pipe Body

		Imperial		S.I.	
Grade *1	P110RY	-	P110RY	-
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	17.00	lb/ft	25.33	kg/m
Wall Thickness (t)	0.304	in	7.72	mm
Pipe ID (d)	4.892	in	124.26	mm
Drift Dia.	4.767	in	121.08	mm

Connection

Coupling SMYS	110	ksi	110	ksi
SC-Coupling OD (Wsc1)	6.050	in	153.67	mm
Coupling Length (NL)	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	4.96	in^2	3,202	mm^2
Box Critical Area	6.10	in^2	3,937	mm^2
Thread Taper	1 / 16 (3/4" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

		Imperial		S.I.
S.M.Y.S. *1	546	kips	2,428	kN
M.I.Y.P. *1	11,550	psi	79.66	MPa
Collapse Strength *1	7,480	psi	51.59	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1: SeAH P110RY 95%RBW: SMYS110ksi, MIYP11,550psi

Performance Properties for Connection

Min. Connection Joint Strength	100% of S.M.Y.S.
Min. Compression Yield	100% of S.M.Y.S.
Internal Pressure	100% of M.I.Y.P.
External Pressure	100% of Collapse Strength
Max. DLS (deg. /100ft)	>90

Recommended Torque

Min.	10,800	ft-lb	14,600	N-m
Opti.	12,000	ft-lb	16,200	N-m
Max.	13,200	ft-lb	17,800	N-m
Operational Max.	15,600	ft-lb	21,100	N-m

Note : Operational Max. torque can be applied for high torque application

Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	**API SPEC 16 C**
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St.steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

Printed: TIRETECH/ICsontosG - 2014.03.10 15:22:17

Permian Resources
Multi-Well Pad Batch Drilling Procedure

Surface Casing - PR intends to Batch set all 13-3/8" casing to a depth approved in the APD. 17-1/2" Surface Holes will be batch drilled by a rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill 17-1/2" Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land 13-3/8" 54.5# J55 BTC casing see Illustration 1-1 Below to depth approved in APD.
3. Set packoff and test to 5k psi
4. Offline Cement
5. Install wellhead with pressure gauge and nightcap. Nightcap is shown on final wellhead Stack up Illustration #2-2.
6. Skid Rig to adjacent well to drill Surface hole.
7. Surface casing test will be performed by the rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is

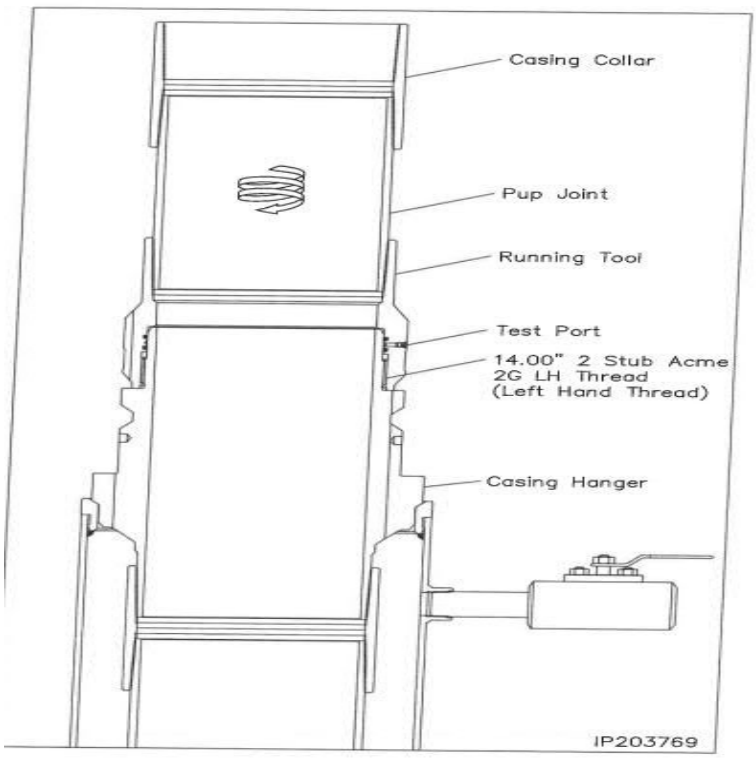


Illustration 1-1

Intermediate Casing – PR intends to Batch set all intermediate casing strings to a depth approved in the APD, typically set into Lamar. 12-1/4" Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out 13-3/8" shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 5,000 psi for 15 minutes. Nightcap shown on final wellhead stack up illustration 2-2 on page 3.
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

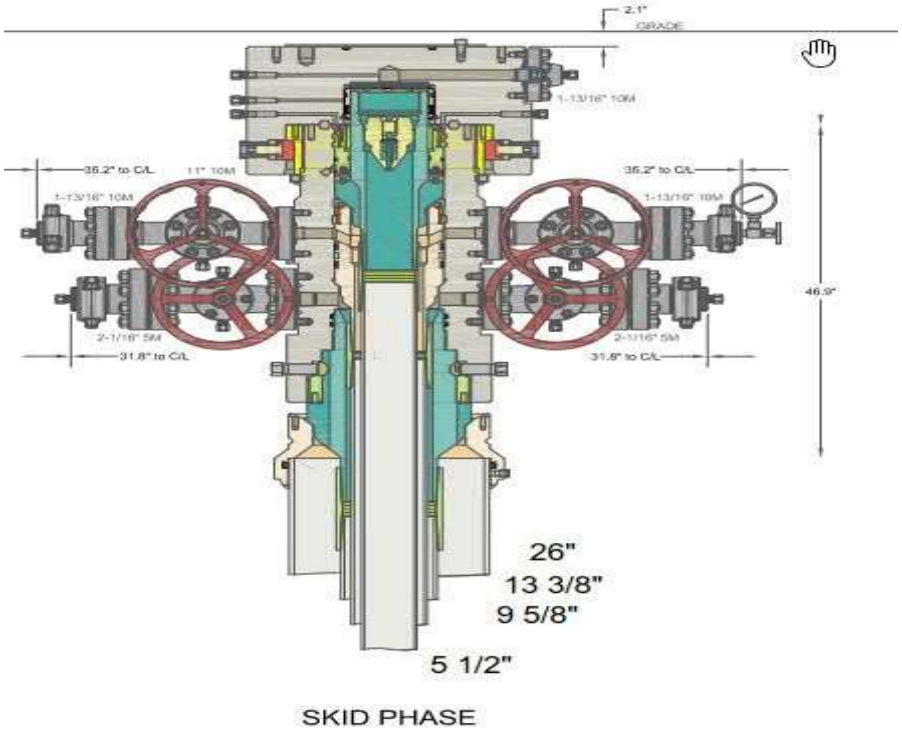


Illustration 2-2

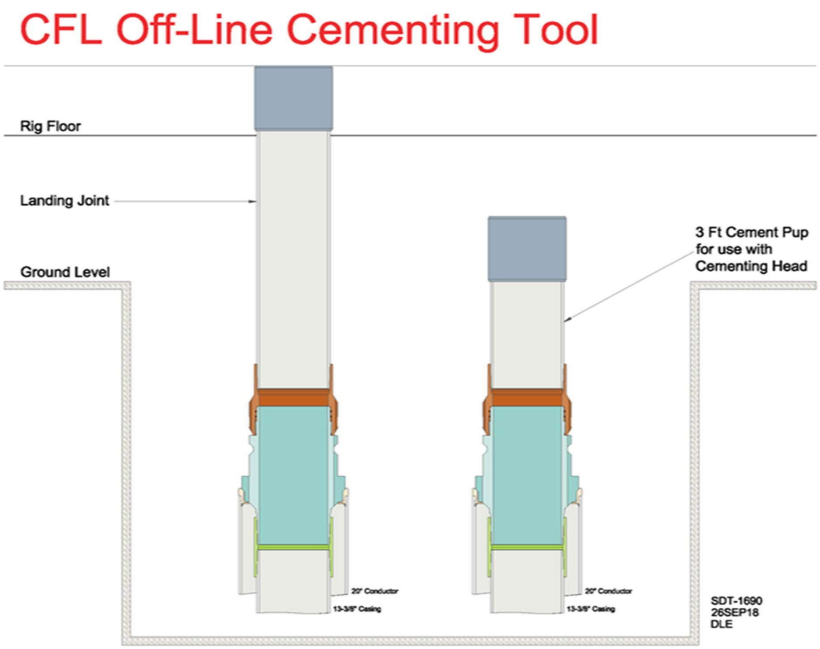
Production Casing – PR intends to Batch set all Production casings with Rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Big Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run 51/2" Production Casing.
6. Remove wear bushing then run 5-1/2" production casing to TD landing casing mandrel in wellhead.
7. Cement 5-1/2" Production string with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 5,000psi for 15 minutes.
9. Install BPV in 5-1/2" mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.

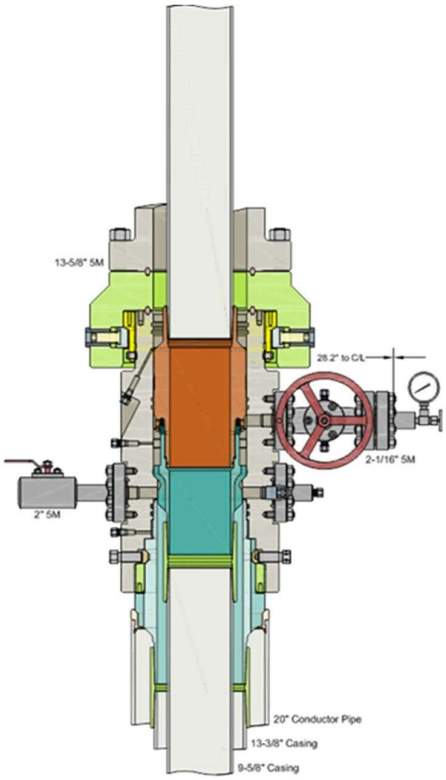
Permian Resources Offline Cementing Procedure
13-3/8" & 9-5/8" Casing

1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
    a) If well is not static use the casing outlet valves to kill well
    b) Drillers method will be used in well control event
    c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    d) Kill mud will be circulated once influx is circulated out of hole
    e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.

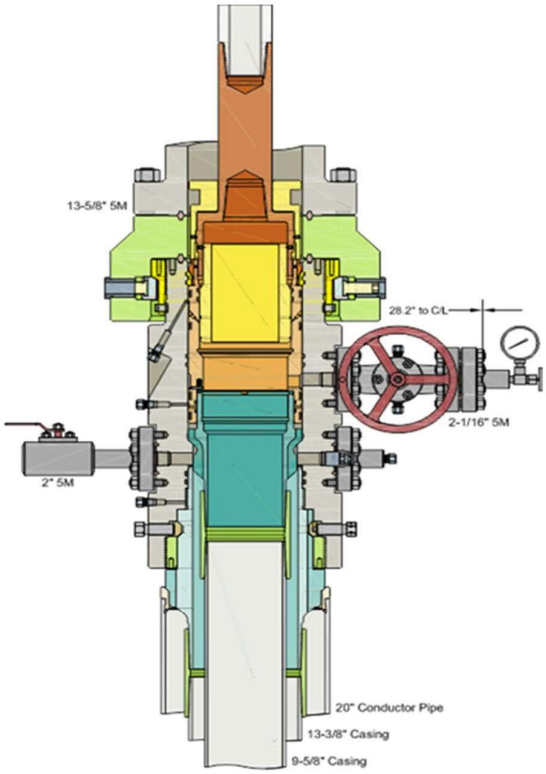
13 3/8" Surface



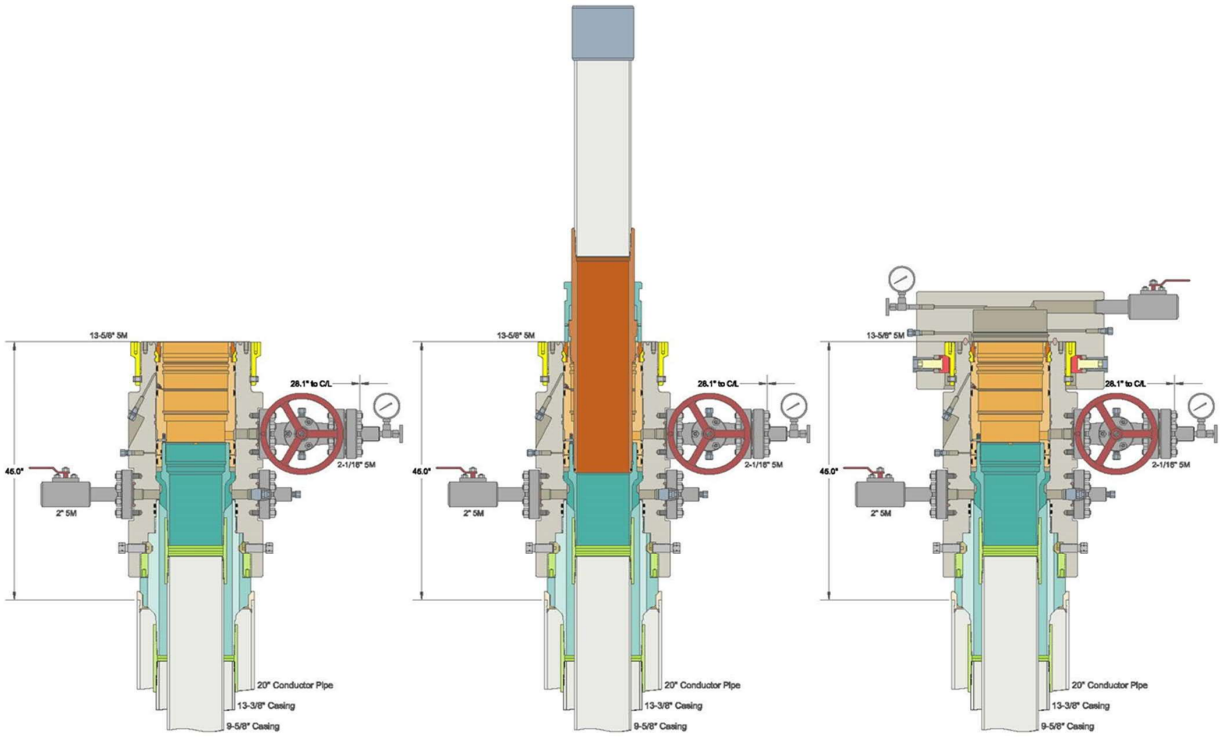
9 5/8" Intermediate



Run 9-5/8" Casing
Land Casing on 9-5/8" Mandrel Hanger
Cement 9-5/8" Casing
Retrieve Running Tool



Run 13-5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



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

Bond Info Data
09/20/2023

APD ID: 10400085829
Submission Date: 06/03/2022
Operator Name: COLGATE OPERATING LLC
Well Name: KOALA 9 FED COM
Well Number: 114H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Bond

Federal/Indian APD: FED

BLM Bond number: NMB001382

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

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 260984

CONDITIONS

Operator: Permian Resources Operating, LLC 1001 17th Street, Suite 1800 Denver, CO 80202	OGRID: 372165
	Action Number: 260984
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	9/11/2023
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	9/11/2023
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	9/11/2023
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	9/11/2023
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	9/11/2023