



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

Application for Permit to Drill

APD Package Report

Date Printed:

APD ID:	Well Status:
APD Received Date:	Well Name:
Operator:	Well Number:

APD Package Report Contents

- Form 3160-3
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 - Casing Spec Documents: 2 file(s)
 - Casing Design Assumptions and Worksheet(s): 7 file(s)
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- 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

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		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No.
2. Name of Operator		9. API Well No. 30-015-54143
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
13. State		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
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.

(Continued on page 2)

*(Instructions on page 2)



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 well, and any other required information, should be furnished when required by Federal agency offices.

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

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

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 well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

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

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

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

The BLM connects this information to an 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 Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

Additional Operator Remarks

Location of Well

0. SHL: NENE / 795 FNL / 452 FEL / TWSP: 20S / RANGE: 28E / SECTION: 8 / LAT: 32.5931848 / LONG: -104.1919602 (TVD: 0 feet, MD: 0 feet)

PPP: SWNW / 2310 FNL / 0 FEL / TWSP: 20S / RANGE: 28E / SECTION: 10 / LAT: 32.5891077 / LONG: -104.1737778 (TVD: 8494 feet, MD: 14205 feet)

PPP: SWNE / 2310 FNL / 0 FEL / TWSP: 20S / RANGE: 28E / SECTION: 9 / LAT: 32.5890652 / LONG: -104.1824312 (TVD: 8494 feet, MD: 11540 feet)

PPP: SWNW / 2310 FNL / 100 FWL / TWSP: 20S / RANGE: 28E / SECTION: 9 / LAT: 32.5890652 / LONG: -104.1824312 (TVD: 8494 feet, MD: 11540 feet)

BHL: SENE / 2310 FNL / 10 FEL / TWSP: 20S / RANGE: 28E / SECTION: 10 / LAT: 32.5891905 / LONG: -104.1565536 (TVD: 8494 feet, MD: 19510 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.:	NMNM137444
LOCATION:	Section 8, T.20 S, R.28 E., NMPM
COUNTY:	Eddy County, New Mexico
WELL NAME & NO.:	Koala 9 Fed Com 132H
SURFACE HOLE FOOTAGE:	795'/N & 452'/E
BOTTOM HOLE FOOTAGE:	2310'/N & 10'/E

COA

H₂S	☒ 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. **Excess calculates to 19%. Additional cement maybe required.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

- hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- 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 High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
(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 7%. Additional cement may be required.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. 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 integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **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



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

Operator Certification Data Report

08/29/2023

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: 06/27/2023

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:



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

Application Data

08/29/2023

APD ID: 10400085980

Submission Date: 06/09/2022

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM

Well Number: 132H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data
reflects the most
recent changes
[Show Final Text](#)

Section 1 - General

APD ID: 10400085980

Tie to previous NOS?

Submission Date: 06/09/2022

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: NMNM137444

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? N

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: 132H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: THIRD BONE
SPRING

Pool Name: BURTON FLAT,
MORROW (PRO GAS)

Operator Name: COLGATE OPERATING LLC**Well Name:** KOALA 9 FED COM**Well Number:** 132H**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 NORTH**Number:** 2**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:** 12 Miles**Distance to nearest well:** 1528 FT**Distance to lease line:** 452 FT**Reservoir well spacing assigned acres Measurement:** 320 Acres**Well plat:** KOALA_9_FED_COM_132H_C102_Plat_Signed_20220609071122.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	795	FNL	452	FEL	20S	28E	8	Aliquot NENE	32.5931848	- 104.1919602	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 83584	3288	0	0	N
KOP Leg #1	2195	FNL	406	FEL	20S	28E	8	Aliquot SENE	32.5893373	- 104.1926222	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 26683	- 4640	8070	7928	N
PPP Leg #1-1	2310	FNL	100	FWL	20S	28E	9	Aliquot SWNW	32.5890652	- 104.1824312	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 137444	- 5206	11540	8494	Y

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM

Well Number: 132H

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 #1-2	2310	FNL	0	FEL	20S	28E	9	Aliquot SWNE	32.5890652	- 104.1824312	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 13232	- 5206	11540	8494	Y
PPP Leg #1-3	2310	FNL	0	FEL	20S	28E	10	Aliquot SWNW	32.5891077	- 104.1737778	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 15003	- 5206	14205	8494	Y
EXIT Leg #1	2310	FNL	100	FEL	20S	28E	10	Aliquot SENE	32.5891892	- 104.1568459	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 15003	- 5206	19420	8494	Y
BHL Leg #1	2310	FNL	10	FEL	20S	28E	10	Aliquot SENE	32.5891905	- 104.1565536	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 15003	- 5206	19510	8494	Y

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 30-015- 54143		2 Pool Code 73280		3 Pool Name BURTON FLAT, MORROW (PRO GAS)	
4 Property Code 334680		5 Property Name KOALA 9 FED COM			6 Well Number 132H
7 OGRID No. 371449		8 Operator Name COLGATE ENERGY LLC			9 Elevation 3288'

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
A	8	20-S	28-E		795'	NORTH	452'	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
H	10	20-S	28-E		2310'	NORTH	10'	EAST	EDDY

12 Dedicated Acres 320	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

SHL

FTP

LTP

BHL

FTP TO LTP = 10,445.33'

795'

2310'

452'

100'

10'

100'

8 9 10 11

K J I H G

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.

Mikah Thomas 06.02.2022

Signature Date

Mikah Thomas

Printed Name

mthomas@colgateenergy.com

E-mail Address

SURFACE HOLE LOCATION (SHL)
NEW MEXICO EAST - NAD 83
X=584720.65 LAT.= 32.59318480° N
Y=579560.08 LONG.= 104.19246790° W
NEW MEXICO EAST - NAD 27
X=543540.51 LAT.= 32.59306765° N
Y=579498.60 LONG.= 104.19196020° W
795' FNL, 452' FEL - SECTION 8

FIRST TAKE POINT (FTP)
NEW MEXICO EAST - NAD 83
X=585248.75 LAT.= 32.58902375° N
Y=578046.98 LONG.= 104.19075976° W
NEW MEXICO EAST - NAD 27
X=544068.59 LAT.= 32.58890654° N
Y=577985.53 LONG.= 104.19025221° W
2310' FNL, 100' FWL - SECTION 9

LAST TAKE POINT (LTP)
NEW MEXICO EAST - NAD 83
X=595693.80 LAT.= 32.58918899° N
Y=578122.76 LONG.= 104.15684588° W
NEW MEXICO EAST - NAD 27
X=554513.61 LAT.= 32.58907142° N
Y=578061.23 LONG.= 104.15633920° W
2310' FNL, 100' FEL - SECTION 10

BOTTOM HOLE LOCATION (BHL)
NEW MEXICO EAST - NAD 83
X=595783.82 LAT.= 32.58919056° N
Y=578123.48 LONG.= 104.15655360° W
NEW MEXICO EAST - NAD 27
X=554603.63 LAT.= 32.58907299° N
Y=578061.95 LONG.= 104.15604693° W
2310' FNL, 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'

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.

MARK J. MURRAY
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
12177

Date of Survey: 5/5/2022

Signature and Seal of Professional Surveyor:

Certificate Number



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

Drilling Plan Data Report

08/29/2023

APD ID: 10400085980

Submission Date: 06/09/2022

Highlighted data
reflects the most
recent changes

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM

Well Number: 132H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12017474	RUSTLER	3288	241	241	ANHYDRITE, LIMESTONE, SALT	NONE	N
12017475	TOP SALT	2906	382	382	ANHYDRITE, SALT	NONE	N
12017476	TANSILL	2520	768	768	ANHYDRITE, DOLOMITE	NONE	N
12017479	YATES	2445	843	843	DOLOMITE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017477	SEVEN RIVERS	2070	1218	1219	ANHYDRITE, DOLOMITE, SANDSTONE, SHALE	NONE	N
12017478	QUEEN	1479	1809	1819	ANHYDRITE, DOLOMITE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017480	GRAYBURG	1270	2018	2033	ANHYDRITE, DOLOMITE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017481	SAN ANDRES	870	2418	2441	ANHYDRITE, DOLOMITE	NATURAL GAS, OIL	N
12017482	DELAWARE SAND	295	2993	3029	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017483	BONE SPRING	-1280	4568	4637	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017484	BONE SPRING 1ST	-2830	6118	6221	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017491	BONE SPRING 2ND	-3905	7193	7319	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
12017492	BONE SPRING 3RD	-4980	8268	8441	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: COLGATE OPERATING LLC**Well Name:** KOALA 9 FED COM**Well Number:** 132H**Pressure Rating (PSI):** 5M**Rating Depth:** 8594

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 Attachment:

Choke_Diagram_Attachment_20230627145708.pdf

BOP Diagram Attachment:

BOP_Diagram_Attachment_20230627145711.pdf

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM

Well Number: 132H

Choke_Diagram_Attachment_20230627145708.pdf

BOP_Diagram_Attachment_20230627145711.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	266	0	266	3288	3022	266	J-55	54.5	BUTT	8.6	4.02	DRY	7.94	DRY	7.45
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2943	0	2943	3274	345	2943	J-55	36	BUTT	2.69	1.6	DRY	3.1	DRY	2.74
3	PRODUCTION	8.75	5.5	NEW	NON API	N	0	8974	0	8494	3288	-5206	8974	P-110	17	OTHER - GEOCONN	1.69	1.77	DRY	2.23	DRY	2.23
4	PRODUCTION	7.875	5.5	NEW	NON API	N	8974	19509	8494	8494	-5206	-5206	10535	P-110	17	OTHER - GEOCONN	1.69	1.77	DRY	2.23	DRY	2.23

Casing Attachments

Casing ID: 1

String

SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing_Assumptions_Worksheet_20230627145758.pdf

Operator Name: COLGATE OPERATING LLC**Well Name:** KOALA 9 FED COM**Well Number:** 132H**Casing Attachments****Casing ID:** 2 **String** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing_Assumptions_Worksheet_20230627145835.pdf

Casing ID: 3 **String** PRODUCTION**Inspection Document:****Spec Document:**

Connection_Data_Sheet___GeoConn_SC___P_110RY_20230627145924.pdf

Tapered String Spec:**Casing Design Assumptions and Worksheet(s):**

Connection_Data_Sheet___GeoConn_SC___P_110RY_20230627145947.pdf

Casing ID: 4 **String** PRODUCTION**Inspection Document:****Spec Document:**

Connection_Data_Sheet___GeoConn_SC___P_110RY_20230627150028.pdf

Tapered String Spec:**Casing Design Assumptions and Worksheet(s):**

Casing_Assumptions_Worksheet_20230627150045.pdf

Section 4 - Cement

Operator Name: COLGATE OPERATING LLC**Well Name:** KOALA 9 FED COM**Well Number:** 132H

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	266	210	1.34	14.8	280	50	Class C	Accelerator
INTERMEDIATE	Lead		0	2350	520	2.08	12.7	1080	50	Class C	Salt, Extender & LCM Additives
INTERMEDIATE	Tail		2350	2943	210	1.34	14.8	280	50	Class C	Accelerator
PRODUCTION	Lead		2443	8069	810	2.41	11.5	1950	40	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Tail		8069	1950 9	1490	1.73	12.5	2570	25	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Lead		2443	8069	810	2.41	11.5	1950	40	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Tail		8069	1950 9	1490	1.73	12.5	2570	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:** 132H

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	266	WATER-BASED MUD	8.6	9.5							
266	2943	SALT SATURATED	10	10							
2943	8974	OTHER : Brine	9	10							
8974	1950 9	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: 4420

Anticipated Surface Pressure: 2551

Anticipated Bottom Hole Temperature(F): 142

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

Describe:

Contingency Plans geohazards 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:** 132H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:[_A04__Koala_9_Fed_Com_132H_APD_Rev00_WM_20230627150717.pdf](#)[_A04__Koala_9_Fed_Com_132H_APD_Rev00_GEO_20230627150710.pdf](#)[_A04__Koala_9_Fed_Com_132H_APD_Rev00_AC_20230627150714.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_132H_drilling_packet_20230627150750.pdf](#)**Other Variance attachment:**[Flex_Hose_Specs_20230627150756.pdf](#)[Multi_Well_Pad_Batch_Drilling___Off_Line_Cement_Procedure_20230627150800.pdf](#)

The diagram illustrates a wellbore choke system. At the top, the **OUTLET FROM BOP** connects to a vertical line. This line includes a **Choke Line Valve** and a **Remotely Operated HCR** (Sequence Optional). The line then passes through a **4" NOMINAL CHOKER LINE** and a **5M PRESSURE GAUGE**. It then splits into two horizontal branches, each containing a **Remotely Operated Choke** and a **Choke Isolation Valve**. These branches lead to a **MANUAL CHOKER** and a **2" NOMINAL** line. The system then flows through a **4" NOMINAL** line into a **BUFFER TANK**. From the buffer tank, the flow goes to a **MUD GAS SEPARATOR (MGS)**. The MGS has a **MGS AND/OR PIT** connection, a **CLOSED LOOP MUD SYSTEM** outlet, and a **MGS Gas Vent Line**. A **FOR BLEED OFF OR "PANIC" LINE TO PIT NOT CONNECTED TO BUFFER TANK OR MGS** is also shown. A vertical dimension line on the left indicates a height of **150' to Flare Pit**.



ContiTech

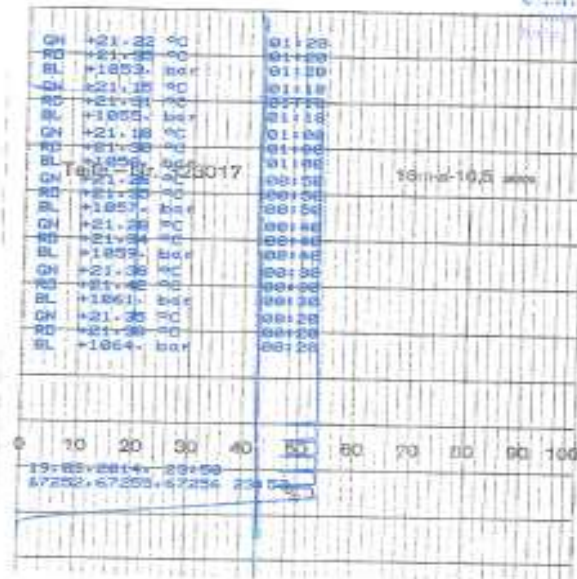
CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014 Page: 9 / 113
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QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 504	
PURCHASER: ContiTech Oil & Marine Corp.				P.O. N°: 4500409659	
CONTITECH RUBBER order N°: 538236		HOSE TYPE: 3" ID		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 temperature					
See attachment. (1 page)					
↑ 10 mm = 10 Min. → 10 mm = 20 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		9251 9254		AISI 4130	
4 1/16" 10K API b.w. Flange end				AISI 4130	
				A0578N	
				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.				ContiTech Rubber Industrial Oil Quality Control Dept.  	

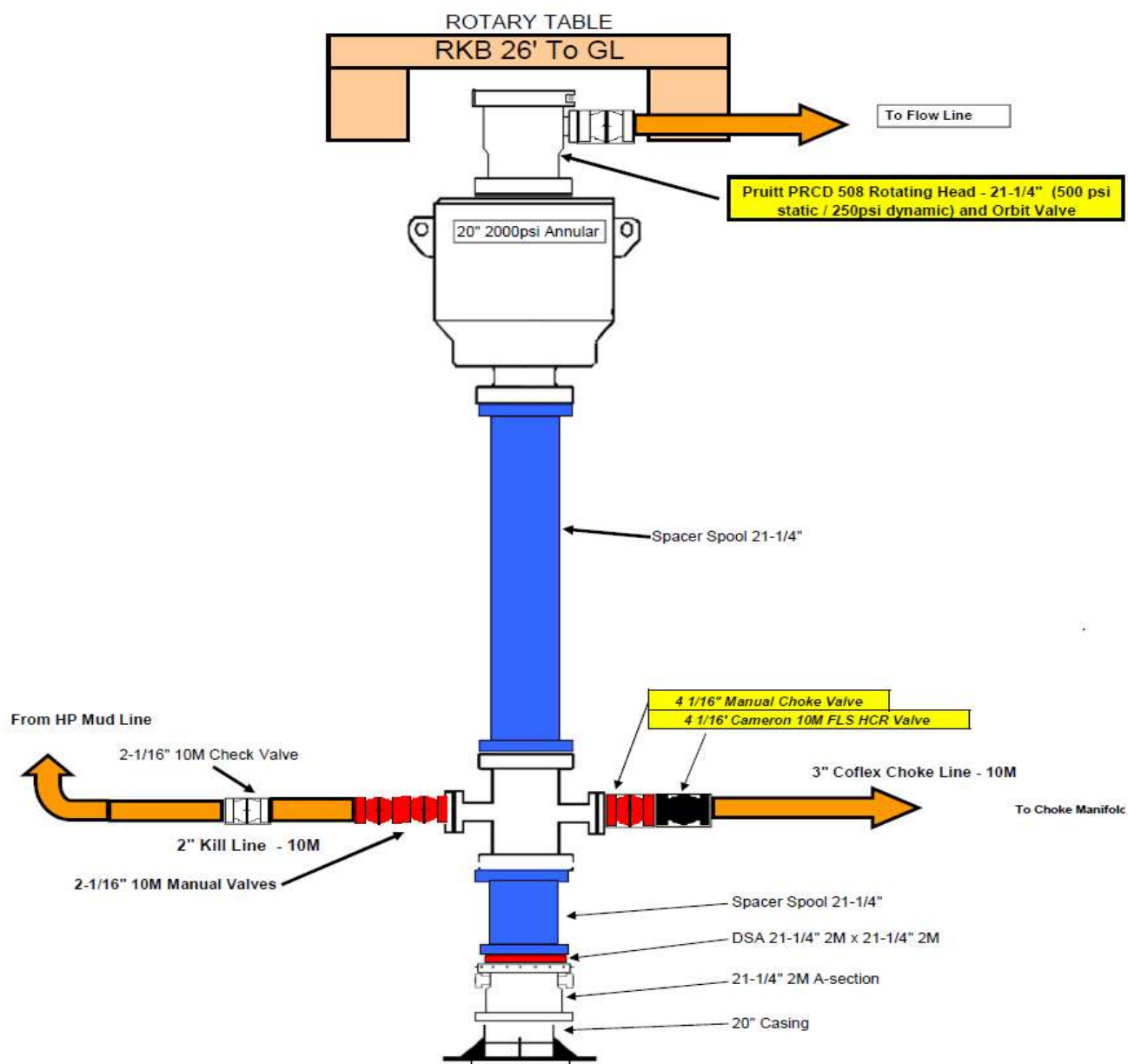
CentTech Rubber Industrial Kft., Budapest 10, H-8728 Szigliget | H-8701 P.O.Box 102 Szigliget, Hungary
Phone: +36 87 984 737 | Fax: +36 82 546 738 | e-mail: info@bud.centtech.hu | Internet: www.centtech-rubber.hu; www.centtech.hu
The Court of Company Law or Registry Court | Registry Court No: Cg.99-09-000503 | EU VAT No: HU11537209
Barna Zsuzsanna Cz. Rt., Budapest | H-10766-26830003

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

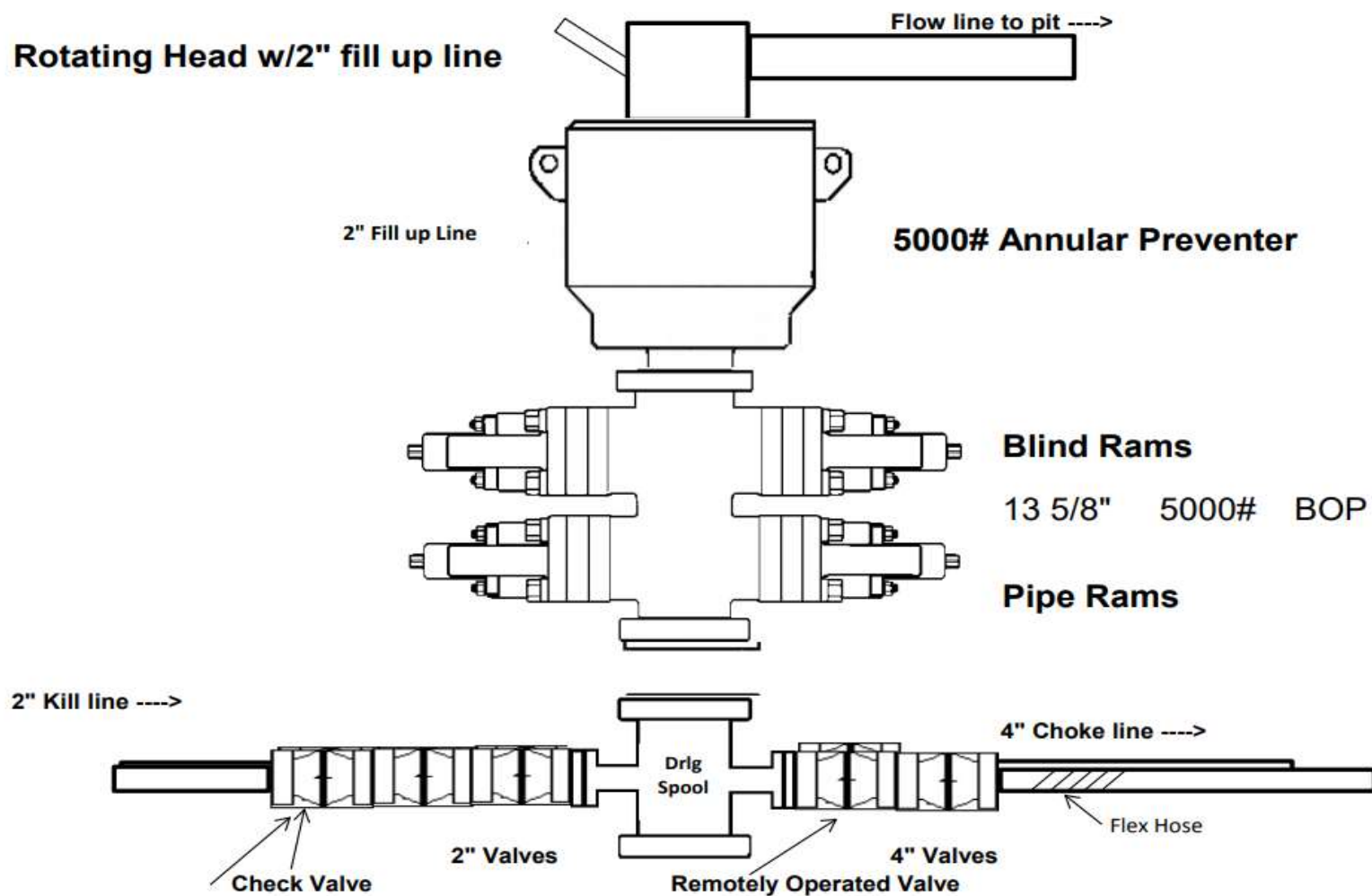
Page: 1 / 1



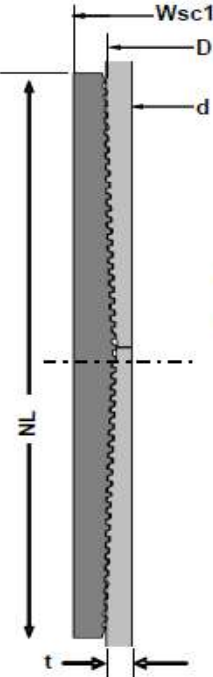
2M BOP



5,000 psi BOP Schematic



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

		Imperial		S.I.
Geometry				
Pipe Body				
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			

		Imperial		S.I.
Performance				
Performance Properties for Pipe Body				
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			

		Imperial		S.I.
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

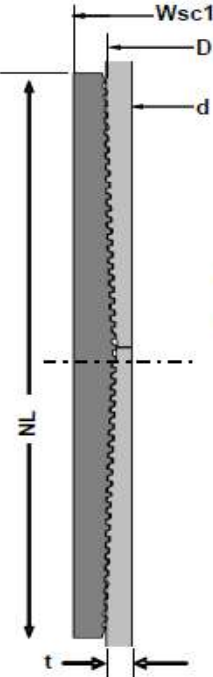
Legal Notice

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Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.mto.co.jp/mto-con/images/top/WebsiteTerms_Active_202333287_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.

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

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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.
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 1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

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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.

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Surface

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 - b) Casing Pressure Test
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 - (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.

Colgate's Minimum Design Criteria

Burst, collapse and tension SF are calculated using Landmark's StressCheck (casing design) software. A sundry will be requested if any lesser grade or different size casing is substituted.

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.
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 - (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.
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 1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

- 1) Burst Design Loads
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 - (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.
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 - 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.
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 - 1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

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 - a) Gas Kick Profile
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 - (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.
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 - 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.



U. S. Steel Tubular Products

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5.500" 17.00lbs/ft (0.304" Wall) P110 HP USS-CDC HTQ®



MECHANICAL PROPERTIES	Pipe	USS-CDC HTQ®	
Minimum Yield Strength	125,000	--	psi
Maximum Yield Strength	140,000	--	psi
Minimum Tensile Strength	130,000	--	psi
DIMENSIONS	Pipe	USS-CDC HTQ®	
Outside Diameter	5.500	6.300	in.
Wall Thickness	0.304	--	in.
Inside Diameter	4.892	4.892	in.
Standard Drift	4.767	4.767	in.
Alternate Drift	--	--	in.
Coupling Length	--	9.250	in.
Nominal Linear Weight, T&C	17.00	--	lbs/ft
Plain End Weight	16.89	--	lbs/ft
SECTION AREA	Pipe	USS-CDC HTQ®	
Critical Area	4.962	4.962	sq. in.
Joint Efficiency	--	97.1	%
PERFORMANCE	Pipe	USS-CDC HTQ®	
Minimum Collapse Pressure	9,440	9,440	psi
External Pressure Leak Resistance	--	7,550	psi
Minimum Internal Yield Pressure	12,090	12,090	psi
Minimum Pipe Body Yield Strength	620,000	--	lbs
Joint Strength	--	602,000	lbs
Compression Rating	--	361,000	lbs
Reference Length	--	23,608	ft
Maximum Uniaxial Bend Rating	--	60.7	deg/100 ft
MAKE-UP DATA	Pipe	USS-CDC HTQ®	
Make-Up Loss	--	4.63	in.
Minimum Make-Up Torque	--	11,000	ft-lbs
Maximum Make-Up Torque	--	15,500	ft-lbs
Connection Yield Torque	--	19,200	ft-lbs

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness and Specified Minimum Yield Strength (SMYS).
2. Uniaxial bending rating shown is structural only, and equal to compression efficiency.
3. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
4. Reference length is calculated by joint strength divided by nominal threaded and coupled weight with 1.5 safety factor.
5. Connection external pressure leak resistance has been verified to 80% API pipe body collapse pressure following the guidelines of API 5C5 Cal II.

Legal Notice

USS - CDC HTQ® (High Torque Casing Drilling Connection) is a trademark of U. S. Steel Corporation. This product is a modified API Buttress threaded and coupled connection designed for drilling with casing applications. All material contained in this publication is for general information only. This material should not therefore be used or relied upon for any specific application without independent competent professional examination and verification of accuracy, suitability and applicability. Anyone making use of this material does so at their own risk and assumes any and all liability resulting from such use. U. S. Steel disclaims any and all expressed or implied warranties of fitness for any general or particular application.

U. S. Steel Tubular Products
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Spring, Texas 77380

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www.usstubular.com

File: Plan #1 *

Date: May 5, 2022 Page: 1

WELL SUMMARY

	String Conductor Casing	OD/Weight/Grade 20", 94.000 ppf, H-40	Connection N/A	MD Interval (usft) 25-140	Drift Dia. (") 18.936	Minimum Safety Factor (Abs)				
						Burst 12.03	Collapse 7.26	Axial 44.02	Triaxial 13.69	
1 2 3 4 5 6 7 8 9	Surface Casing	13 3/8", 54.500 ppf, J-55	BTC, J-55	25-340	12.459	1.79	4.90	7.19	1.96	
10 11 12	Intermediate Casing	9 5/8", 36.000 ppf, J-55	BTC, J-55	25-2910	8.765	1.31	3.13	2.91	1.41	
	Production Casing	5 1/2", 17.000 ppf, HP P-110	CDC HTQ	25-19509	4.767	1.32	2.06	2.31	1.39	

203H

StressCheck 5000.15.1.0 Build 1002

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

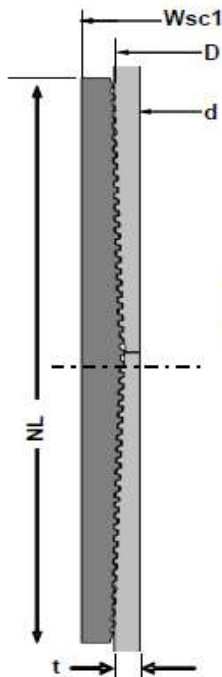
- 1) Burst Design Loads
 - a) Gas Kick Profile
 - (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
 - (2) External: Mud weight to TOC and cement mix water 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.

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



Geometry		Imperial		S.I.	
Pipe Body					
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		Imperial		S.I.	
Performance Properties for Pipe Body					
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					

Legal Notice

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Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.mto.co.jp/mto-con/images/top/WebsiteTerms_Active_20233287_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.



H₂S Contingency Plan



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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. H₂S 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 (H₂S).

Objective:

Prevent any and all accidents and prevent the uncontrolled release of H₂S 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 H₂S 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 H₂S 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 H₂S.

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 H₂S drilling operations safety. The release of a potentially hazardous quantity of H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S. 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 H₂S 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. H₂S Alarm Drills

The Company Man and/ or designee will conduct frequent H₂S alarm drills for each crew by injecting a trace of H₂S 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 H₂S, 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 (H₂S).
 2. Use and limitations of air equipment.
 3. Use of resuscitator.
 4. Organize Buddy System.
 5. First Aid procedures.
 6. Use of H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S 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 H₂S gas from the formation, the pH will be increased as necessary for corrosion control.

H₂S Scavengers – If necessary H₂S 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 H₂S zones or when H₂S 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 H₂S (10 PPM) or of SO₂ (5 PPM) is reached. If the concentration of H₂S or SO₂ 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 H₂S or SO₂ 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 H₂S can reasonably be expected.
3. When sampling air in areas to determine if toxic concentrations of H₂S exist.
4. When working in areas where 10 PPM or more of H₂S has been detected.
5. At any time, there is doubt as to the H₂S 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 H₂S 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 H₂S 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 H₂S
 - 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 H₂S.
- 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 H₂S.
- 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 H₂S 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, maintenance and/or surveillance procedures.
- B. If the need is indicated, retrain employees in blowout prevention, H₂S emergency procedures and etc.
- C. Clean up, recharge, restock, repair, and/ or replace H₂S emergency equipment as necessary, and return it to its proper place. (For whatever rental equipment is used, this will be the responsibility of Rental Company).
- D. See that future H₂S 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 (H₂S) 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 (H₂S).
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H₂S 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 H₂S, 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 H₂S 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.

Windssocks or Wind Streamers:

- A minimum of two 10" windssocks 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 H₂S 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, H₂S 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 (O₂, LEL H₂S), preferably 4 (O₂, LEL, H₂S, 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 H₂S Provider Safety office.
- Additional personal H₂S 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 1 st Well	Date & Initial 2 nd Well	Date & Initial 3 rd Well	Date & Initial 4 th 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 ₂ S and well control procedures.				
All outside service contractors advised of potential H ₂ S 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 H₂S 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 H₂S 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 H₂S. 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 H₂S 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 H₂S and physical effects are shown in Table 2.

Table 1
Permissible Exposure Limits of Various Gases

<u>Common Name</u>	<u>Symbol</u>	<u>Sp. Gravity</u>	<u>TLV</u>	<u>STEL</u>	<u>IDLH</u>
Hydrogen Cyanide	HCN	.94	4.7 ppm	4.7 ppm	50 ppm
Hydrogen Sulfide	H ₂ S	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 H₂S 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 H₂S 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 H₂S

<u>Percent %</u>	<u>PPM</u>	<u>Physical Effects</u>
.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 H₂S

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, H₂S, 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 H₂S 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, H₂S 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 (SO₂), 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 H₂S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H₂S 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 H₂S.
- B. When breaking out any line where H₂S can reasonably be expected.
- C. When sampling air in areas where H₂S may be present.
- D. When working in areas where the concentration of H₂S exceeds the Threshold Limit Value for H₂S (10 ppm).
- E. At any time where there is a doubt as to the H₂S level in the area to be entered.

EMERGENCY RESCUE PROCEDURES

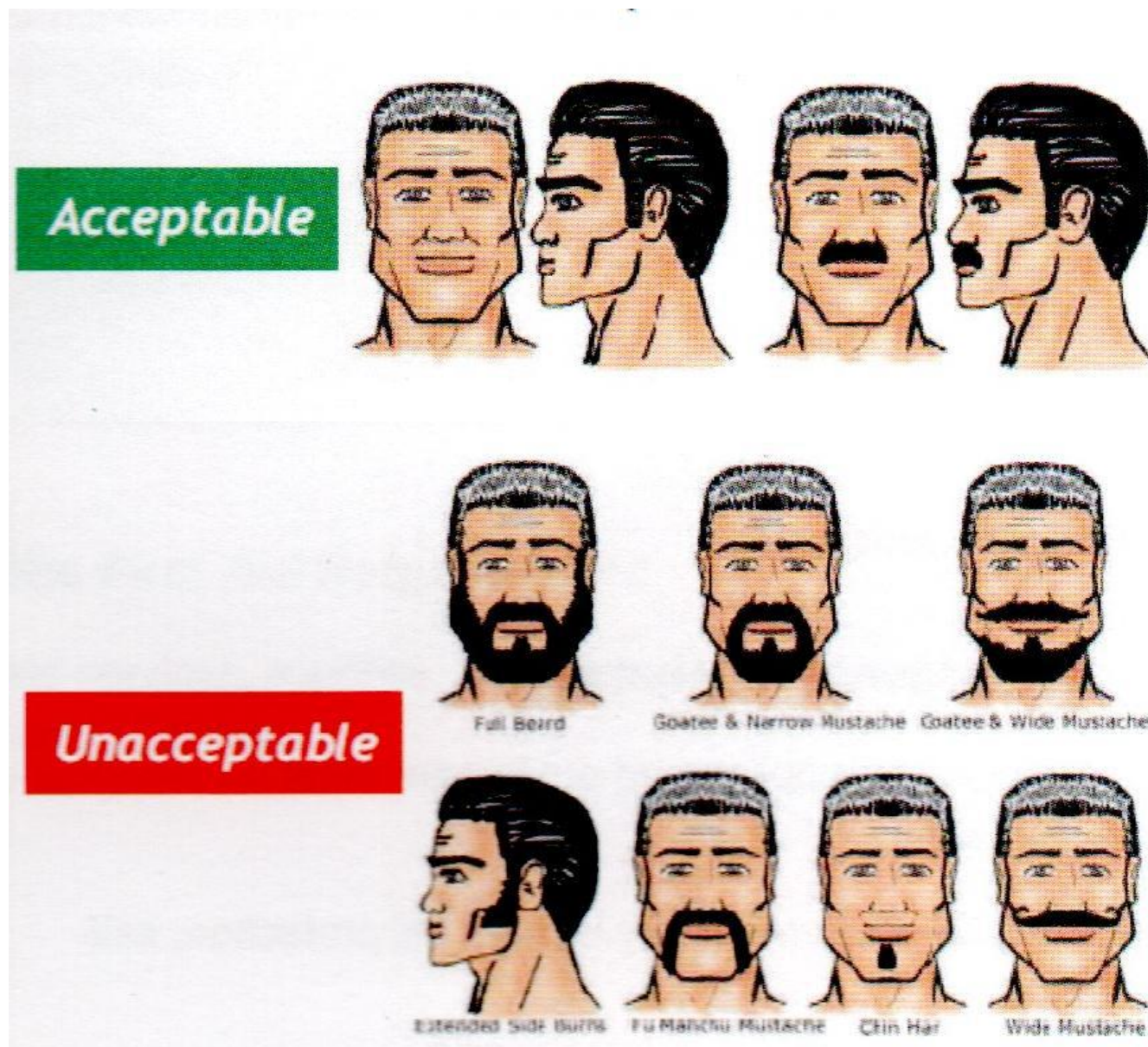
DO NOT PANIC!!!

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 H₂S, 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 H₂S 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 H₂S exposure, having no facial hair can greatly benefit response time and treatment ability.





WELL DETAILS: (A04) Koala 9 Fed Com 132H

Site: (Permit) Koala 9 Fed Com
Well: (A04) Koala 9 Fed Com 132H
Wellbore: Permit
Plan: APD-Rev00

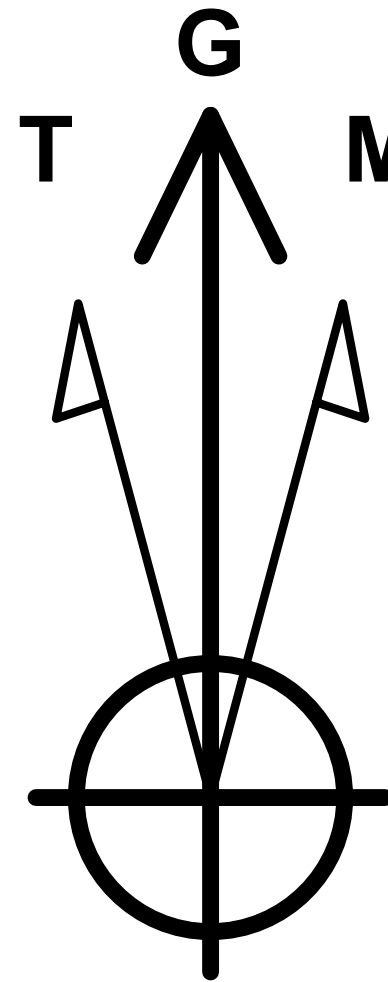
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
241.00	241.00	Rustler
382.00	382.00	T/Salt
768.00	768.00	Tansill
843.00	843.00	Yates
1218.00	1218.84	Seven Rivers
1809.00	1819.42	Queen
2018.00	2032.89	Grayburg
2418.00	2441.45	San Andres
2993.00	3028.75	CYCN
4568.00	4637.43	BSGL
6118.00	6220.59	FBSG
7193.00	7318.58	SBSG
8268.00	8441.08	TBSG

Northing 579560.08
Easting 584720.65
Latitude 32.59318480
Longitude -104.19246792

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00
3	1583.07	11.75	181.87	1577.60	-79.94	-2.61	1.50	181.87	-3.19
4	8069.78	11.75	181.87	7928.47	-1399.77	-45.68	0.00	0.00	-55.94
5	8974.43	90.00	89.58	8494.00	-1513.10	528.10	10.00	-92.24	516.99
6	19509.77	90.00	89.58	8494.00	-1436.60	11063.17	0.00	0.00	11052.34



Azimuths to Grid North
True North: -0.08°
Magnetic North: 6.68°

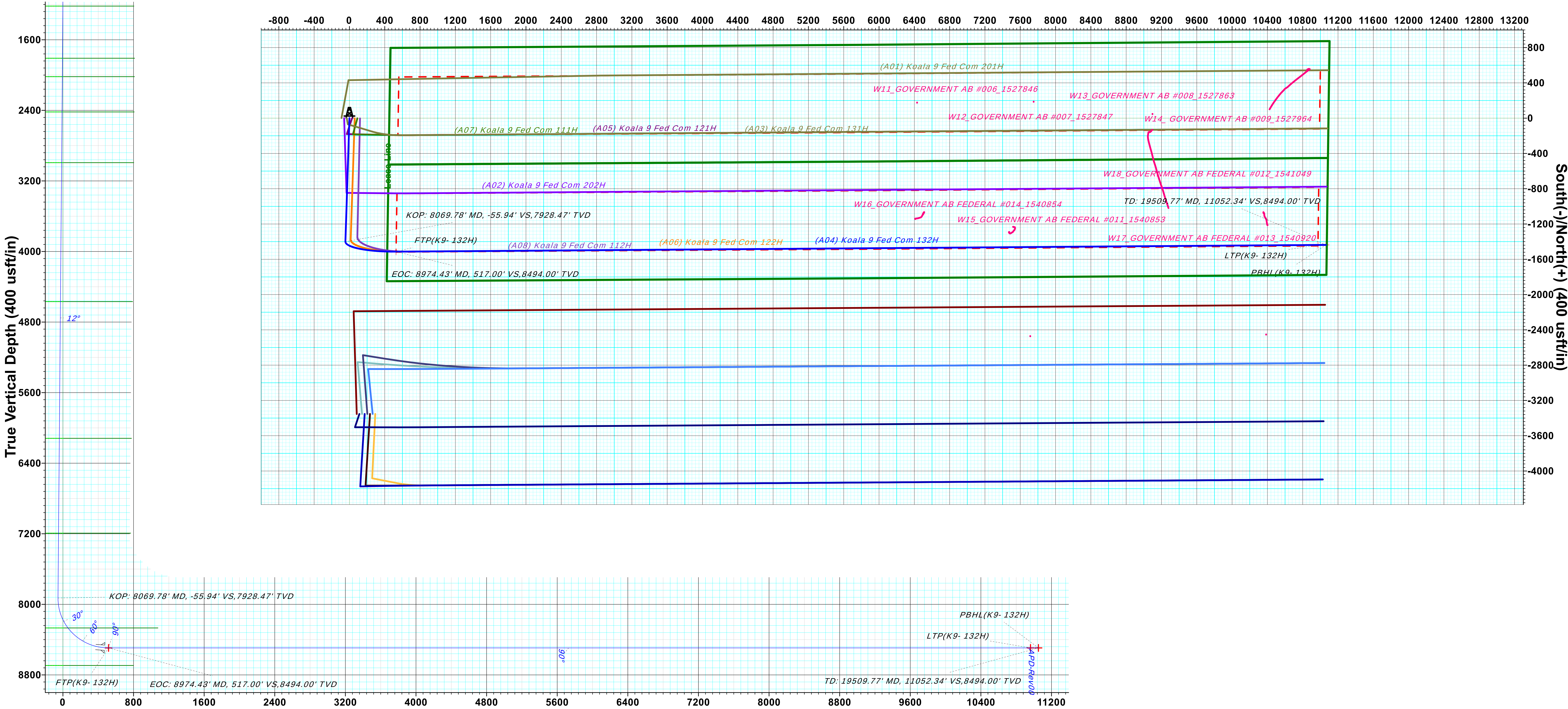
Magnetic Field
Strength: 47555.8nT
Dip Angle: 60.11°
Date: 5/6/2022
Model: IGRF2020

PROJECT DETAILS: (Permit) Eddy County, NM (83-NME)
Well Name: (A04) Koala 9 Fed Com 132H
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid
KB Elevation: 3288+30 @ 3318.00usft
Elevation: 3288.00

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FTP(K9- 132H)	8494.00	-1513.10	528.10	578046.98	585248.75	32.58902375	-104.19075976
LTP(K9- 132H)	8494.00	-1437.32	10973.15	578122.76	595693.80	32.58918899	-104.15684589
PBHL(K9- 132H)	8494.00	-1436.60	11063.17	578123.48	595783.82	32.58919056	-104.15655361

West(-)/East(+) (400 usft/in)



Vertical Section at 89.58° (400 usft/in)



Plan: APD-Rev00 ((A04) Koala 9 Fed Com 132H/Permit)
Created By: Adrian Castro Date: 6:21, May 13 2022



Colgate Energy

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

(Permit) Koala 9 Fed Com

(A04) Koala 9 Fed Com 132H

Permit

Plan: APD-Rev00

Standard Planning Report - Geographic

12 May, 2022



Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well (A04) Koala 9 Fed Com 132H
Company:	Colgate Energy	TVD Reference:	3288+30 @ 3318.00usft
Project:	(Permit) Eddy County, NM (83-NME)	MD Reference:	3288+30 @ 3318.00usft
Site:	(Permit) Koala 9 Fed Com	North Reference:	Grid
Well:	(A04) Koala 9 Fed Com 132H	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	(A04) Koala 9 Fed Com 132H					
Well Position	+N/-S	0.00 usft	Northing:	579,560.08 usft	Latitude:	32.59318479
	+E/-W	0.00 usft	Easting:	584,720.65 usft	Longitude:	-104.19246792
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,288.00 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	47,555.79122581

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	89.58	

Plan Survey Tool Program	Date	5/12/2022			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	19,509.78 APD-Rev00 (Permit)	MWD+IFR1+SAG+FDIR (SQC	OWSG MWD + IFR1 + Sag + f	

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	
1,583.07	11.75	181.87	1,577.60	-79.94	-2.61	1.50	1.50	0.00	181.87	
8,069.78	11.75	181.87	7,928.47	-1,399.77	-45.68	0.00	0.00	0.00	0.00	
8,974.43	90.00	89.58	8,494.00	-1,513.10	528.10	10.00	8.65	-10.20	-92.24	FTP(K9- 132H)
19,509.78	90.00	89.58	8,494.00	-1,436.60	11,063.17	0.00	0.00	0.00	0.00	PBHL(K9- 132H)



Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well (A04) Koala 9 Fed Com 132H
Company:	Colgate Energy	TVD Reference:	3288+30 @ 3318.00usft
Project:	(Permit) Eddy County, NM (83-NME)	MD Reference:	3288+30 @ 3318.00usft
Site:	(Permit) Koala 9 Fed Com	North Reference:	Grid
Well:	(A04) Koala 9 Fed Com 132H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
100.00	0.00	0.00	100.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
200.00	0.00	0.00	200.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
241.00	0.00	0.00	241.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
Rustler									
300.00	0.00	0.00	300.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
382.00	0.00	0.00	382.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
T/Salt									
400.00	0.00	0.00	400.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
500.00	0.00	0.00	500.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
600.00	0.00	0.00	600.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
700.00	0.00	0.00	700.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
768.00	0.00	0.00	768.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
Tansill									
800.00	0.00	0.00	800.00	0.00	0.00	579,560.08	584,720.65	32.59318479	-104.19246792
843.00	0.65	181.87	843.00	-0.24	-0.01	579,559.84	584,720.65	32.59318413	-104.19246795
Yates									
900.00	1.50	181.87	899.99	-1.31	-0.04	579,558.77	584,720.61	32.59318120	-104.19246806
1,000.00	3.00	181.87	999.91	-5.23	-0.17	579,554.85	584,720.48	32.59317041	-104.19246850
1,100.00	4.50	181.87	1,099.69	-11.77	-0.38	579,548.31	584,720.27	32.59315245	-104.19246922
1,200.00	6.00	181.87	1,199.27	-20.91	-0.68	579,539.17	584,719.97	32.59312731	-104.19247023
1,218.84	6.28	181.87	1,218.00	-22.93	-0.75	579,537.15	584,719.90	32.59312177	-104.19247045
Seven Rivers									
1,300.00	7.50	181.87	1,298.57	-32.66	-1.07	579,527.42	584,719.59	32.59309502	-104.19247152
1,400.00	9.00	181.87	1,397.54	-47.00	-1.53	579,513.08	584,719.12	32.59305560	-104.19247310
1,500.00	10.50	181.87	1,496.09	-63.93	-2.09	579,496.16	584,718.57	32.59300908	-104.19247497
1,583.07	11.75	181.87	1,577.60	-79.94	-2.61	579,480.14	584,718.04	32.59296506	-104.19247673
1,600.00	11.75	181.87	1,594.17	-83.39	-2.72	579,476.69	584,717.93	32.59295559	-104.19247711
1,700.00	11.75	181.87	1,692.08	-103.74	-3.39	579,456.35	584,717.27	32.59289966	-104.19247936
1,800.00	11.75	181.87	1,789.98	-124.08	-4.05	579,436.00	584,716.60	32.59284374	-104.19248160
1,819.42	11.75	181.87	1,809.00	-128.03	-4.18	579,432.05	584,716.48	32.59283288	-104.19248204
Queen									
1,900.00	11.75	181.87	1,887.89	-144.43	-4.71	579,415.65	584,715.94	32.59278781	-104.19248384
2,000.00	11.75	181.87	1,985.80	-164.78	-5.38	579,395.31	584,715.28	32.59273189	-104.19248609
2,032.89	11.75	181.87	2,018.00	-171.47	-5.60	579,388.62	584,715.06	32.59271349	-104.19248683
Grayburg									
2,100.00	11.75	181.87	2,083.70	-185.12	-6.04	579,374.96	584,714.61	32.59267596	-104.19248833
2,200.00	11.75	181.87	2,181.61	-205.47	-6.70	579,354.61	584,713.95	32.59262004	-104.19249057
2,300.00	11.75	181.87	2,279.51	-225.81	-7.37	579,334.27	584,713.28	32.59256411	-104.19249282
2,400.00	11.75	181.87	2,377.42	-246.16	-8.03	579,313.92	584,712.62	32.59250819	-104.19249506
2,441.45	11.75	181.87	2,418.00	-254.59	-8.31	579,305.49	584,712.35	32.59248501	-104.19249599
San Andres									
2,500.00	11.75	181.87	2,475.33	-266.51	-8.70	579,293.57	584,711.96	32.59245226	-104.19249730
2,600.00	11.75	181.87	2,573.23	-286.85	-9.36	579,273.23	584,711.29	32.59239634	-104.19249955
2,700.00	11.75	181.87	2,671.14	-307.20	-10.02	579,252.88	584,710.63	32.59234041	-104.19250179
2,800.00	11.75	181.87	2,769.04	-327.55	-10.69	579,232.54	584,709.96	32.59228449	-104.19250403
2,900.00	11.75	181.87	2,866.95	-347.89	-11.35	579,212.19	584,709.30	32.59222856	-104.19250628
3,000.00	11.75	181.87	2,964.86	-368.24	-12.02	579,191.84	584,708.64	32.59217264	-104.19250852
3,028.75	11.75	181.87	2,993.00	-374.09	-12.21	579,185.99	584,708.45	32.59215656	-104.19250917
CYCN									
3,100.00	11.75	181.87	3,062.76	-388.59	-12.68	579,171.50	584,707.97	32.59211671	-104.19251076
3,200.00	11.75	181.87	3,160.67	-408.93	-13.34	579,151.15	584,707.31	32.59206079	-104.19251301
3,300.00	11.75	181.87	3,258.57	-429.28	-14.01	579,130.80	584,706.64	32.59200486	-104.19251525



Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well (A04) Koala 9 Fed Com 132H
Company:	Colgate Energy	TVD Reference:	3288+30 @ 3318.00usft
Project:	(Permit) Eddy County, NM (83-NME)	MD Reference:	3288+30 @ 3318.00usft
Site:	(Permit) Koala 9 Fed Com	North Reference:	Grid
Well:	(A04) Koala 9 Fed Com 132H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,400.00	11.75	181.87	3,356.48	-449.63	-14.67	579,110.46	584,705.98	32.59194894	-104.19251749
3,500.00	11.75	181.87	3,454.39	-469.97	-15.34	579,090.11	584,705.32	32.59189301	-104.19251974
3,600.00	11.75	181.87	3,552.29	-490.32	-16.00	579,069.76	584,704.65	32.59183709	-104.19252198
3,700.00	11.75	181.87	3,650.20	-510.67	-16.66	579,049.42	584,703.99	32.59178116	-104.19252422
3,800.00	11.75	181.87	3,748.10	-531.01	-17.33	579,029.07	584,703.33	32.59172524	-104.19252647
3,900.00	11.75	181.87	3,846.01	-551.36	-17.99	579,008.72	584,702.66	32.59166931	-104.19252871
4,000.00	11.75	181.87	3,943.91	-571.71	-18.66	578,988.38	584,702.00	32.59161339	-104.19253095
4,100.00	11.75	181.87	4,041.82	-592.05	-19.32	578,968.03	584,701.33	32.59155746	-104.19253320
4,200.00	11.75	181.87	4,139.73	-612.40	-19.98	578,947.68	584,700.67	32.59150154	-104.19253544
4,300.00	11.75	181.87	4,237.63	-632.75	-20.65	578,927.34	584,700.01	32.59144561	-104.19253768
4,400.00	11.75	181.87	4,335.54	-653.09	-21.31	578,906.99	584,699.34	32.59138969	-104.19253993
4,500.00	11.75	181.87	4,433.44	-673.44	-21.98	578,886.64	584,698.68	32.59133376	-104.19254217
4,600.00	11.75	181.87	4,531.35	-693.79	-22.64	578,866.30	584,698.01	32.59127784	-104.19254441
4,637.43	11.75	181.87	4,568.00	-701.40	-22.89	578,858.68	584,697.77	32.59125690	-104.19254525
BSGL									
4,700.00	11.75	181.87	4,629.26	-714.13	-23.30	578,845.95	584,697.35	32.59122191	-104.19254666
4,800.00	11.75	181.87	4,727.16	-734.48	-23.97	578,825.60	584,696.69	32.59116599	-104.19254890
4,900.00	11.75	181.87	4,825.07	-754.83	-24.63	578,805.26	584,696.02	32.59111006	-104.19255114
5,000.00	11.75	181.87	4,922.97	-775.17	-25.30	578,784.91	584,695.36	32.59105414	-104.19255339
5,100.00	11.75	181.87	5,020.88	-795.52	-25.96	578,764.56	584,694.69	32.59099821	-104.19255563
5,200.00	11.75	181.87	5,118.79	-815.87	-26.62	578,744.22	584,694.03	32.59094229	-104.19255787
5,300.00	11.75	181.87	5,216.69	-836.21	-27.29	578,723.87	584,693.37	32.59088636	-104.19256011
5,400.00	11.75	181.87	5,314.60	-856.56	-27.95	578,703.52	584,692.70	32.59083044	-104.19256236
5,500.00	11.75	181.87	5,412.50	-876.91	-28.62	578,683.18	584,692.04	32.59077451	-104.19256460
5,600.00	11.75	181.87	5,510.41	-897.25	-29.28	578,662.83	584,691.37	32.59071859	-104.19256684
5,700.00	11.75	181.87	5,608.32	-917.60	-29.94	578,642.48	584,690.71	32.59066266	-104.19256909
5,800.00	11.75	181.87	5,706.22	-937.95	-30.61	578,622.14	584,690.05	32.59060674	-104.19257133
5,900.00	11.75	181.87	5,804.13	-958.29	-31.27	578,601.79	584,689.38	32.59055081	-104.19257357
6,000.00	11.75	181.87	5,902.03	-978.64	-31.93	578,581.44	584,688.72	32.59049489	-104.19257582
6,100.00	11.75	181.87	5,999.94	-998.98	-32.60	578,561.10	584,688.05	32.59043896	-104.19257806
6,200.00	11.75	181.87	6,097.85	-1,019.33	-33.26	578,540.75	584,687.39	32.59038304	-104.19258030
6,220.59	11.75	181.87	6,118.00	-1,023.52	-33.40	578,536.56	584,687.25	32.59037153	-104.19258077
FBSG									
6,300.00	11.75	181.87	6,195.75	-1,039.68	-33.93	578,520.40	584,686.73	32.59032711	-104.19258255
6,400.00	11.75	181.87	6,293.66	-1,060.02	-34.59	578,500.06	584,686.06	32.59027119	-104.19258479
6,500.00	11.75	181.87	6,391.56	-1,080.37	-35.25	578,479.71	584,685.40	32.59021526	-104.19258703
6,600.00	11.75	181.87	6,489.47	-1,100.72	-35.92	578,459.37	584,684.73	32.59015934	-104.19258928
6,700.00	11.75	181.87	6,587.38	-1,121.06	-36.58	578,439.02	584,684.07	32.59010341	-104.19259152
6,800.00	11.75	181.87	6,685.28	-1,141.41	-37.25	578,418.67	584,683.41	32.59004749	-104.19259376
6,900.00	11.75	181.87	6,783.19	-1,161.76	-37.91	578,398.33	584,682.74	32.58999156	-104.19259601
7,000.00	11.75	181.87	6,881.09	-1,182.10	-38.57	578,377.98	584,682.08	32.58993564	-104.19259825
7,100.00	11.75	181.87	6,979.00	-1,202.45	-39.24	578,357.63	584,681.41	32.58987971	-104.19260049
7,200.00	11.75	181.87	7,076.91	-1,222.80	-39.90	578,337.29	584,680.75	32.58982379	-104.19260274
7,300.00	11.75	181.87	7,174.81	-1,243.14	-40.57	578,316.94	584,680.09	32.58976786	-104.19260498
7,318.58	11.75	181.87	7,193.00	-1,246.92	-40.69	578,313.16	584,679.96	32.58975747	-104.19260540
SBSG									
7,400.00	11.75	181.87	7,272.72	-1,263.49	-41.23	578,296.59	584,679.42	32.58971194	-104.19260722
7,500.00	11.75	181.87	7,370.62	-1,283.84	-41.89	578,276.25	584,678.76	32.58965601	-104.19260946
7,600.00	11.75	181.87	7,468.53	-1,304.18	-42.56	578,255.90	584,678.10	32.58960009	-104.19261171
7,700.00	11.75	181.87	7,566.44	-1,324.53	-43.22	578,235.55	584,677.43	32.58954416	-104.19261395
7,800.00	11.75	181.87	7,664.34	-1,344.88	-43.89	578,215.21	584,676.77	32.58948824	-104.19261619
7,900.00	11.75	181.87	7,762.25	-1,365.22	-44.55	578,194.86	584,676.10	32.58943231	-104.19261844
8,000.00	11.75	181.87	7,860.15	-1,385.57	-45.21	578,174.51	584,675.44	32.58937639	-104.19262068



Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well (A04) Koala 9 Fed Com 132H
Company:	Colgate Energy	TVD Reference:	3288+30 @ 3318.00usft
Project:	(Permit) Eddy County, NM (83-NME)	MD Reference:	3288+30 @ 3318.00usft
Site:	(Permit) Koala 9 Fed Com	North Reference:	Grid
Well:	(A04) Koala 9 Fed Com 132H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,069.78	11.75	181.87	7,928.47	-1,399.77	-45.68	578,160.32	584,674.98	32.58933736	-104.19262225	
KOP: 8069.78' MD, -55.94' VS,7928.47' TVD										
8,100.00	12.01	167.20	7,958.05	-1,405.91	-45.08	578,154.17	584,675.57	32.58932048	-104.19262034	
8,150.00	13.93	146.47	8,006.80	-1,416.00	-40.60	578,144.08	584,680.05	32.58929271	-104.19260583	
8,200.00	17.12	131.99	8,054.99	-1,425.95	-31.80	578,134.13	584,688.85	32.58926534	-104.19257730	
8,250.00	21.02	122.32	8,102.25	-1,435.68	-18.74	578,124.41	584,701.91	32.58923856	-104.19253495	
8,300.00	25.29	115.68	8,148.22	-1,445.10	-1.53	578,114.98	584,719.12	32.58921259	-104.19247911	
8,350.00	29.77	110.88	8,192.55	-1,454.16	19.70	578,105.92	584,740.36	32.58918762	-104.19241020	
8,400.00	34.39	107.26	8,234.91	-1,462.78	44.80	578,097.30	584,765.46	32.58916384	-104.19232874	
8,441.08	38.24	104.87	8,268.00	-1,469.48	68.18	578,090.60	584,788.83	32.58914532	-104.19225288	
TBSG										
8,450.00	39.09	104.40	8,274.97	-1,470.89	73.57	578,089.19	584,794.23	32.58914143	-104.19223537	
8,500.00	43.85	102.08	8,312.43	-1,478.44	105.80	578,081.64	584,826.45	32.58912056	-104.19213077	
8,550.00	48.64	100.12	8,347.00	-1,485.37	141.23	578,074.72	584,861.88	32.58910139	-104.19201577	
8,600.00	53.47	98.44	8,378.42	-1,491.62	179.59	578,068.47	584,900.25	32.58908408	-104.19189122	
8,650.00	58.32	96.95	8,406.45	-1,497.14	220.61	578,062.94	584,941.26	32.58906874	-104.19175807	
8,700.00	63.18	95.61	8,430.87	-1,501.90	263.96	578,058.18	584,984.61	32.58905549	-104.19161735	
8,750.00	68.05	94.39	8,451.51	-1,505.86	309.31	578,054.22	585,029.96	32.58904445	-104.19147011	
8,800.00	72.93	93.24	8,468.20	-1,508.99	356.32	578,051.10	585,076.97	32.58903568	-104.19131749	
8,850.00	77.82	92.15	8,480.82	-1,511.26	404.63	578,048.82	585,125.28	32.58902926	-104.19116064	
8,900.00	82.71	91.11	8,489.27	-1,512.66	453.88	578,047.43	585,174.53	32.58902523	-104.19100075	
8,928.67	85.52	90.52	8,492.21	-1,513.06	482.39	578,047.02	585,203.05	32.58902402	-104.19090817	
20" Casing										
8,950.00	87.61	90.08	8,493.49	-1,513.17	503.68	578,046.91	585,224.33	32.58902364	-104.19083905	
8,974.43	90.00	89.58	8,494.00	-1,513.10	528.10	578,046.98	585,248.75	32.58902374	-104.19075977	
100'FWL - EOC: 8974.43' MD, 517.00' VS,8494.00' TVD - FTP(K9- 132H)										
9,000.00	90.00	89.58	8,494.00	-1,512.91	553.67	578,047.17	585,274.33	32.58902416	-104.19067674	
9,100.00	90.00	89.58	8,494.00	-1,512.19	653.67	578,047.89	585,374.32	32.58902579	-104.19035206	
9,200.00	90.00	89.58	8,494.00	-1,511.46	753.67	578,048.62	585,474.32	32.58902741	-104.19002738	
9,300.00	90.00	89.58	8,494.00	-1,510.74	853.66	578,049.35	585,574.32	32.58902904	-104.18970270	
9,400.00	90.00	89.58	8,494.00	-1,510.01	953.66	578,050.07	585,674.31	32.58903066	-104.18937802	
9,500.00	90.00	89.58	8,494.00	-1,509.28	1,053.66	578,050.80	585,774.31	32.58903229	-104.18905334	
9,600.00	90.00	89.58	8,494.00	-1,508.56	1,153.66	578,051.53	585,874.31	32.58903391	-104.18872866	
9,700.00	90.00	89.58	8,494.00	-1,507.83	1,253.65	578,052.25	585,974.31	32.58903553	-104.18840398	
9,800.00	90.00	89.58	8,494.00	-1,507.11	1,353.65	578,052.98	586,074.30	32.58903715	-104.18807930	
9,900.00	90.00	89.58	8,494.00	-1,506.38	1,453.65	578,053.70	586,174.30	32.58903877	-104.18775462	
10,000.00	90.00	89.58	8,494.00	-1,505.65	1,553.65	578,054.43	586,274.30	32.58904039	-104.18742994	
10,100.00	90.00	89.58	8,494.00	-1,504.93	1,653.64	578,055.16	586,374.30	32.58904201	-104.18710526	
10,200.00	90.00	89.58	8,494.00	-1,504.20	1,753.64	578,055.88	586,474.29	32.58904363	-104.18678058	
10,300.00	90.00	89.58	8,494.00	-1,503.47	1,853.64	578,056.61	586,574.29	32.58904524	-104.18645590	
10,400.00	90.00	89.58	8,494.00	-1,502.75	1,953.64	578,057.33	586,674.29	32.58904686	-104.18613122	
10,500.00	90.00	89.58	8,494.00	-1,502.02	2,053.63	578,058.06	586,774.29	32.58904848	-104.18580654	
10,600.00	90.00	89.58	8,494.00	-1,501.30	2,153.63	578,058.79	586,874.28	32.58905009	-104.18548186	
10,700.00	90.00	89.58	8,494.00	-1,500.57	2,253.63	578,059.51	586,974.28	32.58905170	-104.18515718	
10,800.00	90.00	89.58	8,494.00	-1,499.84	2,353.62	578,060.24	587,074.28	32.58905332	-104.18483250	
10,900.00	90.00	89.58	8,494.00	-1,499.12	2,453.62	578,060.97	587,174.28	32.58905493	-104.18450782	
11,000.00	90.00	89.58	8,494.00	-1,498.39	2,553.62	578,061.69	587,274.27	32.58905654	-104.18418314	
11,100.00	90.00	89.58	8,494.00	-1,497.67	2,653.62	578,062.42	587,374.27	32.58905815	-104.18385846	
11,200.00	90.00	89.58	8,494.00	-1,496.94	2,753.61	578,063.14	587,474.27	32.58905976	-104.18353378	
11,300.00	90.00	89.58	8,494.00	-1,496.21	2,853.61	578,063.87	587,574.26	32.58906137	-104.18320911	
11,400.00	90.00	89.58	8,494.00	-1,495.49	2,953.61	578,064.60	587,674.26	32.58906297	-104.18288443	
11,500.00	90.00	89.58	8,494.00	-1,494.76	3,053.61	578,065.32	587,774.26	32.58906458	-104.18255975	
11,539.59	90.00	89.58	8,494.00	-1,494.47	3,093.20	578,065.61	587,813.85	32.58906522	-104.18243121	
Enter NM 013232 - Exit NM 137444										



Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well (A04) Koala 9 Fed Com 132H
Company:	Colgate Energy	TVD Reference:	3288+30 @ 3318.00usft
Project:	(Permit) Eddy County, NM (83-NME)	MD Reference:	3288+30 @ 3318.00usft
Site:	(Permit) Koala 9 Fed Com	North Reference:	Grid
Well:	(A04) Koala 9 Fed Com 132H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
11,600.00	90.00	89.58	8,494.00	-1,494.04	3,153.60	578,066.05	587,874.26	32.58906619	-104.18223507	
11,700.00	90.00	89.58	8,494.00	-1,493.31	3,253.60	578,066.77	587,974.25	32.58906779	-104.18191039	
11,800.00	90.00	89.58	8,494.00	-1,492.58	3,353.60	578,067.50	588,074.25	32.58906940	-104.18158571	
11,900.00	90.00	89.58	8,494.00	-1,491.86	3,453.60	578,068.23	588,174.25	32.58907100	-104.18126103	
12,000.00	90.00	89.58	8,494.00	-1,491.13	3,553.59	578,068.95	588,274.25	32.58907260	-104.18093635	
12,100.00	90.00	89.58	8,494.00	-1,490.40	3,653.59	578,069.68	588,374.24	32.58907420	-104.18061167	
12,200.00	90.00	89.58	8,494.00	-1,489.68	3,753.59	578,070.40	588,474.24	32.58907580	-104.18028699	
12,300.00	90.00	89.58	8,494.00	-1,488.95	3,853.59	578,071.13	588,574.24	32.58907740	-104.17996231	
12,400.00	90.00	89.58	8,494.00	-1,488.23	3,953.58	578,071.86	588,674.24	32.58907900	-104.17963763	
12,500.00	90.00	89.58	8,494.00	-1,487.50	4,053.58	578,072.58	588,774.23	32.58908060	-104.17931295	
12,600.00	90.00	89.58	8,494.00	-1,486.77	4,153.58	578,073.31	588,874.23	32.58908220	-104.17898827	
12,700.00	90.00	89.58	8,494.00	-1,486.05	4,253.57	578,074.04	588,974.23	32.58908380	-104.17866359	
12,800.00	90.00	89.58	8,494.00	-1,485.32	4,353.57	578,074.76	589,074.23	32.58908539	-104.17833891	
12,900.00	90.00	89.58	8,494.00	-1,484.60	4,453.57	578,075.49	589,174.22	32.58908699	-104.17801423	
13,000.00	90.00	89.58	8,494.00	-1,483.87	4,553.57	578,076.21	589,274.22	32.58908858	-104.17768955	
13,100.00	90.00	89.58	8,494.00	-1,483.14	4,653.56	578,076.94	589,374.22	32.58909017	-104.17736487	
13,200.00	90.00	89.58	8,494.00	-1,482.42	4,753.56	578,077.67	589,474.21	32.58909177	-104.17704019	
13,300.00	90.00	89.58	8,494.00	-1,481.69	4,853.56	578,078.39	589,574.21	32.58909336	-104.17671551	
13,400.00	90.00	89.58	8,494.00	-1,480.96	4,953.56	578,079.12	589,674.21	32.58909495	-104.17639083	
13,500.00	90.00	89.58	8,494.00	-1,480.24	5,053.55	578,079.84	589,774.21	32.58909654	-104.17606615	
13,600.00	90.00	89.58	8,494.00	-1,479.51	5,153.55	578,080.57	589,874.20	32.58909813	-104.17574147	
13,700.00	90.00	89.58	8,494.00	-1,478.79	5,253.55	578,081.30	589,974.20	32.58909972	-104.17541679	
13,800.00	90.00	89.58	8,494.00	-1,478.06	5,353.55	578,082.02	590,074.20	32.58910130	-104.17509211	
13,900.00	90.00	89.58	8,494.00	-1,477.33	5,453.54	578,082.75	590,174.20	32.58910289	-104.17476743	
14,000.00	90.00	89.58	8,494.00	-1,476.61	5,553.54	578,083.47	590,274.19	32.58910448	-104.17444275	
14,100.00	90.00	89.58	8,494.00	-1,475.88	5,653.54	578,084.20	590,374.19	32.58910606	-104.17411807	
14,200.00	90.00	89.58	8,494.00	-1,475.16	5,753.54	578,084.93	590,474.19	32.58910765	-104.17379339	
14,204.79	90.00	89.58	8,494.00	-1,475.12	5,758.33	578,084.96	590,478.98	32.58910772	-104.17377784	
Exit NM 013232 - Enter NM 015003										
14,300.00	90.00	89.58	8,494.00	-1,474.43	5,853.53	578,085.65	590,574.19	32.58910923	-104.17346871	
14,400.00	90.00	89.58	8,494.00	-1,473.70	5,953.53	578,086.38	590,674.18	32.58911081	-104.17314403	
14,500.00	90.00	89.58	8,494.00	-1,472.98	6,053.53	578,087.11	590,774.18	32.58911239	-104.17281935	
14,600.00	90.00	89.58	8,494.00	-1,472.25	6,153.52	578,087.83	590,874.18	32.58911397	-104.17249467	
14,700.00	90.00	89.58	8,494.00	-1,471.53	6,253.52	578,088.56	590,974.18	32.58911555	-104.17216999	
14,800.00	90.00	89.58	8,494.00	-1,470.80	6,353.52	578,089.28	591,074.17	32.58911713	-104.17184531	
14,900.00	90.00	89.58	8,494.00	-1,470.07	6,453.52	578,090.01	591,174.17	32.58911871	-104.17152063	
15,000.00	90.00	89.58	8,494.00	-1,469.35	6,553.51	578,090.74	591,274.17	32.58912029	-104.17119595	
15,100.00	90.00	89.58	8,494.00	-1,468.62	6,653.51	578,091.46	591,374.16	32.58912187	-104.17087127	
15,200.00	90.00	89.58	8,494.00	-1,467.89	6,753.51	578,092.19	591,474.16	32.58912344	-104.17054659	
15,300.00	90.00	89.58	8,494.00	-1,467.17	6,853.51	578,092.91	591,574.16	32.58912502	-104.17022191	
15,400.00	90.00	89.58	8,494.00	-1,466.44	6,953.50	578,093.64	591,674.16	32.58912659	-104.16989723	
15,500.00	90.00	89.58	8,494.00	-1,465.72	7,053.50	578,094.37	591,774.15	32.58912816	-104.16957255	
15,600.00	90.00	89.58	8,494.00	-1,464.99	7,153.50	578,095.09	591,874.15	32.58912974	-104.16924787	
15,700.00	90.00	89.58	8,494.00	-1,464.26	7,253.50	578,095.82	591,974.15	32.58913131	-104.16892319	
15,800.00	90.00	89.58	8,494.00	-1,463.54	7,353.49	578,096.55	592,074.15	32.58913288	-104.16859851	
15,900.00	90.00	89.58	8,494.00	-1,462.81	7,453.49	578,097.27	592,174.14	32.58913445	-104.16827383	
16,000.00	90.00	89.58	8,494.00	-1,462.09	7,553.49	578,098.00	592,274.14	32.58913602	-104.16794915	
16,100.00	90.00	89.58	8,494.00	-1,461.36	7,653.49	578,098.72	592,374.14	32.58913759	-104.16762447	
16,200.00	90.00	89.58	8,494.00	-1,460.63	7,753.48	578,099.45	592,474.14	32.58913915	-104.16729979	
16,300.00	90.00	89.58	8,494.00	-1,459.91	7,853.48	578,100.18	592,574.13	32.58914072	-104.16697511	
16,400.00	90.00	89.58	8,494.00	-1,459.18	7,953.48	578,100.90	592,674.13	32.58914228	-104.16665043	
16,500.00	90.00	89.58	8,494.00	-1,458.45	8,053.47	578,101.63	592,774.13	32.58914385	-104.16632575	
16,600.00	90.00	89.58	8,494.00	-1,457.73	8,153.47	578,102.35	592,874.12	32.58914541	-104.16600107	
16,700.00	90.00	89.58	8,494.00	-1,457.00	8,253.47	578,103.08	592,974.12	32.58914698	-104.16567639	



Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well (A04) Koala 9 Fed Com 132H
Company:	Colgate Energy	TVD Reference:	3288+30 @ 3318.00usft
Project:	(Permit) Eddy County, NM (83-NME)	MD Reference:	3288+30 @ 3318.00usft
Site:	(Permit) Koala 9 Fed Com	North Reference:	Grid
Well:	(A04) Koala 9 Fed Com 132H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,800.00	90.00	89.58	8,494.00	-1,456.28	8,353.47	578,103.81	593,074.12	32.58914854	-104.16535171
16,900.00	90.00	89.58	8,494.00	-1,455.55	8,453.46	578,104.53	593,174.12	32.58915010	-104.16502703
17,000.00	90.00	89.58	8,494.00	-1,454.82	8,553.46	578,105.26	593,274.11	32.58915166	-104.16470235
17,100.00	90.00	89.58	8,494.00	-1,454.10	8,653.46	578,105.98	593,374.11	32.58915322	-104.16437767
17,200.00	90.00	89.58	8,494.00	-1,453.37	8,753.46	578,106.71	593,474.11	32.58915478	-104.16405299
17,300.00	90.00	89.58	8,494.00	-1,452.65	8,853.45	578,107.44	593,574.11	32.58915634	-104.16372831
17,400.00	90.00	89.58	8,494.00	-1,451.92	8,953.45	578,108.16	593,674.10	32.58915789	-104.16340363
17,500.00	90.00	89.58	8,494.00	-1,451.19	9,053.45	578,108.89	593,774.10	32.58915945	-104.16307895
17,600.00	90.00	89.58	8,494.00	-1,450.47	9,153.45	578,109.62	593,874.10	32.58916101	-104.16275427
17,700.00	90.00	89.58	8,494.00	-1,449.74	9,253.44	578,110.34	593,974.10	32.58916256	-104.16242959
17,800.00	90.00	89.58	8,494.00	-1,449.02	9,353.44	578,111.07	594,074.09	32.58916412	-104.16210491
17,900.00	90.00	89.58	8,494.00	-1,448.29	9,453.44	578,111.79	594,174.09	32.58916567	-104.16178023
18,000.00	90.00	89.58	8,494.00	-1,447.56	9,553.44	578,112.52	594,274.09	32.58916722	-104.16145555
18,100.00	90.00	89.58	8,494.00	-1,446.84	9,653.43	578,113.25	594,374.09	32.58916877	-104.16113087
18,200.00	90.00	89.58	8,494.00	-1,446.11	9,753.43	578,113.97	594,474.08	32.58917032	-104.16080619
18,300.00	90.00	89.58	8,494.00	-1,445.38	9,853.43	578,114.70	594,574.08	32.58917187	-104.16048151
18,400.00	90.00	89.58	8,494.00	-1,444.66	9,953.42	578,115.42	594,674.08	32.58917342	-104.16015683
18,500.00	90.00	89.58	8,494.00	-1,443.93	10,053.42	578,116.15	594,774.07	32.58917497	-104.15983215
18,600.00	90.00	89.58	8,494.00	-1,443.21	10,153.42	578,116.88	594,874.07	32.58917652	-104.15950747
18,700.00	90.00	89.58	8,494.00	-1,442.48	10,253.42	578,117.60	594,974.07	32.58917806	-104.15918279
18,800.00	90.00	89.58	8,494.00	-1,441.75	10,353.41	578,118.33	595,074.07	32.58917961	-104.15885811
18,900.00	90.00	89.58	8,494.00	-1,441.03	10,453.41	578,119.06	595,174.06	32.58918115	-104.15853343
19,000.00	90.00	89.58	8,494.00	-1,440.30	10,553.41	578,119.78	595,274.06	32.58918270	-104.15820875
19,100.00	90.00	89.58	8,494.00	-1,439.58	10,653.41	578,120.51	595,374.06	32.58918424	-104.15788407
19,200.00	90.00	89.58	8,494.00	-1,438.85	10,753.40	578,121.23	595,474.06	32.58918578	-104.15755939
19,300.00	90.00	89.58	8,494.00	-1,438.12	10,853.40	578,121.96	595,574.05	32.58918732	-104.15723471
19,400.00	90.00	89.58	8,494.00	-1,437.40	10,953.40	578,122.69	595,674.05	32.58918886	-104.15691003
19,419.75	90.00	89.58	8,494.00	-1,437.25	10,973.15	578,122.83	595,693.80	32.58918917	-104.15684590
100'FEL - LTP(K9- 132H)									
19,509.77	90.00	89.58	8,494.00	-1,436.60	11,063.17	578,123.48	595,783.82	32.58919055	-104.15655362
TD: 19509.77' MD, 11052.34' VS,8494.00' TVD - PBHL(K9- 132H)									

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FTP(K9- 132H) - hit/miss target - Shape	0.00	0.00	8,494.00	-1,513.10	528.10	578,046.98	585,248.75	32.58902374	-104.19075977	
LTP(K9- 132H) - plan hits target center - Point	0.00	0.00	8,494.00	-1,437.32	10,973.15	578,122.76	595,693.80	32.58918899	-104.15684589	
PBHL(K9- 132H) - plan hits target center - Point	0.00	0.00	8,494.00	-1,436.60	11,063.17	578,123.48	595,783.82	32.58919055	-104.15655361	



Planning Report - Geographic

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well (A04) Koala 9 Fed Com 132H
Company:	Colgate Energy	TVD Reference:	3288+30 @ 3318.00usft
Project:	(Permit) Eddy County, NM (83-NME)	MD Reference:	3288+30 @ 3318.00usft
Site:	(Permit) Koala 9 Fed Com	North Reference:	Grid
Well:	(A04) Koala 9 Fed Com 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev00		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
8,928.67	8,492.21	20" Casing	20	24

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
241.00	241.00	Rustler				
382.00	382.00	T/Salt				
768.00	768.00	Tansill				
843.00	843.00	Yates				
1,218.84	1,218.00	Seven Rivers				
1,819.42	1,809.00	Queen				
2,032.89	2,018.00	Grayburg				
2,441.45	2,418.00	San Andres				
3,028.75	2,993.00	CYCN				
4,637.43	4,568.00	BSGL				
6,220.59	6,118.00	FBSG				
7,318.58	7,193.00	SBSG				
8,441.08	8,268.00	TBSG				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
8,069.78	7,928.47	-1,399.77	-45.68	KOP: 8069.78' MD, -55.94' VS, 7928.47' TVD	
8,974.43	8,494.00	-1,513.10	528.10	100'FWL	
8,974.43	8,494.00	-1,513.10	528.10	EOC: 8974.43' MD, 517.00' VS, 8494.00' TVD	
11,539.59	8,494.00	-1,494.47	3,093.20	Enter NM 013232	
11,539.59	8,494.00	-1,494.47	3,093.20	Exit NM 137444	
14,204.79	8,494.00	-1,475.12	5,758.33	Exit NM 013232	
14,204.79	8,494.00	-1,475.12	5,758.33	Enter NM 015003	
19,419.75	8,494.00	-1,437.25	10,973.15	100'FEL	
19,509.77	8,494.00	-1,436.60	11,063.17	TD: 19509.77' MD, 11052.34' VS, 8494.00' TVD	



Colgate Energy

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

(Permit) Koala 9 Fed Com

(B04) Koala 9 Fed Com 134H

Permit

APD-Rev00

Anticollision Report

13 May, 2022



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	19,235.87	APD-Rev00 (Permit)	MWD+IFR1+SAG+FDIR	(SQ OWSG MWD + IFR1 + Sag + FDIR Correction)

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
(Permit) Koala 9 Fed Com						
(A01) Koala 9 Fed Com 201H - Permit - APD-Rev00	16,200.00	16,589.82	4,646.48	4,460.17	24.938	CC
(A01) Koala 9 Fed Com 201H - Permit - APD-Rev00	19,235.87	19,625.69	4,648.68	4,397.19	18.484	ES, SF
(A02) Koala 9 Fed Com 202H - Permit - APD-Rev00	13,700.00	14,148.15	3,329.04	3,194.40	24.725	CC
(A02) Koala 9 Fed Com 202H - Permit - APD-Rev00	19,235.87	19,684.02	3,332.53	3,081.31	13.266	ES, SF
(A03) Koala 9 Fed Com 131H - Permit - APD-Rev00	15,000.00	15,037.30	3,976.14	3,815.52	24.755	CC
(A03) Koala 9 Fed Com 131H - Permit - APD-Rev00	19,235.87	19,273.17	3,979.15	3,727.78	15.830	ES, SF
(A04) Koala 9 Fed Com 132H - Permit - APD-Rev00	12,300.00	12,518.67	2,654.88	2,547.88	24.814	CC
(A04) Koala 9 Fed Com 132H - Permit - APD-Rev00	19,235.87	19,454.54	2,659.25	2,407.76	10.574	ES, SF
(A05) Koala 9 Fed Com 121H - Permit - APD-Rev00	15,700.00	14,540.68	4,167.77	4,000.90	24.975	CC
(A05) Koala 9 Fed Com 121H - Permit - APD-Rev00	19,235.87	18,076.55	4,170.05	3,929.32	17.323	ES, SF
(A06) Koala 9 Fed Com 122H - Permit - APD-Rev00	13,600.00	12,583.71	2,934.00	2,816.39	24.946	CC
(A06) Koala 9 Fed Com 122H - Permit - APD-Rev00	19,235.87	18,219.58	2,937.22	2,708.01	12.815	ES, SF
(A07) Koala 9 Fed Com 111H - Permit - APD-Rev00	17,400.00	15,095.37	4,606.23	4,421.22	24.896	CC
(A07) Koala 9 Fed Com 111H - Permit - APD-Rev00	19,235.87	16,931.24	4,607.40	4,386.56	20.863	ES, SF
(A08) Koala 9 Fed Com 112H - Permit - APD-Rev00	16,100.00	13,972.36	3,529.01	3,386.90	24.832	CC
(A08) Koala 9 Fed Com 112H - Permit - APD-Rev00	19,235.87	17,108.22	3,530.73	3,333.52	17.903	ES, SF
(B01) Koala 9 Fed Com 203H - Permit - APD-Rev00	800.00	800.00	89.98	84.71	17.076	CC
(B01) Koala 9 Fed Com 203H - Permit - APD-Rev00	1,000.00	999.69	90.27	83.57	13.472	ES
(B01) Koala 9 Fed Com 203H - Permit - APD-Rev00	19,235.87	19,670.59	2,007.20	1,759.20	8.093	SF
(B02) Koala 9 Fed Com 204H - Permit - APD-Rev00	1,200.00	1,200.00	59.97	51.83	7.370	CC
(B02) Koala 9 Fed Com 204H - Permit - APD-Rev00	1,500.00	1,499.44	61.42	51.29	6.064	ES
(B02) Koala 9 Fed Com 204H - Permit - APD-Rev00	19,235.87	19,569.37	737.88	508.69	3.219	SF
(B03) Koala 9 Fed Com 133H - Permit - APD-Rev00	1,200.00	1,200.00	29.96	21.82	3.682	CC
(B03) Koala 9 Fed Com 133H - Permit - APD-Rev00	1,300.00	1,299.87	30.10	21.27	3.407	ES
(B03) Koala 9 Fed Com 133H - Permit - APD-Rev00	1,400.00	1,399.33	31.83	22.32	3.346	SF
(B05) Koala 9 Fed Com 123H - Permit - APD-Rev00	1,218.71	1,218.72	30.00	21.73	3.628	CC
(B05) Koala 9 Fed Com 123H - Permit - APD-Rev00	1,300.00	1,299.99	30.11	21.27	3.407	ES
(B05) Koala 9 Fed Com 123H - Permit - APD-Rev00	1,400.00	1,399.57	31.73	22.22	3.335	SF
(B06) Koala 9 Fed Com 124H - Permit - APD-Rev00	1,894.20	1,894.77	59.85	47.04	4.673	CC
(B06) Koala 9 Fed Com 124H - Permit - APD-Rev00	2,200.00	2,200.39	60.82	45.86	4.067	ES
(B06) Koala 9 Fed Com 124H - Permit - APD-Rev00	6,911.12	6,918.67	104.70	55.71	2.137	SF
(B07) Koala 9 Fed Com 113H - Permit - APD-Rev00	1,271.02	1,271.15	90.01	81.38	10.426	CC
(B07) Koala 9 Fed Com 113H - Permit - APD-Rev00	1,400.00	1,399.90	90.47	80.95	9.505	ES
(B07) Koala 9 Fed Com 113H - Permit - APD-Rev00	1,600.00	1,596.57	98.60	87.72	9.063	SF
(B08) Koala 9 Fed Com 114H - Permit - APD-Rev00	1,018.02	1,018.14	119.86	113.08	17.677	CC
(B08) Koala 9 Fed Com 114H - Permit - APD-Rev00	1,100.00	1,099.87	119.99	112.64	16.331	ES
(B08) Koala 9 Fed Com 114H - Permit - APD-Rev00	5,855.57	5,858.14	190.37	148.83	4.583	SF

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	6,552.22	6,493.91	3,099.39	2,904.88	15.934	CC
W02_GOVERNMENT AO COM #001_1524032 - Inc Only	8,004.98	7,947.00	3,102.55	2,840.99	11.862	ES
W02_GOVERNMENT AO COM #001_1524032 - Inc Only	8,200.00	8,136.01	3,135.59	2,868.91	11.758	SF
W03_PRE-ONGARD WELL #001_1525793 - Inc Only - In	4,786.71	4,711.00	1,745.71	1,629.79	15.059	CC, ES
W03_PRE-ONGARD WELL #001_1525793 - Inc Only - In	4,800.00	4,711.00	1,745.76	1,629.80	15.055	SF
W04_FEDERAL V #001_1526451 - Inc Only - Inc Only	5,000.00	4,957.99	3,262.30	3,131.28	24.900	CC, ES
W04_FEDERAL V #001_1526451 - Inc Only - Inc Only	8,500.00	8,404.09	3,648.37	3,414.83	15.622	SF
W05_FEDERAL V #002_1526702 - Inc Only - Inc Only						Out of range
W06_FEDERAL V #003_1526867 - Depth Only - Depth O	3,100.00	3,076.95	4,991.65	4,786.59	24.343	CC
W06_FEDERAL V #003_1526867 - Depth Only - Depth O	6,300.00	6,248.09	5,186.80	4,769.71	12.436	ES
W06_FEDERAL V #003_1526867 - Depth Only - Depth O	6,400.00	6,300.00	5,193.65	4,772.94	12.345	SF
W07_PRE-ONGARD WELL #001_1527282 - Depth Only	5,853.87	5,781.98	1,638.34	1,252.20	4.243	CC
W07_PRE-ONGARD WELL #001_1527282 - Depth Only	7,500.00	7,413.67	1,652.68	1,157.35	3.337	ES
W07_PRE-ONGARD WELL #001_1527282 - Depth Only	7,600.00	7,450.00	1,655.34	1,157.84	3.327	SF
W08_FEDERAL V COM #004_1535127 - Inc Only - Inc O	7,700.00	7,671.78	5,300.81	5,085.76	24.648	CC
W08_FEDERAL V COM #004_1535127 - Inc Only - Inc O	8,003.88	7,919.56	5,302.45	5,080.48	23.888	ES
W08_FEDERAL V COM #004_1535127 - Inc Only - Inc O	8,350.00	8,245.03	5,380.07	5,150.57	23.443	SF
W09_GOVERNMENT AB #002_1521480 - Inc Only - Inc	18,604.80	8,525.12	1,648.84	1,322.21	5.048	CC, ES
W09_GOVERNMENT AB #002_1521480 - Inc Only - Inc	18,700.00	8,525.11	1,651.59	1,324.25	5.046	SF
W10_GOVERNMENT AB #003_1521774 - Inc Only - Inc	15,932.99	8,511.73	1,648.80	1,392.64	6.436	CC, ES
W10_GOVERNMENT AB #003_1521774 - Inc Only - Inc	16,000.00	8,511.72	1,650.16	1,393.46	6.428	SF
W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc	14,668.22	6,554.00	4,722.87	4,501.75	21.358	CC
W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc	14,700.00	6,554.00	4,722.98	4,501.56	21.331	ES
W11_GOVERNMENT AB #006_1527846 - Inc Only - Inc	15,500.00	6,554.00	4,795.56	4,567.19	21.000	SF
W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc	15,988.75	6,590.00	4,707.56	4,461.32	19.117	CC
W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc	16,000.00	6,590.00	4,707.58	4,461.23	19.109	ES
W12_GOVERNMENT AB #007_1527847 - Inc Only - Inc	16,700.00	6,590.00	4,760.99	4,508.48	18.855	SF
W13_GOVERNMENT AB #008_1527863 - Inc Only - Inc	17,334.40	6,630.00	4,555.59	4,318.33	19.201	CC
W13_GOVERNMENT AB #008_1527863 - Inc Only - Inc	17,400.00	6,630.00	4,556.07	4,318.18	19.152	ES
W13_GOVERNMENT AB #008_1527863 - Inc Only - Inc	18,000.00	6,630.00	4,603.96	4,360.95	18.946	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						Out of range
W18_GOVERNMENT AB FEDERAL #012_1541049 - MW						Out of range

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 (SQ2)												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Rule Assigned:								
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	+N/-S	+E/-W	Between	Between	Minimum	Separation	Warning	
Depth	Depth	Depth	Depth	Depth	Depth	Toolface	(usft)	(usft)	Centres	Ellipses	Separation	Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)			(usft)	(usft)	(usft)			
16,200.00	8,523.00	16,589.82	8,839.00	92.28	94.46	-93.71	3,873.72	7,784.72	4,646.48	4,460.17	186.32	24.938	CC	
16,300.00	8,523.00	16,689.82	8,839.00	93.34	95.52	-93.71	3,874.45	7,884.72	4,646.56	4,458.12	188.43	24.659		
16,400.00	8,523.00	16,789.82	8,839.00	94.41	96.58	-93.71	3,875.19	7,984.71	4,646.63	4,456.08	190.55	24.385		
16,500.00	8,523.00	16,889.82	8,839.00	95.47	97.64	-93.71	3,875.93	8,084.71	4,646.70	4,454.03	192.67	24.117		
16,600.00	8,523.00	16,989.82	8,839.00	96.54	98.70	-93.71	3,876.66	8,184.71	4,646.77	4,451.98	194.80	23.854		
16,700.00	8,523.00	17,089.82	8,839.00	97.60	99.76	-93.71	3,877.40	8,284.71	4,646.85	4,449.92	196.92	23.597		

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
16,800.00	8,523.00	17,189.82	8,839.00	98.67	100.83	-93.71	3,878.13	8,384.70	4,646.92	4,447.87	199.05	23.345	
16,900.00	8,523.00	17,289.82	8,839.00	99.74	101.89	-93.71	3,878.87	8,484.70	4,646.99	4,445.81	201.18	23.098	
17,000.00	8,523.00	17,389.82	8,839.00	100.81	102.96	-93.71	3,879.60	8,584.70	4,647.06	4,443.75	203.32	22.856	
17,100.00	8,523.00	17,489.82	8,839.00	101.88	104.03	-93.71	3,880.34	8,684.70	4,647.14	4,441.68	205.45	22.619	
17,200.00	8,523.00	17,589.82	8,839.00	102.96	105.10	-93.71	3,881.07	8,784.69	4,647.21	4,439.62	207.59	22.387	
17,300.00	8,523.00	17,689.82	8,839.00	104.03	106.17	-93.71	3,881.81	8,884.69	4,647.28	4,437.55	209.73	22.158	
17,400.00	8,523.00	17,789.82	8,839.00	105.11	107.24	-93.71	3,882.55	8,984.69	4,647.35	4,435.48	211.87	21.935	
17,500.00	8,523.00	17,889.82	8,839.00	106.18	108.32	-93.71	3,883.28	9,084.68	4,647.43	4,433.41	214.02	21.715	
17,600.00	8,523.00	17,989.82	8,839.00	107.26	109.39	-93.71	3,884.02	9,184.68	4,647.50	4,431.34	216.16	21.500	
17,700.00	8,523.00	18,089.82	8,839.00	108.34	110.47	-93.71	3,884.75	9,284.68	4,647.57	4,429.26	218.31	21.289	
17,800.00	8,523.00	18,189.82	8,839.00	109.41	111.54	-93.71	3,885.49	9,384.68	4,647.64	4,427.18	220.46	21.082	
17,900.00	8,523.00	18,289.82	8,839.00	110.49	112.62	-93.71	3,886.22	9,484.67	4,647.71	4,425.10	222.61	20.878	
18,000.00	8,523.00	18,389.82	8,839.00	111.57	113.70	-93.71	3,886.96	9,584.67	4,647.79	4,423.02	224.76	20.679	
18,100.00	8,523.00	18,489.82	8,839.00	112.66	114.77	-93.71	3,887.69	9,684.67	4,647.86	4,420.94	226.92	20.483	
18,200.00	8,523.00	18,589.82	8,839.00	113.74	115.85	-93.71	3,888.43	9,784.67	4,647.93	4,418.86	229.07	20.290	
18,300.00	8,523.00	18,689.82	8,839.00	114.82	116.93	-93.71	3,889.17	9,884.66	4,648.00	4,416.77	231.23	20.101	
18,400.00	8,523.00	18,789.82	8,839.00	115.90	118.01	-93.71	3,889.90	9,984.66	4,648.08	4,414.69	233.39	19.915	
18,500.00	8,523.00	18,889.82	8,839.00	116.99	119.10	-93.71	3,890.64	10,084.66	4,648.15	4,412.60	235.55	19.733	
18,600.00	8,523.00	18,989.82	8,839.00	118.07	120.18	-93.71	3,891.37	10,184.65	4,648.22	4,410.51	237.71	19.554	
18,700.00	8,523.00	19,089.82	8,839.00	119.16	121.26	-93.71	3,892.11	10,284.65	4,648.29	4,408.42	239.88	19.378	
18,800.00	8,523.00	19,189.82	8,839.00	120.24	122.34	-93.71	3,892.84	10,384.65	4,648.37	4,406.32	242.04	19.205	
18,900.00	8,523.00	19,289.82	8,839.00	121.33	123.43	-93.71	3,893.58	10,484.65	4,648.44	4,404.23	244.21	19.035	
19,000.00	8,523.00	19,389.82	8,839.00	122.42	124.51	-93.71	3,894.32	10,584.64	4,648.51	4,402.13	246.38	18.867	
19,100.00	8,523.00	19,489.82	8,839.00	123.51	125.60	-93.71	3,895.05	10,684.64	4,648.58	4,400.04	248.55	18.703	
19,200.00	8,523.00	19,589.82	8,839.00	124.59	126.69	-93.71	3,895.79	10,784.64	4,648.65	4,397.94	250.72	18.542	
19,235.87	8,523.00	19,625.69	8,839.00	124.99	127.08	-93.71	3,896.05	10,820.51	4,648.68	4,397.19	251.49	18.484 ES, SF	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,700.00	8,523.00	14,148.15	8,839.00	66.39	68.49	-95.19	2,535.86	5,294.80	3,329.04	3,194.40	134.64	24.725	CC
13,800.00	8,523.00	14,248.15	8,839.00	67.39	69.50	-95.19	2,536.58	5,394.80	3,329.10	3,192.46	136.64	24.365	
13,900.00	8,523.00	14,348.15	8,839.00	68.39	70.50	-95.19	2,537.31	5,494.79	3,329.16	3,190.53	138.64	24.013	
14,000.00	8,523.00	14,448.15	8,839.00	69.40	71.51	-95.19	2,538.03	5,594.79	3,329.23	3,188.58	140.65	23.671	
14,100.00	8,523.00	14,548.15	8,839.00	70.42	72.52	-95.19	2,538.76	5,694.79	3,329.29	3,186.63	142.66	23.337	
14,200.00	8,523.00	14,648.15	8,839.00	71.43	73.53	-95.19	2,539.49	5,794.79	3,329.35	3,184.67	144.68	23.011	
14,300.00	8,523.00	14,748.15	8,839.00	72.45	74.55	-95.19	2,540.21	5,894.78	3,329.42	3,182.70	146.71	22.693	
14,400.00	8,523.00	14,848.15	8,839.00	73.48	75.57	-95.19	2,540.94	5,994.78	3,329.48	3,180.73	148.75	22.383	
14,500.00	8,523.00	14,948.15	8,839.00	74.50	76.60	-95.19	2,541.67	6,094.78	3,329.54	3,178.75	150.79	22.081	
14,600.00	8,523.00	15,048.15	8,839.00	75.53	77.62	-95.19	2,542.39	6,194.77	3,329.61	3,176.77	152.83	21.786	
14,700.00	8,523.00	15,148.15	8,839.00	76.56	78.65	-95.19	2,543.12	6,294.77	3,329.67	3,174.78	154.88	21.498	
14,800.00	8,523.00	15,248.15	8,839.00	77.60	79.68	-95.19	2,543.85	6,394.77	3,329.73	3,172.79	156.94	21.217	
14,900.00	8,523.00	15,348.15	8,839.00	78.63	80.72	-95.19	2,544.57	6,494.77	3,329.79	3,170.79	159.00	20.942	
15,000.00	8,523.00	15,448.15	8,839.00	79.67	81.75	-95.19	2,545.30	6,594.76	3,329.86	3,168.79	161.06	20.674	
15,100.00	8,523.00	15,548.15	8,839.00	80.71	82.79	-95.19	2,546.03	6,694.76	3,329.92	3,166.79	163.13	20.412	
15,200.00	8,523.00	15,648.15	8,839.00	81.75	83.83	-95.19	2,546.75	6,794.76	3,329.98	3,164.78	165.21	20.156	
15,300.00	8,523.00	15,748.15	8,839.00	82.80	84.87	-95.19	2,547.48	6,894.76	3,330.05	3,162.76	167.29	19.906	
15,400.00	8,523.00	15,848.15	8,839.00	83.84	85.92	-95.19	2,548.20	6,994.75	3,330.11	3,160.74	169.37	19.662	
15,500.00	8,523.00	15,948.15	8,839.00	84.89	86.96	-95.19	2,548.93	7,094.75	3,330.17	3,158.72	171.45	19.423	
15,600.00	8,523.00	16,048.15	8,839.00	85.94	88.01	-95.19	2,549.66	7,194.75	3,330.24	3,156.69	173.54	19.190	
15,700.00	8,523.00	16,148.15	8,839.00	87.00	89.06	-95.19	2,550.38	7,294.75	3,330.30	3,154.66	175.64	18.961	
15,800.00	8,523.00	16,248.15	8,839.00	88.05	90.11	-95.19	2,551.11	7,394.74	3,330.36	3,152.63	177.73	18.738	
15,900.00	8,523.00	16,348.15	8,839.00	89.11	91.17	-95.19	2,551.84	7,494.74	3,330.42	3,150.59	179.83	18.520	
16,000.00	8,523.00	16,448.15	8,839.00	90.16	92.22	-95.19	2,552.56	7,594.74	3,330.49	3,148.55	181.94	18.306	
16,100.00	8,523.00	16,548.15	8,839.00	91.22	93.28	-95.19	2,553.29	7,694.73	3,330.55	3,146.51	184.04	18.097	
16,200.00	8,523.00	16,648.15	8,839.00	92.28	94.34	-95.19	2,554.02	7,794.73	3,330.61	3,144.46	186.15	17.892	
16,300.00	8,523.00	16,748.15	8,839.00	93.34	95.40	-95.19	2,554.74	7,894.73	3,330.68	3,142.41	188.26	17.692	
16,400.00	8,523.00	16,848.15	8,839.00	94.41	96.46	-95.18	2,555.47	7,994.73	3,330.74	3,140.36	190.38	17.495	
16,500.00	8,523.00	16,948.15	8,839.00	95.47	97.52	-95.18	2,556.20	8,094.72	3,330.80	3,138.31	192.50	17.303	
16,600.00	8,523.00	17,048.15	8,839.00	96.54	98.58	-95.18	2,556.92	8,194.72	3,330.87	3,136.25	194.62	17.115	
16,700.00	8,523.00	17,148.15	8,839.00	97.60	99.65	-95.18	2,557.65	8,294.72	3,330.93	3,134.19	196.74	16.931	
16,800.00	8,523.00	17,248.15	8,839.00	98.67	100.72	-95.18	2,558.37	8,394.72	3,330.99	3,132.13	198.86	16.750	
16,900.00	8,523.00	17,348.15	8,839.00	99.74	101.78	-95.18	2,559.10	8,494.71	3,331.06	3,130.06	200.99	16.573	
17,000.00	8,523.00	17,448.15	8,839.00	100.81	102.85	-95.18	2,559.83	8,594.71	3,331.12	3,128.00	203.12	16.400	
17,100.00	8,523.00	17,548.15	8,839.00	101.88	103.92	-95.18	2,560.55	8,694.71	3,331.18	3,125.93	205.25	16.230	
17,200.00	8,523.00	17,648.15	8,839.00	102.96	104.99	-95.18	2,561.28	8,794.71	3,331.24	3,123.86	207.39	16.063	
17,300.00	8,523.00	17,748.15	8,839.00	104.03	106.06	-95.18	2,562.01	8,894.70	3,331.31	3,121.78	209.52	15.899	
17,400.00	8,523.00	17,848.15	8,839.00	105.11	107.14	-95.18	2,562.73	8,994.70	3,331.37	3,119.71	211.66	15.739	
17,500.00	8,523.00	17,948.15	8,839.00	106.18	108.21	-95.18	2,563.46	9,094.70	3,331.43	3,117.63	213.80	15.582	
17,600.00	8,523.00	18,048.15	8,839.00	107.26	109.29	-95.18	2,564.19	9,194.69	3,331.50	3,115.55	215.95	15.428	
17,700.00	8,523.00	18,148.15	8,839.00	108.34	110.36	-95.18	2,564.91	9,294.69	3,331.56	3,113.47	218.09	15.276	
17,800.00	8,523.00	18,248.15	8,839.00	109.41	111.44	-95.18	2,565.64	9,394.69	3,331.62	3,111.39	220.24	15.128	
17,900.00	8,523.00	18,348.15	8,839.00	110.49	112.52	-95.18	2,566.37	9,494.69	3,331.69	3,109.30	222.38	14.982	
18,000.00	8,523.00	18,448.15	8,839.00	111.57	113.60	-95.18	2,567.09	9,594.68	3,331.75	3,107.22	224.53	14.839	
18,100.00	8,523.00	18,548.15	8,839.00	112.66	114.67	-95.18	2,567.82	9,694.68	3,331.81	3,105.13	226.68	14.698	
18,200.00	8,523.00	18,648.15	8,839.00	113.74	115.75	-95.18	2,568.54	9,794.68	3,331.88	3,103.04	228.84	14.560	
18,300.00	8,523.00	18,748.15	8,839.00	114.82	116.84	-95.18	2,569.27	9,894.68	3,331.94	3,100.95	230.99	14.425	
18,400.00	8,523.00	18,848.15	8,839.00	115.90	117.92	-95.18	2,570.00	9,994.67	3,332.00	3,098.86	233.15	14.292	
18,500.00	8,523.00	18,948.15	8,839.00	116.99	119.00	-95.18	2,570.72	10,094.67	3,332.06	3,096.76	235.30	14.161	
18,600.00	8,523.00	19,048.15	8,839.00	118.07	120.08	-95.18	2,571.45	10,194.67	3,332.13	3,094.67	237.46	14.032	
18,700.00	8,523.00	19,148.15	8,839.00	119.16	121.17	-95.18	2,572.18	10,294.67	3,332.19	3,092.57	239.62	13.906	
18,800.00	8,523.00	19,248.15	8,839.00	120.24	122.25	-95.18	2,572.90	10,394.66	3,332.25	3,090.47	241.78	13.782	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
18,900.00	8,523.00	19,348.15	8,839.00	121.33	123.34	-95.18	2,573.63	10,494.66	3,332.32	3,088.37	243.94	13.660	
19,000.00	8,523.00	19,448.15	8,839.00	122.42	124.42	-95.18	2,574.36	10,594.66	3,332.38	3,086.27	246.11	13.540	
19,100.00	8,523.00	19,548.15	8,839.00	123.51	125.51	-95.18	2,575.08	10,694.66	3,332.44	3,084.17	248.27	13.422	
19,200.00	8,523.00	19,648.15	8,839.00	124.59	126.60	-95.18	2,575.81	10,794.65	3,332.51	3,082.07	250.44	13.307	
19,235.87	8,523.00	19,684.02	8,839.00	124.99	126.99	-95.18	2,576.07	10,830.52	3,332.53	3,081.31	251.22	13.266 ES, SF	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,000.00	8,523.00	15,037.30	8,494.00	79.67	81.03	-89.38	3,204.96	6,589.66	3,976.14	3,815.52	160.62	24.755	CC
15,100.00	8,523.00	15,137.30	8,494.00	80.71	82.08	-89.38	3,205.70	6,689.66	3,976.21	3,813.51	162.70	24.438	
15,200.00	8,523.00	15,237.30	8,494.00	81.75	83.12	-89.38	3,206.43	6,789.66	3,976.28	3,811.49	164.79	24.129	
15,300.00	8,523.00	15,337.30	8,494.00	82.80	84.17	-89.38	3,207.17	6,889.66	3,976.35	3,809.47	166.89	23.827	
15,400.00	8,523.00	15,437.30	8,494.00	83.84	85.22	-89.38	3,207.90	6,989.65	3,976.43	3,807.44	168.99	23.531	
15,500.00	8,523.00	15,537.30	8,494.00	84.89	86.27	-89.38	3,208.63	7,089.65	3,976.50	3,805.41	171.09	23.243	
15,600.00	8,523.00	15,637.30	8,494.00	85.94	87.33	-89.38	3,209.37	7,189.65	3,976.57	3,803.38	173.19	22.960	
15,700.00	8,523.00	15,737.30	8,494.00	87.00	88.38	-89.38	3,210.10	7,289.64	3,976.64	3,801.34	175.30	22.685	
15,800.00	8,523.00	15,837.30	8,494.00	88.05	89.44	-89.38	3,210.84	7,389.64	3,976.71	3,799.30	177.41	22.415	
15,900.00	8,523.00	15,937.30	8,494.00	89.11	90.50	-89.38	3,211.57	7,489.64	3,976.78	3,797.25	179.53	22.151	
16,000.00	8,523.00	16,037.30	8,494.00	90.16	91.56	-89.38	3,212.30	7,589.64	3,976.85	3,795.21	181.65	21.893	
16,100.00	8,523.00	16,137.30	8,494.00	91.22	92.62	-89.38	3,213.04	7,689.63	3,976.92	3,793.16	183.77	21.641	
16,200.00	8,523.00	16,237.30	8,494.00	92.28	93.68	-89.38	3,213.77	7,789.63	3,976.99	3,791.10	185.89	21.394	
16,300.00	8,523.00	16,337.30	8,494.00	93.34	94.75	-89.38	3,214.51	7,889.63	3,977.07	3,789.05	188.02	21.153	
16,400.00	8,523.00	16,437.30	8,494.00	94.41	95.81	-89.38	3,215.24	7,989.63	3,977.14	3,786.99	190.15	20.916	
16,500.00	8,523.00	16,537.30	8,494.00	95.47	96.88	-89.38	3,215.98	8,089.62	3,977.21	3,784.93	192.28	20.684	
16,600.00	8,523.00	16,637.30	8,494.00	96.54	97.95	-89.38	3,216.71	8,189.62	3,977.28	3,782.86	194.41	20.458	
16,700.00	8,523.00	16,737.30	8,494.00	97.60	99.02	-89.38	3,217.44	8,289.62	3,977.35	3,780.80	196.55	20.236	
16,800.00	8,523.00	16,837.30	8,494.00	98.67	100.09	-89.38	3,218.18	8,389.61	3,977.42	3,778.73	198.69	20.018	
16,900.00	8,523.00	16,937.30	8,494.00	99.74	101.16	-89.38	3,218.91	8,489.61	3,977.49	3,776.66	200.83	19.805	
17,000.00	8,523.00	17,037.30	8,494.00	100.81	102.23	-89.38	3,219.65	8,589.61	3,977.56	3,774.59	202.98	19.596	
17,100.00	8,523.00	17,137.30	8,494.00	101.88	103.31	-89.38	3,220.38	8,689.61	3,977.63	3,772.51	205.12	19.391	
17,200.00	8,523.00	17,237.30	8,494.00	102.96	104.38	-89.38	3,221.11	8,789.60	3,977.70	3,770.43	207.27	19.191	
17,300.00	8,523.00	17,337.30	8,494.00	104.03	105.46	-89.38	3,221.85	8,889.60	3,977.78	3,768.35	209.42	18.994	
17,400.00	8,523.00	17,437.30	8,494.00	105.11	106.53	-89.38	3,222.58	8,989.60	3,977.85	3,766.27	211.57	18.801	
17,500.00	8,523.00	17,537.30	8,494.00	106.18	107.61	-89.38	3,223.32	9,089.60	3,977.92	3,764.19	213.73	18.612	
17,600.00	8,523.00	17,637.30	8,494.00	107.26	108.69	-89.38	3,224.05	9,189.59	3,977.99	3,762.11	215.88	18.427	
17,700.00	8,523.00	17,737.30	8,494.00	108.34	109.77	-89.38	3,224.79	9,289.59	3,978.06	3,760.02	218.04	18.245	
17,800.00	8,523.00	17,837.30	8,494.00	109.41	110.85	-89.38	3,225.52	9,389.59	3,978.13	3,757.93	220.20	18.066	
17,900.00	8,523.00	17,937.30	8,494.00	110.49	111.93	-89.38	3,226.25	9,489.58	3,978.20	3,755.84	222.36	17.891	
18,000.00	8,523.00	18,037.30	8,494.00	111.57	113.01	-89.38	3,226.99	9,589.58	3,978.27	3,753.75	224.52	17.719	
18,100.00	8,523.00	18,137.30	8,494.00	112.66	114.10	-89.38	3,227.72	9,689.58	3,978.34	3,751.66	226.69	17.550	
18,200.00	8,523.00	18,237.30	8,494.00	113.74	115.18	-89.38	3,228.46	9,789.58	3,978.42	3,749.56	228.85	17.384	
18,300.00	8,523.00	18,337.30	8,494.00	114.82	116.26	-89.38	3,229.19	9,889.57	3,978.49	3,747.46	231.02	17.221	
18,400.00	8,523.00	18,437.30	8,494.00	115.90	117.35	-89.38	3,229.93	9,989.57	3,978.56	3,745.37	233.19	17.061	
18,500.00	8,523.00	18,537.30	8,494.00	116.99	118.43	-89.38	3,230.66	10,089.57	3,978.63	3,743.27	235.36	16.904	
18,600.00	8,523.00	18,637.30	8,494.00	118.07	119.52	-89.38	3,231.39	10,189.57	3,978.70	3,741.17	237.53	16.750	
18,700.00	8,523.00	18,737.30	8,494.00	119.16	120.61	-89.38	3,232.13	10,289.56	3,978.77	3,739.07	239.71	16.599	
18,800.00	8,523.00	18,837.30	8,494.00	120.24	121.69	-89.38	3,232.86	10,389.56	3,978.84	3,736.96	241.88	16.450	
18,900.00	8,523.00	18,937.30	8,494.00	121.33	122.78	-89.38	3,233.60	10,489.56	3,978.91	3,734.86	244.06	16.303	
19,000.00	8,523.00	19,037.30	8,494.00	122.42	123.87	-89.38	3,234.33	10,589.55	3,978.98	3,732.75	246.23	16.159	
19,100.00	8,523.00	19,137.30	8,494.00	123.51	124.96	-89.38	3,235.06	10,689.55	3,979.06	3,730.65	248.41	16.018	
19,200.00	8,523.00	19,237.30	8,494.00	124.59	126.05	-89.38	3,235.80	10,789.55	3,979.13	3,728.54	250.59	15.879	
19,235.87	8,523.00	19,273.17	8,494.00	124.99	126.44	-89.38	3,236.06	10,825.42	3,979.15	3,727.78	251.37	15.830	ES, SF

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,300.00	8,523.00	12,518.67	8,494.00	52.85	54.66	-89.07	1,865.72	3,899.64	2,654.88	2,547.88	106.99	24.814	CC
12,400.00	8,523.00	12,618.67	8,494.00	53.78	55.59	-89.07	1,866.44	3,999.64	2,654.94	2,546.08	108.86	24.389	
12,500.00	8,523.00	12,718.67	8,494.00	54.71	56.52	-89.07	1,867.17	4,099.63	2,655.00	2,544.27	110.74	23.976	
12,600.00	8,523.00	12,818.67	8,494.00	55.66	57.47	-89.07	1,867.89	4,199.63	2,655.07	2,542.44	112.63	23.574	
12,700.00	8,523.00	12,918.67	8,494.00	56.60	58.42	-89.07	1,868.62	4,299.63	2,655.13	2,540.59	114.53	23.182	
12,800.00	8,523.00	13,018.67	8,494.00	57.56	59.37	-89.07	1,869.35	4,399.63	2,655.19	2,538.74	116.45	22.801	
12,900.00	8,523.00	13,118.67	8,494.00	58.52	60.33	-89.07	1,870.07	4,499.62	2,655.25	2,536.87	118.38	22.430	
13,000.00	8,523.00	13,218.67	8,494.00	59.48	61.30	-89.07	1,870.80	4,599.62	2,655.32	2,535.00	120.32	22.069	
13,100.00	8,523.00	13,318.67	8,494.00	60.46	62.27	-89.07	1,871.52	4,699.62	2,655.38	2,533.11	122.27	21.717	
13,200.00	8,523.00	13,418.67	8,494.00	61.43	63.25	-89.07	1,872.25	4,799.61	2,655.44	2,531.21	124.23	21.375	
13,300.00	8,523.00	13,518.67	8,494.00	62.41	64.23	-89.07	1,872.98	4,899.61	2,655.51	2,529.31	126.20	21.042	
13,400.00	8,523.00	13,618.67	8,494.00	63.40	65.22	-89.07	1,873.70	4,999.61	2,655.57	2,527.39	128.18	20.718	
13,500.00	8,523.00	13,718.67	8,494.00	64.39	66.21	-89.07	1,874.43	5,099.61	2,655.63	2,525.47	130.17	20.402	
13,600.00	8,523.00	13,818.67	8,494.00	65.39	67.20	-89.07	1,875.16	5,199.60	2,655.70	2,523.54	132.16	20.094	
13,700.00	8,523.00	13,918.67	8,494.00	66.39	68.20	-89.07	1,875.88	5,299.60	2,655.76	2,521.59	134.16	19.795	
13,800.00	8,523.00	14,018.67	8,494.00	67.39	69.20	-89.07	1,876.61	5,399.60	2,655.82	2,519.65	136.17	19.503	
13,900.00	8,523.00	14,118.67	8,494.00	68.39	70.21	-89.07	1,877.33	5,499.60	2,655.88	2,517.69	138.19	19.219	
14,000.00	8,523.00	14,218.67	8,494.00	69.40	71.22	-89.07	1,878.06	5,599.59	2,655.95	2,515.73	140.22	18.942	
14,100.00	8,523.00	14,318.67	8,494.00	70.42	72.23	-89.07	1,878.79	5,699.59	2,656.01	2,513.76	142.25	18.672	
14,200.00	8,523.00	14,418.67	8,494.00	71.43	73.25	-89.07	1,879.51	5,799.59	2,656.07	2,511.79	144.29	18.408	
14,300.00	8,523.00	14,518.67	8,494.00	72.45	74.27	-89.07	1,880.24	5,899.59	2,656.14	2,509.81	146.33	18.152	
14,400.00	8,523.00	14,618.67	8,494.00	73.48	75.29	-89.07	1,880.96	5,999.58	2,656.20	2,507.82	148.38	17.901	
14,500.00	8,523.00	14,718.67	8,494.00	74.50	76.31	-89.07	1,881.69	6,099.58	2,656.26	2,505.83	150.43	17.657	
14,600.00	8,523.00	14,818.67	8,494.00	75.53	77.34	-89.07	1,882.42	6,199.58	2,656.33	2,503.83	152.50	17.419	
14,700.00	8,523.00	14,918.67	8,494.00	76.56	78.37	-89.07	1,883.14	6,299.57	2,656.39	2,501.83	154.56	17.187	
14,800.00	8,523.00	15,018.67	8,494.00	77.60	79.40	-89.07	1,883.87	6,399.57	2,656.45	2,499.82	156.63	16.960	
14,900.00	8,523.00	15,118.67	8,494.00	78.63	80.44	-89.07	1,884.60	6,499.57	2,656.51	2,497.81	158.71	16.739	
15,000.00	8,523.00	15,218.67	8,494.00	79.67	81.48	-89.07	1,885.32	6,599.57	2,656.58	2,495.79	160.79	16.522	
15,100.00	8,523.00	15,318.67	8,494.00	80.71	82.52	-89.07	1,886.05	6,699.56	2,656.64	2,493.77	162.87	16.311	
15,200.00	8,523.00	15,418.67	8,494.00	81.75	83.56	-89.07	1,886.77	6,799.56	2,656.70	2,491.75	164.96	16.105	
15,300.00	8,523.00	15,518.67	8,494.00	82.80	84.60	-89.07	1,887.50	6,899.56	2,656.77	2,489.72	167.05	15.904	
15,400.00	8,523.00	15,618.67	8,494.00	83.84	85.65	-89.07	1,888.23	6,999.56	2,656.83	2,487.68	169.15	15.707	
15,500.00	8,523.00	15,718.67	8,494.00	84.89	86.70	-89.07	1,888.95	7,099.55	2,656.89	2,485.65	171.25	15.515	
15,600.00	8,523.00	15,818.67	8,494.00	85.94	87.75	-89.07	1,889.68	7,199.55	2,656.96	2,483.60	173.35	15.327	
15,700.00	8,523.00	15,918.67	8,494.00	87.00	88.80	-89.07	1,890.40	7,299.55	2,657.02	2,481.56	175.46	15.143	
15,800.00	8,523.00	16,018.67	8,494.00	88.05	89.85	-89.07	1,891.13	7,399.55	2,657.08	2,479.51	177.57	14.964	
15,900.00	8,523.00	16,118.67	8,494.00	89.11	90.90	-89.07	1,891.86	7,499.54	2,657.14	2,477.46	179.68	14.788	
16,000.00	8,523.00	16,218.67	8,494.00	90.16	91.96	-89.07	1,892.58	7,599.54	2,657.21	2,475.41	181.80	14.616	
16,100.00	8,523.00	16,318.67	8,494.00	91.22	93.02	-89.07	1,893.31	7,699.54	2,657.27	2,473.35	183.92	14.448	
16,200.00	8,523.00	16,418.67	8,494.00	92.28	94.08	-89.07	1,894.03	7,799.53	2,657.33	2,471.29	186.04	14.284	
16,300.00	8,523.00	16,518.67	8,494.00	93.34	95.14	-89.07	1,894.76	7,899.53	2,657.40	2,469.23	188.17	14.123	
16,400.00	8,523.00	16,618.67	8,494.00	94.41	96.20	-89.07	1,895.49	7,999.53	2,657.46	2,467.16	190.30	13.965	
16,500.00	8,523.00	16,718.67	8,494.00	95.47	97.26	-89.07	1,896.21	8,099.53	2,657.52	2,465.10	192.43	13.811	
16,600.00	8,523.00	16,818.67	8,494.00	96.54	98.33	-89.07	1,896.94	8,199.52	2,657.59	2,463.03	194.56	13.659	
16,700.00	8,523.00	16,918.67	8,494.00	97.60	99.40	-89.07	1,897.67	8,299.52	2,657.65	2,460.95	196.70	13.511	
16,800.00	8,523.00	17,018.67	8,494.00	98.67	100.46	-89.07	1,898.39	8,399.52	2,657.71	2,458.88	198.83	13.366	
16,900.00	8,523.00	17,118.67	8,494.00	99.74	101.53	-89.07	1,899.12	8,499.52	2,657.77	2,456.80	200.97	13.224	
17,000.00	8,523.00	17,218.67	8,494.00	100.81	102.60	-89.07	1,899.84	8,599.51	2,657.84	2,454.72	203.12	13.085	
17,100.00	8,523.00	17,318.67	8,494.00	101.88	103.67	-89.07	1,900.57	8,699.51	2,657.90	2,452.64	205.26	12.949	
17,200.00	8,523.00	17,418.67	8,494.00	102.96	104.74	-89.07	1,901.30	8,799.51	2,657.96	2,450.55	207.41	12.815	
17,300.00	8,523.00	17,518.67	8,494.00	104.03	105.82	-89.07	1,902.02	8,899.51	2,658.03	2,448.47	209.56	12.684	
17,400.00	8,523.00	17,618.67	8,494.00	105.11	106.89	-89.07	1,902.75	8,999.50	2,658.09	2,446.38	211.71	12.555	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
17,500.00	8,523.00	17,718.67	8,494.00	106.18	107.97	-89.07	1,903.47	9,099.50	2,658.15	2,444.29	213.86	12.429	
17,600.00	8,523.00	17,818.67	8,494.00	107.26	109.04	-89.07	1,904.20	9,199.50	2,658.22	2,442.20	216.02	12.306	
17,700.00	8,523.00	17,918.67	8,494.00	108.34	110.12	-89.07	1,904.93	9,299.49	2,658.28	2,440.10	218.17	12.184	
17,800.00	8,523.00	18,018.67	8,494.00	109.41	111.20	-89.07	1,905.65	9,399.49	2,658.34	2,438.01	220.33	12.065	
17,900.00	8,523.00	18,118.67	8,494.00	110.49	112.27	-89.07	1,906.38	9,499.49	2,658.41	2,435.91	222.49	11.948	
18,000.00	8,523.00	18,218.67	8,494.00	111.57	113.35	-89.07	1,907.10	9,599.49	2,658.47	2,433.81	224.65	11.834	
18,100.00	8,523.00	18,318.67	8,494.00	112.66	114.43	-89.07	1,907.83	9,699.48	2,658.53	2,431.71	226.82	11.721	
18,200.00	8,523.00	18,418.67	8,494.00	113.74	115.51	-89.07	1,908.56	9,799.48	2,658.59	2,429.61	228.98	11.610	
18,300.00	8,523.00	18,518.67	8,494.00	114.82	116.60	-89.07	1,909.28	9,899.48	2,658.66	2,427.51	231.15	11.502	
18,400.00	8,523.00	18,618.67	8,494.00	115.90	117.68	-89.07	1,910.01	9,999.48	2,658.72	2,425.40	233.32	11.395	
18,500.00	8,523.00	18,718.67	8,494.00	116.99	118.76	-89.07	1,910.74	10,099.47	2,658.78	2,423.30	235.49	11.291	
18,600.00	8,523.00	18,818.67	8,494.00	118.07	119.85	-89.07	1,911.46	10,199.47	2,658.85	2,421.19	237.66	11.188	
18,700.00	8,523.00	18,918.67	8,494.00	119.16	120.93	-89.07	1,912.19	10,299.47	2,658.91	2,419.08	239.83	11.087	
18,800.00	8,523.00	19,018.67	8,494.00	120.24	122.02	-89.07	1,912.91	10,399.47	2,658.97	2,416.97	242.00	10.987	
18,900.00	8,523.00	19,118.67	8,494.00	121.33	123.10	-89.07	1,913.64	10,499.46	2,659.04	2,414.86	244.18	10.890	
19,000.00	8,523.00	19,218.67	8,494.00	122.42	124.19	-89.07	1,914.37	10,599.46	2,659.10	2,412.74	246.35	10.794	
19,100.00	8,523.00	19,318.67	8,494.00	123.51	125.28	-89.07	1,915.09	10,699.46	2,659.16	2,410.63	248.53	10.700	
19,200.00	8,523.00	19,418.67	8,494.00	124.59	126.36	-89.07	1,915.82	10,799.46	2,659.22	2,408.51	250.71	10.607	
19,235.87	8,523.00	19,454.54	8,494.00	124.99	126.75	-89.07	1,916.08	10,835.32	2,659.25	2,407.76	251.49	10.574 ES, SF	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
15,700.00	8,523.00	14,540.68	7,289.00	87.00	86.87	-72.58	3,210.23	7,289.78	4,167.77	4,000.90	166.87	24.975	CC
15,800.00	8,523.00	14,640.68	7,289.00	88.05	87.95	-72.58	3,210.96	7,389.78	4,167.84	3,998.90	168.93	24.672	
15,900.00	8,523.00	14,740.68	7,289.00	89.11	89.02	-72.58	3,211.69	7,489.78	4,167.90	3,996.91	170.99	24.375	
16,000.00	8,523.00	14,840.68	7,289.00	90.16	90.10	-72.58	3,212.42	7,589.77	4,167.96	3,994.91	173.05	24.085	
16,100.00	8,523.00	14,940.68	7,289.00	91.22	91.18	-72.58	3,213.15	7,689.77	4,168.03	3,992.92	175.11	23.802	
16,200.00	8,523.00	15,040.68	7,289.00	92.28	92.26	-72.58	3,213.88	7,789.77	4,168.09	3,990.91	177.18	23.525	
16,300.00	8,523.00	15,140.68	7,289.00	93.34	93.33	-72.58	3,214.61	7,889.77	4,168.16	3,988.91	179.25	23.254	
16,400.00	8,523.00	15,240.68	7,289.00	94.41	94.42	-72.58	3,215.34	7,989.76	4,168.22	3,986.90	181.32	22.988	
16,500.00	8,523.00	15,340.68	7,289.00	95.47	95.50	-72.58	3,216.08	8,089.76	4,168.29	3,984.90	183.39	22.729	
16,600.00	8,523.00	15,440.68	7,289.00	96.54	96.58	-72.58	3,216.81	8,189.76	4,168.35	3,982.88	185.47	22.475	
16,700.00	8,523.00	15,540.68	7,289.00	97.60	97.66	-72.58	3,217.54	8,289.76	4,168.42	3,980.87	187.54	22.226	
16,800.00	8,523.00	15,640.68	7,289.00	98.67	98.75	-72.58	3,218.27	8,389.75	4,168.48	3,978.86	189.62	21.983	
16,900.00	8,523.00	15,740.68	7,289.00	99.74	99.83	-72.58	3,219.00	8,489.75	4,168.55	3,976.84	191.70	21.745	
17,000.00	8,523.00	15,840.68	7,289.00	100.81	100.92	-72.58	3,219.73	8,589.75	4,168.61	3,974.82	193.79	21.511	
17,100.00	8,523.00	15,940.68	7,289.00	101.88	102.00	-72.58	3,220.46	8,689.75	4,168.67	3,972.80	195.87	21.283	
17,200.00	8,523.00	16,040.68	7,289.00	102.96	103.09	-72.58	3,221.19	8,789.74	4,168.74	3,970.78	197.96	21.059	
17,300.00	8,523.00	16,140.68	7,289.00	104.03	104.18	-72.58	3,221.92	8,889.74	4,168.80	3,968.76	200.04	20.839	
17,400.00	8,523.00	16,240.68	7,289.00	105.11	105.27	-72.58	3,222.65	8,989.74	4,168.87	3,966.73	202.13	20.624	
17,500.00	8,523.00	16,340.68	7,289.00	106.18	106.36	-72.58	3,223.38	9,089.73	4,168.93	3,964.71	204.22	20.413	
17,600.00	8,523.00	16,440.68	7,289.00	107.26	107.45	-72.58	3,224.11	9,189.73	4,169.00	3,962.68	206.32	20.207	
17,700.00	8,523.00	16,540.68	7,289.00	108.34	108.54	-72.58	3,224.84	9,289.73	4,169.06	3,960.65	208.41	20.004	
17,800.00	8,523.00	16,640.68	7,289.00	109.41	109.63	-72.58	3,225.57	9,389.73	4,169.13	3,958.62	210.51	19.805	
17,900.00	8,523.00	16,740.68	7,289.00	110.49	110.72	-72.58	3,226.31	9,489.72	4,169.19	3,956.59	212.60	19.610	
18,000.00	8,523.00	16,840.68	7,289.00	111.57	111.82	-72.58	3,227.04	9,589.72	4,169.25	3,954.55	214.70	19.419	
18,100.00	8,523.00	16,940.68	7,289.00	112.66	112.91	-72.58	3,227.77	9,689.72	4,169.32	3,952.52	216.80	19.231	
18,200.00	8,523.00	17,040.68	7,289.00	113.74	114.00	-72.58	3,228.50	9,789.72	4,169.38	3,950.48	218.90	19.047	
18,300.00	8,523.00	17,140.68	7,289.00	114.82	115.10	-72.58	3,229.23	9,889.71	4,169.45	3,948.44	221.00	18.866	
18,400.00	8,523.00	17,240.68	7,289.00	115.90	116.19	-72.58	3,229.96	9,989.71	4,169.51	3,946.40	223.11	18.688	
18,500.00	8,523.00	17,340.68	7,289.00	116.99	117.29	-72.58	3,230.69	10,089.71	4,169.58	3,944.36	225.21	18.514	
18,600.00	8,523.00	17,440.68	7,289.00	118.07	118.38	-72.58	3,231.42	10,189.70	4,169.64	3,942.32	227.32	18.343	
18,700.00	8,523.00	17,540.68	7,289.00	119.16	119.48	-72.58	3,232.15	10,289.70	4,169.71	3,940.28	229.42	18.175	
18,800.00	8,523.00	17,640.68	7,289.00	120.24	120.58	-72.58	3,232.88	10,389.70	4,169.77	3,938.24	231.53	18.009	
18,900.00	8,523.00	17,740.68	7,289.00	121.33	121.68	-72.58	3,233.61	10,489.70	4,169.83	3,936.19	233.64	17.847	
19,000.00	8,523.00	17,840.68	7,289.00	122.42	122.77	-72.59	3,234.34	10,589.69	4,169.90	3,934.15	235.75	17.688	
19,100.00	8,523.00	17,940.68	7,289.00	123.51	123.87	-72.59	3,235.07	10,689.69	4,169.96	3,932.10	237.86	17.531	
19,200.00	8,523.00	18,040.68	7,289.00	124.59	124.97	-72.59	3,235.80	10,789.69	4,170.03	3,930.06	239.97	17.377	
19,235.87	8,523.00	18,076.55	7,289.00	124.99	125.36	-72.59	3,236.07	10,825.56	4,170.05	3,929.32	240.73	17.323	ES, SF

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,600.00	8,523.00	12,583.71	7,289.00	65.39	64.79	-64.83	1,875.16	5,199.60	2,934.00	2,816.39	117.61	24.946	CC
13,700.00	8,523.00	12,683.71	7,289.00	66.39	65.82	-64.83	1,875.88	5,299.60	2,934.06	2,814.56	119.50	24.553	
13,800.00	8,523.00	12,783.71	7,289.00	67.39	66.84	-64.83	1,876.61	5,399.60	2,934.12	2,812.72	121.40	24.170	
13,900.00	8,523.00	12,883.71	7,289.00	68.39	67.87	-64.83	1,877.34	5,499.60	2,934.18	2,810.88	123.30	23.798	
14,000.00	8,523.00	12,983.71	7,289.00	69.40	68.91	-64.83	1,878.06	5,599.59	2,934.23	2,809.03	125.20	23.436	
14,100.00	8,523.00	13,083.71	7,289.00	70.42	69.94	-64.83	1,878.79	5,699.59	2,934.29	2,807.17	127.12	23.084	
14,200.00	8,523.00	13,183.71	7,289.00	71.43	70.98	-64.83	1,879.51	5,799.59	2,934.35	2,805.31	129.03	22.741	
14,300.00	8,523.00	13,283.71	7,289.00	72.45	72.02	-64.83	1,880.24	5,899.59	2,934.40	2,803.45	130.95	22.408	
14,400.00	8,523.00	13,383.71	7,289.00	73.48	73.07	-64.83	1,880.97	5,999.58	2,934.46	2,801.58	132.88	22.083	
14,500.00	8,523.00	13,483.71	7,289.00	74.50	74.11	-64.83	1,881.69	6,099.58	2,934.52	2,799.71	134.81	21.767	
14,600.00	8,523.00	13,583.71	7,289.00	75.53	75.16	-64.83	1,882.42	6,199.58	2,934.57	2,797.83	136.75	21.460	
14,700.00	8,523.00	13,683.71	7,289.00	76.56	76.21	-64.83	1,883.14	6,299.58	2,934.63	2,795.94	138.69	21.160	
14,800.00	8,523.00	13,783.71	7,289.00	77.60	77.26	-64.83	1,883.87	6,399.57	2,934.69	2,794.06	140.63	20.868	
14,900.00	8,523.00	13,883.71	7,289.00	78.63	78.31	-64.83	1,884.60	6,499.57	2,934.75	2,792.17	142.58	20.584	
15,000.00	8,523.00	13,983.71	7,289.00	79.67	79.37	-64.83	1,885.32	6,599.57	2,934.80	2,790.28	144.53	20.306	
15,100.00	8,523.00	14,083.71	7,289.00	80.71	80.43	-64.83	1,886.05	6,699.57	2,934.86	2,788.38	146.48	20.036	
15,200.00	8,523.00	14,183.71	7,289.00	81.75	81.49	-64.84	1,886.78	6,799.56	2,934.92	2,786.48	148.44	19.772	
15,300.00	8,523.00	14,283.71	7,289.00	82.80	82.55	-64.84	1,887.50	6,899.56	2,934.97	2,784.57	150.40	19.514	
15,400.00	8,523.00	14,383.71	7,289.00	83.84	83.61	-64.84	1,888.23	6,999.56	2,935.03	2,782.67	152.36	19.263	
15,500.00	8,523.00	14,483.71	7,289.00	84.89	84.67	-64.84	1,888.95	7,099.55	2,935.09	2,780.76	154.33	19.018	
15,600.00	8,523.00	14,583.71	7,289.00	85.94	85.74	-64.84	1,889.68	7,199.55	2,935.14	2,778.85	156.30	18.779	
15,700.00	8,523.00	14,683.71	7,289.00	87.00	86.81	-64.84	1,890.41	7,299.55	2,935.20	2,776.93	158.27	18.545	
15,800.00	8,523.00	14,783.71	7,289.00	88.05	87.88	-64.84	1,891.13	7,399.55	2,935.26	2,775.01	160.25	18.317	
15,900.00	8,523.00	14,883.71	7,289.00	89.11	88.95	-64.84	1,891.86	7,499.54	2,935.32	2,773.09	162.22	18.094	
16,000.00	8,523.00	14,983.71	7,289.00	90.16	90.02	-64.84	1,892.58	7,599.54	2,935.37	2,771.17	164.20	17.876	
16,100.00	8,523.00	15,083.71	7,289.00	91.22	91.09	-64.84	1,893.31	7,699.54	2,935.43	2,769.24	166.19	17.663	
16,200.00	8,523.00	15,183.71	7,289.00	92.28	92.16	-64.84	1,894.04	7,799.54	2,935.49	2,767.32	168.17	17.455	
16,300.00	8,523.00	15,283.71	7,289.00	93.34	93.24	-64.84	1,894.76	7,899.53	2,935.54	2,765.39	170.16	17.252	
16,400.00	8,523.00	15,383.71	7,289.00	94.41	94.31	-64.84	1,895.49	7,999.53	2,935.60	2,763.45	172.15	17.053	
16,500.00	8,523.00	15,483.71	7,289.00	95.47	95.39	-64.84	1,896.21	8,099.53	2,935.66	2,761.52	174.14	16.858	
16,600.00	8,523.00	15,583.71	7,289.00	96.54	96.47	-64.84	1,896.94	8,199.53	2,935.72	2,759.58	176.13	16.668	
16,700.00	8,523.00	15,683.71	7,289.00	97.60	97.55	-64.84	1,897.67	8,299.52	2,935.77	2,757.65	178.13	16.481	
16,800.00	8,523.00	15,783.71	7,289.00	98.67	98.63	-64.84	1,898.39	8,399.52	2,935.83	2,755.71	180.12	16.299	
16,900.00	8,523.00	15,883.71	7,289.00	99.74	99.71	-64.84	1,899.12	8,499.52	2,935.89	2,753.77	182.12	16.121	
17,000.00	8,523.00	15,983.71	7,289.00	100.81	100.79	-64.84	1,899.84	8,599.51	2,935.94	2,751.82	184.12	15.946	
17,100.00	8,523.00	16,083.71	7,289.00	101.88	101.87	-64.85	1,900.57	8,699.51	2,936.00	2,749.88	186.12	15.774	
17,200.00	8,523.00	16,183.71	7,289.00	102.96	102.95	-64.85	1,901.30	8,799.51	2,936.06	2,747.93	188.13	15.607	
17,300.00	8,523.00	16,283.71	7,289.00	104.03	104.04	-64.85	1,902.02	8,899.51	2,936.11	2,745.98	190.13	15.442	
17,400.00	8,523.00	16,383.71	7,289.00	105.11	105.12	-64.85	1,902.75	8,999.50	2,936.17	2,744.03	192.14	15.282	
17,500.00	8,523.00	16,483.71	7,289.00	106.18	106.21	-64.85	1,903.48	9,099.50	2,936.23	2,742.08	194.15	15.124	
17,600.00	8,523.00	16,583.71	7,289.00	107.26	107.29	-64.85	1,904.20	9,199.50	2,936.29	2,740.13	196.16	14.969	
17,700.00	8,523.00	16,683.71	7,289.00	108.34	108.38	-64.85	1,904.93	9,299.50	2,936.34	2,738.17	198.17	14.817	
17,800.00	8,523.00	16,783.71	7,289.00	109.41	109.47	-64.85	1,905.65	9,399.49	2,936.40	2,736.22	200.18	14.669	
17,900.00	8,523.00	16,883.71	7,289.00	110.49	110.56	-64.85	1,906.38	9,499.49	2,936.46	2,734.26	202.19	14.523	
18,000.00	8,523.00	16,983.71	7,289.00	111.57	111.65	-64.85	1,907.11	9,599.49	2,936.51	2,732.30	204.21	14.380	
18,100.00	8,523.00	17,083.71	7,289.00	112.66	112.74	-64.85	1,907.83	9,699.49	2,936.57	2,730.35	206.23	14.240	
18,200.00	8,523.00	17,183.71	7,289.00	113.74	113.83	-64.85	1,908.56	9,799.48	2,936.63	2,728.38	208.24	14.102	
18,300.00	8,523.00	17,283.71	7,289.00	114.82	114.92	-64.85	1,909.28	9,899.48	2,936.68	2,726.42	210.26	13.967	
18,400.00	8,523.00	17,383.71	7,289.00	115.90	116.01	-64.85	1,910.01	9,999.48	2,936.74	2,724.46	212.28	13.834	
18,500.00	8,523.00	17,483.71	7,289.00	116.99	117.10	-64.85	1,910.74	10,099.47	2,936.80	2,722.50	214.30	13.704	
18,600.00	8,523.00	17,583.71	7,289.00	118.07	118.20	-64.85	1,911.46	10,199.47	2,936.86	2,720.53	216.32	13.576	
18,700.00	8,523.00	17,683.71	7,289.00	119.16	119.29	-64.85	1,912.19	10,299.47	2,936.91	2,718.57	218.35	13.451	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Offset Wellbore Centre			Rule Assigned:				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
18,800.00	8,523.00	17,783.71	7,289.00	120.24	120.38	-64.85	1,912.91	10,399.47	2,936.97	2,716.60	220.37	13.327		
18,900.00	8,523.00	17,883.71	7,289.00	121.33	121.48	-64.85	1,913.64	10,499.46	2,937.03	2,714.63	222.40	13.206		
19,000.00	8,523.00	17,983.71	7,289.00	122.42	122.57	-64.85	1,914.37	10,599.46	2,937.08	2,712.66	224.42	13.087		
19,100.00	8,523.00	18,083.71	7,289.00	123.51	123.67	-64.86	1,915.09	10,699.46	2,937.14	2,710.69	226.45	12.970		
19,200.00	8,523.00	18,183.71	7,289.00	124.59	124.76	-64.86	1,915.82	10,799.46	2,937.20	2,708.72	228.48	12.856		
19,235.87	8,523.00	18,219.58	7,289.00	124.99	125.16	-64.86	1,916.08	10,835.32	2,937.22	2,708.01	229.20	12.815 ES, SF		

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
17,400.00	8,523.00	15,095.37	6,214.00	105.11	103.70	-59.71	3,222.54	8,989.50	4,606.23	4,421.22	185.02	24.896	CC
17,500.00	8,523.00	15,195.37	6,214.00	106.18	104.80	-59.71	3,223.27	9,089.50	4,606.30	4,419.34	186.96	24.638	
17,600.00	8,523.00	15,295.37	6,214.00	107.26	105.89	-59.71	3,224.01	9,189.50	4,606.36	4,417.46	188.90	24.385	
17,700.00	8,523.00	15,395.37	6,214.00	108.34	106.99	-59.72	3,224.75	9,289.49	4,606.42	4,415.58	190.85	24.137	
17,800.00	8,523.00	15,495.37	6,214.00	109.41	108.09	-59.72	3,225.48	9,389.49	4,606.49	4,413.69	192.79	23.894	
17,900.00	8,523.00	15,595.37	6,214.00	110.49	109.19	-59.72	3,226.22	9,489.49	4,606.55	4,411.81	194.74	23.655	
18,000.00	8,523.00	15,695.37	6,214.00	111.57	110.29	-59.72	3,226.96	9,589.49	4,606.61	4,409.93	196.69	23.421	
18,100.00	8,523.00	15,795.37	6,214.00	112.66	111.39	-59.72	3,227.69	9,689.48	4,606.68	4,408.04	198.64	23.192	
18,200.00	8,523.00	15,895.37	6,214.00	113.74	112.49	-59.72	3,228.43	9,789.48	4,606.74	4,406.15	200.59	22.966	
18,300.00	8,523.00	15,995.37	6,214.00	114.82	113.60	-59.72	3,229.17	9,889.48	4,606.80	4,404.27	202.54	22.745	
18,400.00	8,523.00	16,095.37	6,214.00	115.90	114.70	-59.72	3,229.90	9,989.47	4,606.87	4,402.38	204.49	22.529	
18,500.00	8,523.00	16,195.37	6,214.00	116.99	115.80	-59.72	3,230.64	10,089.47	4,606.93	4,400.49	206.44	22.316	
18,600.00	8,523.00	16,295.37	6,214.00	118.07	116.90	-59.72	3,231.38	10,189.47	4,606.99	4,398.60	208.40	22.107	
18,700.00	8,523.00	16,395.37	6,214.00	119.16	118.01	-59.72	3,232.11	10,289.47	4,607.06	4,396.71	210.35	21.902	
18,800.00	8,523.00	16,495.37	6,214.00	120.24	119.11	-59.72	3,232.85	10,389.46	4,607.12	4,394.81	212.31	21.700	
18,900.00	8,523.00	16,595.37	6,214.00	121.33	120.21	-59.72	3,233.59	10,489.46	4,607.18	4,392.92	214.26	21.502	
19,000.00	8,523.00	16,695.37	6,214.00	122.42	121.32	-59.72	3,234.32	10,589.46	4,607.25	4,391.03	216.22	21.308	
19,100.00	8,523.00	16,795.37	6,214.00	123.51	122.42	-59.72	3,235.06	10,689.46	4,607.31	4,389.13	218.18	21.117	
19,200.00	8,523.00	16,895.37	6,214.00	124.59	123.53	-59.72	3,235.80	10,789.45	4,607.37	4,387.24	220.14	20.929	
19,235.87	8,523.00	16,931.24	6,214.00	124.99	123.92	-59.72	3,236.06	10,825.32	4,607.40	4,386.56	220.84	20.863	ES, SF

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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 (SQ2)													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
16,100.00	8,523.00	13,972.36	6,214.00	91.22	89.33	-48.83	1,893.00	7,699.28	3,529.01	3,386.90	142.12	24.832	CC
16,200.00	8,523.00	14,072.36	6,214.00	92.28	90.42	-48.83	1,893.74	7,799.28	3,529.07	3,385.22	143.85	24.532	
16,300.00	8,523.00	14,172.36	6,214.00	93.34	91.50	-48.83	1,894.47	7,899.28	3,529.12	3,383.53	145.59	24.240	
16,400.00	8,523.00	14,272.36	6,214.00	94.41	92.59	-48.84	1,895.21	7,999.28	3,529.18	3,381.84	147.33	23.953	
16,500.00	8,523.00	14,372.36	6,214.00	95.47	93.67	-48.84	1,895.94	8,099.27	3,529.23	3,380.16	149.08	23.674	
16,600.00	8,523.00	14,472.35	6,214.00	96.54	94.76	-48.84	1,896.68	8,199.27	3,529.29	3,378.47	150.82	23.400	
16,700.00	8,523.00	14,572.35	6,214.00	97.60	95.85	-48.84	1,897.42	8,299.27	3,529.34	3,376.77	152.57	23.133	
16,800.00	8,523.00	14,672.35	6,214.00	98.67	96.94	-48.84	1,898.15	8,399.27	3,529.40	3,375.08	154.32	22.871	
16,900.00	8,523.00	14,772.35	6,214.00	99.74	98.03	-48.84	1,898.89	8,499.26	3,529.45	3,373.39	156.06	22.615	
17,000.00	8,523.00	14,872.35	6,214.00	100.81	99.12	-48.84	1,899.62	8,599.26	3,529.51	3,371.69	157.81	22.365	
17,100.00	8,523.00	14,972.35	6,214.00	101.88	100.21	-48.84	1,900.36	8,699.26	3,529.56	3,370.00	159.57	22.120	
17,200.00	8,523.00	15,072.35	6,214.00	102.96	101.31	-48.84	1,901.09	8,799.25	3,529.62	3,368.30	161.32	21.880	
17,300.00	8,523.00	15,172.35	6,214.00	104.03	102.40	-48.84	1,901.83	8,899.25	3,529.67	3,366.60	163.07	21.645	
17,400.00	8,523.00	15,272.35	6,214.00	105.11	103.49	-48.84	1,902.57	8,999.25	3,529.72	3,364.90	164.83	21.415	
17,500.00	8,523.00	15,372.35	6,214.00	106.18	104.59	-48.84	1,903.30	9,099.25	3,529.78	3,363.20	166.58	21.189	
17,600.00	8,523.00	15,472.35	6,214.00	107.26	105.68	-48.84	1,904.04	9,199.24	3,529.83	3,361.49	168.34	20.969	
17,700.00	8,523.00	15,572.35	6,214.00	108.34	106.78	-48.85	1,904.77	9,299.24	3,529.89	3,359.79	170.10	20.752	
17,800.00	8,523.00	15,672.35	6,214.00	109.41	107.87	-48.85	1,905.51	9,399.24	3,529.94	3,358.09	171.86	20.540	
17,900.00	8,523.00	15,772.35	6,214.00	110.49	108.97	-48.85	1,906.24	9,499.24	3,530.00	3,356.38	173.62	20.332	
18,000.00	8,523.00	15,872.35	6,214.00	111.57	110.07	-48.85	1,906.98	9,599.23	3,530.05	3,354.68	175.38	20.128	
18,100.00	8,523.00	15,972.35	6,214.00	112.66	111.16	-48.85	1,907.72	9,699.23	3,530.11	3,352.97	177.14	19.928	
18,200.00	8,523.00	16,072.35	6,214.00	113.74	112.26	-48.85	1,908.45	9,799.23	3,530.16	3,351.26	178.90	19.732	
18,300.00	8,523.00	16,172.35	6,214.00	114.82	113.36	-48.85	1,909.19	9,899.22	3,530.22	3,349.55	180.67	19.540	
18,400.00	8,523.00	16,272.35	6,214.00	115.90	114.46	-48.85	1,909.92	9,999.22	3,530.27	3,347.84	182.43	19.351	
18,500.00	8,523.00	16,372.35	6,214.00	116.99	115.56	-48.85	1,910.66	10,099.22	3,530.33	3,346.13	184.20	19.166	
18,600.00	8,523.00	16,472.35	6,214.00	118.07	116.66	-48.85	1,911.39	10,199.22	3,530.38	3,344.42	185.96	18.984	
18,700.00	8,523.00	16,572.35	6,214.00	119.16	117.76	-48.85	1,912.13	10,299.21	3,530.44	3,342.71	187.73	18.806	
18,800.00	8,523.00	16,672.35	6,214.00	120.24	118.86	-48.85	1,912.87	10,399.21	3,530.49	3,340.99	189.50	18.631	
18,900.00	8,523.00	16,772.35	6,214.00	121.33	119.96	-48.85	1,913.60	10,499.21	3,530.55	3,339.28	191.27	18.459	
19,000.00	8,523.00	16,872.35	6,214.00	122.42	121.06	-48.86	1,914.34	10,599.21	3,530.60	3,337.56	193.04	18.290	
19,100.00	8,523.00	16,972.35	6,214.00	123.51	122.16	-48.86	1,915.07	10,699.20	3,530.65	3,335.85	194.81	18.124	
19,200.00	8,523.00	17,072.35	6,214.00	124.59	123.26	-48.86	1,915.81	10,799.20	3,530.71	3,334.13	196.58	17.961	
19,235.87	8,523.00	17,108.22	6,214.00	124.99	123.66	-48.86	1,916.07	10,835.07	3,530.73	3,333.52	197.21	17.903	ES, SF

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Minimum	Separation	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor	
600.00	600.00	600.00	600.00	1.92	1.92	-90.17	-0.26	-89.98	89.98	86.14	3.84	23.459	
700.00	700.00	700.00	700.00	2.28	2.28	-90.17	-0.26	-89.98	89.98	85.43	4.55	19.765	
800.00	800.00	800.00	800.00	2.63	2.63	-90.17	-0.26	-89.98	89.98	84.71	5.27	17.076 CC	
900.00	900.00	899.91	899.90	2.99	2.99	-89.33	1.05	-90.02	90.03	84.04	5.99	15.040	
1,000.00	1,000.00	999.69	999.60	3.35	3.35	-86.85	4.96	-90.14	90.27	83.57	6.70	13.472 ES	
1,100.00	1,100.00	1,099.20	1,098.89	3.71	3.71	-82.78	11.45	-90.33	91.06	83.64	7.41	12.283	
1,200.00	1,200.00	1,198.30	1,197.58	4.07	4.07	-77.26	20.48	-90.60	92.92	84.79	8.12	11.437	
1,300.00	1,299.99	1,296.68	1,295.28	4.41	4.42	106.56	31.97	-90.94	96.88	88.07	8.81	10.996	
1,400.00	1,399.91	1,393.88	1,391.49	4.74	4.76	115.54	45.79	-91.35	104.70	95.22	9.47	11.053	
1,500.00	1,499.69	1,490.21	1,486.49	5.07	5.11	124.91	61.75	-91.83	117.81	107.68	10.13	11.633	
1,600.00	1,599.27	1,586.77	1,581.63	5.40	5.45	133.21	78.23	-92.32	135.74	124.95	10.79	12.579	
1,700.00	1,698.57	1,682.61	1,676.06	5.74	5.79	140.05	94.59	-92.81	157.92	146.46	11.46	13.785	
1,713.40	1,711.86	1,695.40	1,688.67	5.79	5.84	140.87	96.77	-92.88	161.19	149.65	11.55	13.960	
1,800.00	1,797.67	1,777.98	1,770.03	6.08	6.14	145.63	110.87	-93.30	183.18	171.06	12.12	15.113	
1,900.00	1,896.77	1,873.35	1,864.00	6.42	6.49	149.88	127.15	-93.78	209.73	196.94	12.79	16.404	
2,000.00	1,995.87	1,968.71	1,957.96	6.77	6.83	153.18	143.43	-94.27	237.13	223.68	13.45	17.627	
2,100.00	2,094.97	2,064.07	2,051.92	7.12	7.18	155.79	159.71	-94.75	265.12	250.99	14.12	18.772	
2,200.00	2,194.07	2,159.44	2,145.88	7.48	7.53	157.92	175.99	-95.24	293.52	278.73	14.79	19.839	
2,300.00	2,293.16	2,254.80	2,239.84	7.83	7.88	159.66	192.27	-95.73	322.23	306.76	15.47	20.831	
2,400.00	2,392.26	2,350.16	2,333.81	8.19	8.23	161.13	208.55	-96.21	351.18	335.03	16.14	21.752	
2,500.00	2,491.36	2,445.53	2,427.77	8.55	8.58	162.37	224.82	-96.70	380.30	363.48	16.82	22.608	
2,600.00	2,590.46	2,540.89	2,521.73	8.91	8.93	163.43	241.10	-97.18	409.56	392.07	17.50	23.405	
2,700.00	2,689.56	2,636.25	2,615.69	9.27	9.28	164.36	257.38	-97.67	438.94	420.76	18.18	24.146	
2,800.00	2,788.66	2,731.61	2,709.66	9.63	9.63	165.16	273.66	-98.15	468.41	449.55	18.86	24.838	
10,800.00	8,523.00	11,234.72	8,853.00	40.15	42.29	-99.46	1,181.23	2,405.83	2,007.27	1,926.23	81.05	24.766	
10,900.00	8,523.00	11,334.72	8,853.00	40.90	43.03	-99.46	1,181.89	2,505.83	2,007.27	1,924.74	82.53	24.322	
11,000.00	8,523.00	11,434.72	8,853.00	41.67	43.79	-99.46	1,182.55	2,605.83	2,007.27	1,923.23	84.04	23.884	
11,100.00	8,523.00	11,534.72	8,853.00	42.46	44.56	-99.46	1,183.22	2,705.83	2,007.27	1,921.69	85.59	23.453	
11,200.00	8,523.00	11,634.72	8,853.00	43.26	45.35	-99.46	1,183.88	2,805.83	2,007.27	1,920.11	87.16	23.030	
11,300.00	8,523.00	11,734.72	8,853.00	44.08	46.16	-99.46	1,184.54	2,905.82	2,007.27	1,918.51	88.76	22.615	
11,400.00	8,523.00	11,834.72	8,853.00	44.90	46.97	-99.46	1,185.20	3,005.82	2,007.27	1,916.88	90.38	22.208	
11,500.00	8,523.00	11,934.72	8,853.00	45.75	47.80	-99.46	1,185.86	3,105.82	2,007.27	1,915.23	92.03	21.810	
11,600.00	8,523.00	12,034.72	8,853.00	46.60	48.64	-99.46	1,186.53	3,205.82	2,007.27	1,913.56	93.71	21.420	
11,700.00	8,523.00	12,134.72	8,853.00	47.46	49.49	-99.46	1,187.19	3,305.81	2,007.27	1,911.86	95.40	21.039	
11,800.00	8,523.00	12,234.72	8,853.00	48.34	50.35	-99.46	1,187.85	3,405.81	2,007.27	1,910.14	97.12	20.668	
11,900.00	8,523.00	12,334.72	8,853.00	49.22	51.23	-99.46	1,188.51	3,505.81	2,007.26	1,908.41	98.86	20.304	
12,000.00	8,523.00	12,434.72	8,853.00	50.12	52.11	-99.46	1,189.18	3,605.81	2,007.26	1,906.65	100.61	19.950	
12,100.00	8,523.00	12,534.72	8,853.00	51.02	53.00	-99.46	1,189.84	3,705.81	2,007.26	1,904.88	102.39	19.605	
12,200.00	8,523.00	12,634.72	8,853.00	51.93	53.90	-99.46	1,190.50	3,805.80	2,007.26	1,903.08	104.18	19.268	
12,300.00	8,523.00	12,734.72	8,853.00	52.85	54.80	-99.46	1,191.16	3,905.80	2,007.26	1,901.28	105.98	18.939	
12,400.00	8,523.00	12,834.72	8,853.00	53.78	55.72	-99.46	1,191.83	4,005.80	2,007.26	1,899.46	107.81	18.619	
12,500.00	8,523.00	12,934.72	8,853.00	54.71	56.64	-99.46	1,192.49	4,105.80	2,007.26	1,897.62	109.64	18.308	
12,600.00	8,523.00	13,034.72	8,853.00	55.66	57.57	-99.46	1,193.15	4,205.79	2,007.26	1,895.77	111.49	18.004	
12,700.00	8,523.00	13,134.72	8,853.00	56.60	58.51	-99.46	1,193.81	4,305.79	2,007.26	1,893.90	113.35	17.708	
12,800.00	8,523.00	13,234.72	8,853.00	57.56	59.45	-99.46	1,194.47	4,405.79	2,007.26	1,892.03	115.23	17.420	
12,900.00	8,523.00	13,334.72	8,853.00	58.52	60.40	-99.46	1,195.14	4,505.79	2,007.26	1,890.14	117.12	17.139	
13,000.00	8,523.00	13,434.72	8,853.00	59.48	61.36	-99.46	1,195.80	4,605.79	2,007.26	1,888.24	119.01	16.866	
13,100.00	8,523.00	13,534.72	8,853.00	60.46	62.32	-99.46	1,196.46	4,705.78	2,007.25	1,886.33	120.92	16.599	
13,200.00	8,523.00	13,634.72	8,853.00	61.43	63.28	-99.46	1,197.12	4,805.78	2,007.25	1,884.41	122.84	16.340	
13,300.00	8,523.00	13,734.72	8,853.00	62.41	64.25	-99.46	1,197.79	4,905.78	2,007.25	1,882.48	124.77	16.087	
13,400.00	8,523.00	13,834.72	8,853.00	63.40	65.23	-99.46	1,198.45	5,005.78	2,007.25	1,880.54	126.71	15.841	
13,500.00	8,523.00	13,934.72	8,853.00	64.39	66.21	-99.46	1,199.11	5,105.77	2,007.25	1,878.59	128.66	15.601	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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)											Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
13,600.00	8,523.00	14,034.72	8,853.00	65.39	67.19	-99.46	1,199.77	5,205.77	2,007.25	1,876.63	130.62	15.368
13,700.00	8,523.00	14,134.72	8,853.00	66.39	68.18	-99.46	1,200.43	5,305.77	2,007.25	1,874.67	132.58	15.140
13,800.00	8,523.00	14,234.72	8,853.00	67.39	69.17	-99.46	1,201.10	5,405.77	2,007.25	1,872.70	134.55	14.918
13,900.00	8,523.00	14,334.72	8,853.00	68.39	70.17	-99.46	1,201.76	5,505.77	2,007.25	1,870.72	136.53	14.702
14,000.00	8,523.00	14,434.72	8,853.00	69.40	71.17	-99.46	1,202.42	5,605.76	2,007.25	1,868.73	138.52	14.491
14,100.00	8,523.00	14,534.72	8,853.00	70.42	72.18	-99.46	1,203.08	5,705.76	2,007.25	1,866.73	140.51	14.285
14,200.00	8,523.00	14,634.72	8,853.00	71.43	73.18	-99.46	1,203.75	5,805.76	2,007.25	1,864.73	142.51	14.085
14,300.00	8,523.00	14,734.72	8,853.00	72.45	74.19	-99.46	1,204.41	5,905.76	2,007.24	1,862.73	144.52	13.889
14,400.00	8,523.00	14,834.72	8,853.00	73.48	75.21	-99.46	1,205.07	6,005.76	2,007.24	1,860.71	146.53	13.698
14,500.00	8,523.00	14,934.72	8,853.00	74.50	76.23	-99.46	1,205.73	6,105.75	2,007.24	1,858.69	148.55	13.512
14,600.00	8,523.00	15,034.72	8,853.00	75.53	77.25	-99.46	1,206.39	6,205.75	2,007.24	1,856.67	150.57	13.331
14,700.00	8,523.00	15,134.72	8,853.00	76.56	78.27	-99.46	1,207.06	6,305.75	2,007.24	1,854.64	152.60	13.153
14,800.00	8,523.00	15,234.72	8,853.00	77.60	79.29	-99.46	1,207.72	6,405.75	2,007.24	1,852.60	154.64	12.980
14,900.00	8,523.00	15,334.72	8,853.00	78.63	80.32	-99.46	1,208.38	6,505.74	2,007.24	1,850.56	156.67	12.812
15,000.00	8,523.00	15,434.72	8,853.00	79.67	81.35	-99.46	1,209.04	6,605.74	2,007.24	1,848.52	158.72	12.647
15,100.00	8,523.00	15,534.72	8,853.00	80.71	82.39	-99.46	1,209.71	6,705.74	2,007.24	1,846.47	160.77	12.485
15,200.00	8,523.00	15,634.72	8,853.00	81.75	83.42	-99.46	1,210.37	6,805.74	2,007.24	1,844.42	162.82	12.328
15,300.00	8,523.00	15,734.72	8,853.00	82.80	84.46	-99.46	1,211.03	6,905.74	2,007.24	1,842.36	164.88	12.174
15,400.00	8,523.00	15,834.72	8,853.00	83.84	85.50	-99.46	1,211.69	7,005.73	2,007.23	1,840.30	166.94	12.024
15,500.00	8,523.00	15,934.72	8,853.00	84.89	86.54	-99.46	1,212.35	7,105.73	2,007.23	1,838.23	169.00	11.877
15,600.00	8,523.00	16,034.72	8,853.00	85.94	87.58	-99.46	1,213.02	7,205.73	2,007.23	1,836.16	171.07	11.733
15,700.00	8,523.00	16,134.72	8,853.00	87.00	88.63	-99.46	1,213.68	7,305.73	2,007.23	1,834.09	173.14	11.593
15,800.00	8,523.00	16,234.72	8,853.00	88.05	89.68	-99.46	1,214.34	7,405.72	2,007.23	1,832.01	175.22	11.456
15,900.00	8,523.00	16,334.72	8,853.00	89.11	90.72	-99.46	1,215.00	7,505.72	2,007.23	1,829.93	177.30	11.321
16,000.00	8,523.00	16,434.72	8,853.00	90.16	91.78	-99.46	1,215.67	7,605.72	2,007.23	1,827.85	179.38	11.190
16,100.00	8,523.00	16,534.72	8,853.00	91.22	92.83	-99.46	1,216.33	7,705.72	2,007.23	1,825.76	181.46	11.061
16,200.00	8,523.00	16,634.72	8,853.00	92.28	93.88	-99.46	1,216.99	7,805.72	2,007.23	1,823.68	183.55	10.935
16,300.00	8,523.00	16,734.72	8,853.00	93.34	94.94	-99.46	1,217.65	7,905.71	2,007.23	1,821.58	185.64	10.812
16,400.00	8,523.00	16,834.72	8,853.00	94.41	95.99	-99.46	1,218.32	8,005.71	2,007.23	1,819.49	187.74	10.692
16,500.00	8,523.00	16,934.72	8,853.00	95.47	97.05	-99.46	1,218.98	8,105.71	2,007.23	1,817.39	189.84	10.573
16,600.00	8,523.00	17,034.72	8,853.00	96.54	98.11	-99.46	1,219.64	8,205.71	2,007.22	1,815.29	191.94	10.458
16,700.00	8,523.00	17,134.72	8,853.00	97.60	99.17	-99.46	1,220.30	8,305.70	2,007.22	1,813.19	194.04	10.345
16,800.00	8,523.00	17,234.72	8,853.00	98.67	100.24	-99.46	1,220.96	8,405.70	2,007.22	1,811.08	196.14	10.234
16,900.00	8,523.00	17,334.72	8,853.00	99.74	101.30	-99.46	1,221.63	8,505.70	2,007.22	1,808.97	198.25	10.125
17,000.00	8,523.00	17,434.72	8,853.00	100.81	102.37	-99.46	1,222.29	8,605.70	2,007.22	1,806.86	200.36	10.018
17,100.00	8,523.00	17,534.72	8,853.00	101.88	103.43	-99.46	1,222.95	8,705.70	2,007.22	1,804.75	202.47	9.914
17,200.00	8,523.00	17,634.72	8,853.00	102.96	104.50	-99.46	1,223.61	8,805.69	2,007.22	1,802.64	204.58	9.811
17,300.00	8,523.00	17,734.72	8,853.00	104.03	105.57	-99.46	1,224.28	8,905.69	2,007.22	1,800.52	206.70	9.711
17,400.00	8,523.00	17,834.72	8,853.00	105.11	106.64	-99.46	1,224.94	9,005.69	2,007.22	1,798.40	208.82	9.612
17,500.00	8,523.00	17,934.72	8,853.00	106.18	107.71	-99.46	1,225.60	9,105.69	2,007.22	1,796.28	210.94	9.516
17,600.00	8,523.00	18,034.72	8,853.00	107.26	108.78	-99.46	1,226.26	9,205.69	2,007.22	1,794.16	213.06	9.421
17,700.00	8,523.00	18,134.72	8,853.00	108.34	109.85	-99.46	1,226.92	9,305.68	2,007.22	1,792.03	215.18	9.328
17,800.00	8,523.00	18,234.72	8,853.00	109.41	110.93	-99.46	1,227.59	9,405.68	2,007.21	1,789.90	217.31	9.237
17,900.00	8,523.00	18,334.72	8,853.00	110.49	112.00	-99.46	1,228.25	9,505.68	2,007.21	1,787.78	219.44	9.147
18,000.00	8,523.00	18,434.72	8,853.00	111.57	113.08	-99.46	1,228.91	9,605.68	2,007.21	1,785.65	221.57	9.059
18,100.00	8,523.00	18,534.72	8,853.00	112.66	114.16	-99.46	1,229.57	9,705.67	2,007.21	1,783.51	223.70	8.973
18,200.00	8,523.00	18,634.72	8,853.00	113.74	115.23	-99.46	1,230.24	9,805.67	2,007.21	1,781.38	225.83	8.888
18,300.00	8,523.00	18,734.72	8,853.00	114.82	116.31	-99.46	1,230.90	9,905.67	2,007.21	1,779.25	227.96	8.805
18,400.00	8,523.00	18,834.72	8,853.00	115.90	117.39	-99.46	1,231.56	10,005.67	2,007.21	1,777.11	230.10	8.723
18,500.00	8,523.00	18,934.72	8,853.00	116.99	118.47	-99.46	1,232.22	10,105.67	2,007.21	1,774.97	232.24	8.643
18,600.00	8,523.00	19,034.72	8,853.00	118.07	119.55	-99.46	1,232.88	10,205.66	2,007.21	1,772.83	234.38	8.564
18,700.00	8,523.00	19,134.72	8,853.00	119.16	120.63	-99.46	1,233.55	10,305.66	2,007.21	1,770.69	236.51	8.487

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
18,800.00	8,523.00	19,234.72	8,853.00	120.24	121.72	-99.46	1,234.21	10,405.66	2,007.21	1,768.55	238.66	8.410		
18,900.00	8,523.00	19,334.72	8,853.00	121.33	122.80	-99.46	1,234.87	10,505.66	2,007.21	1,766.41	240.80	8.336		
19,000.00	8,523.00	19,434.72	8,853.00	122.42	123.88	-99.46	1,235.53	10,605.65	2,007.20	1,764.26	242.94	8.262		
19,100.00	8,523.00	19,534.72	8,853.00	123.51	124.97	-99.46	1,236.20	10,705.65	2,007.20	1,762.12	245.09	8.190		
19,200.00	8,523.00	19,634.72	8,853.00	124.59	126.05	-99.46	1,236.86	10,805.65	2,007.20	1,759.97	247.23	8.119		
19,235.87	8,523.00	19,670.59	8,853.00	124.99	126.44	-99.46	1,237.10	10,841.52	2,007.20	1,759.20	248.00	8.093 SF		



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
400.00	400.00	400.00	400.00	1.20	1.20	-90.13	-0.14	-59.97	59.97	57.57	2.40	24.969	
500.00	500.00	500.00	500.00	1.56	1.56	-90.13	-0.14	-59.97	59.97	56.85	3.12	19.229	
600.00	600.00	600.00	600.00	1.92	1.92	-90.13	-0.14	-59.97	59.97	56.13	3.84	15.635	
700.00	700.00	700.00	700.00	2.28	2.28	-90.13	-0.14	-59.97	59.97	55.42	4.55	13.173	
800.00	800.00	800.00	800.00	2.63	2.63	-90.13	-0.14	-59.97	59.97	54.70	5.27	11.381	
900.00	900.00	900.00	900.00	2.99	2.99	-90.13	-0.14	-59.97	59.97	53.98	5.99	10.018	
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	-90.13	-0.14	-59.97	59.97	53.27	6.70	8.946	
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	-90.13	-0.14	-59.97	59.97	52.55	7.42	8.082	
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	-90.13	-0.14	-59.97	59.97	51.83	8.14	7.370 CC	
1,300.00	1,299.99	1,299.56	1,299.54	4.41	4.41	86.46	-1.36	-60.37	60.30	51.48	8.81	6.840	
1,400.00	1,399.91	1,399.54	1,399.50	4.74	4.73	88.06	-3.56	-61.11	60.81	51.35	9.47	6.423	
1,500.00	1,499.69	1,499.44	1,499.38	5.07	5.07	92.08	-5.77	-61.84	61.42	51.29	10.13	6.064 ES	
1,600.00	1,599.27	1,599.20	1,599.10	5.40	5.40	98.35	-7.97	-62.57	62.65	51.85	10.80	5.802	
1,700.00	1,698.57	1,698.74	1,698.62	5.74	5.74	106.50	-10.17	-63.30	65.30	53.83	11.47	5.692	
1,713.40	1,711.86	1,712.06	1,711.94	5.79	5.78	107.69	-10.46	-63.40	65.81	54.25	11.56	5.692	
1,800.00	1,797.67	1,798.11	1,797.97	6.08	6.07	115.11	-12.36	-64.03	69.85	57.70	12.15	5.749	
1,900.00	1,896.77	1,897.49	1,897.31	6.42	6.42	122.55	-14.56	-64.76	75.80	62.97	12.84	5.906	
2,000.00	1,995.87	1,996.86	1,996.66	6.77	6.76	128.83	-16.75	-65.49	82.84	69.32	13.52	6.126	
2,100.00	2,094.97	2,096.23	2,096.00	7.12	7.10	134.08	-18.94	-66.22	90.72	76.51	14.21	6.384	
2,200.00	2,194.07	2,195.60	2,195.35	7.48	7.45	138.47	-21.14	-66.95	99.23	84.33	14.90	6.659	
2,300.00	2,293.16	2,294.98	2,294.70	7.83	7.79	142.14	-23.33	-67.68	108.23	92.64	15.59	6.940	
2,400.00	2,392.26	2,394.35	2,394.04	8.19	8.14	145.25	-25.52	-68.41	117.61	101.32	16.29	7.220	
2,500.00	2,491.36	2,493.72	2,493.39	8.55	8.49	147.89	-27.72	-69.14	127.28	110.29	16.98	7.494	
2,600.00	2,590.46	2,593.09	2,592.73	8.91	8.84	150.16	-29.91	-69.87	137.18	119.49	17.68	7.758	
2,700.00	2,689.56	2,692.47	2,692.08	9.27	9.18	152.12	-32.10	-70.60	147.26	128.88	18.38	8.012	
2,800.00	2,788.66	2,791.84	2,791.42	9.63	9.53	153.82	-34.30	-71.33	157.49	138.41	19.08	8.254	
2,900.00	2,887.75	2,891.21	2,890.77	10.00	9.89	155.32	-36.49	-72.06	167.85	148.07	19.78	8.486	
3,000.00	2,986.85	2,990.58	2,990.11	10.36	10.24	156.64	-38.68	-72.78	178.30	157.82	20.48	8.705	
3,100.00	3,085.95	3,089.96	3,089.46	10.72	10.59	157.82	-40.88	-73.51	188.84	167.66	21.18	8.914	
3,200.00	3,185.05	3,189.33	3,188.81	11.09	10.94	158.87	-43.07	-74.24	199.45	177.56	21.89	9.113	
3,300.00	3,284.15	3,288.70	3,288.15	11.46	11.29	159.82	-45.27	-74.97	210.12	187.53	22.59	9.301	
3,400.00	3,383.24	3,388.07	3,387.50	11.82	11.64	160.67	-47.46	-75.70	220.84	197.54	23.30	9.480	
3,500.00	3,482.34	3,487.45	3,486.84	12.19	12.00	161.44	-49.65	-76.43	231.60	207.60	24.00	9.650	
3,600.00	3,581.44	3,586.82	3,586.19	12.56	12.35	162.15	-51.85	-77.16	242.40	217.70	24.71	9.811	
3,700.00	3,680.54	3,686.19	3,685.53	12.93	12.70	162.80	-54.04	-77.89	253.24	227.83	25.41	9.965	
3,800.00	3,779.64	3,785.56	3,784.88	13.30	13.06	163.39	-56.23	-78.62	264.10	237.98	26.12	10.111	
3,900.00	3,878.73	3,884.94	3,884.22	13.67	13.41	163.93	-58.43	-79.35	274.99	248.17	26.83	10.251	
4,000.00	3,977.83	3,984.31	3,983.57	14.03	13.76	164.44	-60.62	-80.08	285.91	258.37	27.53	10.383	
4,100.00	4,076.93	4,083.68	4,082.92	14.40	14.12	164.90	-62.81	-80.81	296.84	268.60	28.24	10.510	
4,200.00	4,176.03	4,183.05	4,182.26	14.77	14.47	165.34	-65.01	-81.54	307.79	278.84	28.95	10.631	
4,300.00	4,275.13	4,282.43	4,281.61	15.14	14.83	165.74	-67.20	-82.27	318.76	289.10	29.66	10.747	
4,400.00	4,374.22	4,381.80	4,380.95	15.52	15.18	166.12	-69.39	-82.99	329.74	299.37	30.37	10.858	
4,500.00	4,473.32	4,481.17	4,480.30	15.89	15.54	166.47	-71.59	-83.72	340.74	309.66	31.08	10.964	
4,600.00	4,572.42	4,580.54	4,579.64	16.26	15.89	166.80	-73.78	-84.45	351.74	319.96	31.79	11.065	
4,700.00	4,671.52	4,679.92	4,678.99	16.63	16.24	167.11	-75.98	-85.18	362.76	330.26	32.50	11.163	
4,800.00	4,770.62	4,779.29	4,778.34	17.00	16.60	167.41	-78.17	-85.91	373.79	340.58	33.21	11.256	
4,900.00	4,869.71	4,878.66	4,877.68	17.37	16.95	167.68	-80.36	-86.64	384.83	350.91	33.92	11.346	
5,000.00	4,968.81	4,978.03	4,977.03	17.74	17.31	167.94	-82.56	-87.37	395.87	361.24	34.63	11.432	
5,100.00	5,067.91	5,077.41	5,076.37	18.11	17.67	168.19	-84.75	-88.10	406.93	371.59	35.34	11.515	
5,200.00	5,167.01	5,176.78	5,175.72	18.49	18.02	168.42	-86.94	-88.83	417.99	381.93	36.05	11.594	
5,300.00	5,266.11	5,276.15	5,275.06	18.86	18.38	168.64	-89.14	-89.56	429.05	392.29	36.76	11.671	
5,400.00	5,365.21	5,375.52	5,374.41	19.23	18.73	168.85	-91.33	-90.29	440.12	402.65	37.47	11.745	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,500.00	5,464.30	5,474.90	5,473.75	19.60	19.09	169.05	-93.52	-91.02	451.20	413.02	38.19	11.816	
5,600.00	5,563.40	5,574.27	5,573.10	19.98	19.44	169.24	-95.72	-91.75	462.29	423.39	38.90	11.885	
5,700.00	5,662.50	5,673.64	5,672.45	20.35	19.80	169.42	-97.91	-92.48	473.37	433.77	39.61	11.951	
5,800.00	5,761.60	5,773.01	5,771.79	20.72	20.15	169.60	-100.10	-93.20	484.47	444.15	40.32	12.015	
5,900.00	5,860.70	5,872.38	5,871.14	21.09	20.51	169.76	-102.30	-93.93	495.56	454.53	41.03	12.077	
6,000.00	5,959.79	5,971.76	5,970.48	21.47	20.87	169.92	-104.49	-94.66	506.66	464.92	41.75	12.137	
6,100.00	6,058.89	6,071.13	6,069.83	21.84	21.22	170.07	-106.68	-95.39	517.77	475.31	42.46	12.195	
6,200.00	6,157.99	6,170.50	6,169.17	22.21	21.58	170.21	-108.88	-96.12	528.88	485.71	43.17	12.251	
6,300.00	6,257.09	6,269.87	6,268.52	22.58	21.93	170.35	-111.07	-96.85	539.99	496.11	43.88	12.305	
6,400.00	6,356.19	6,369.25	6,367.86	22.96	22.29	170.49	-113.27	-97.58	551.10	506.51	44.60	12.358	
6,500.00	6,455.28	6,468.62	6,467.21	23.33	22.65	170.61	-115.46	-98.31	562.22	516.91	45.31	12.409	
6,600.00	6,554.38	6,567.99	6,566.56	23.70	23.00	170.74	-117.65	-99.04	573.34	527.32	46.02	12.458	
6,700.00	6,653.48	6,667.36	6,665.90	24.08	23.36	170.86	-119.85	-99.77	584.46	537.73	46.73	12.506	
6,800.00	6,752.58	6,766.74	6,765.25	24.45	23.71	170.97	-122.04	-100.50	595.58	548.14	47.45	12.553	
6,900.00	6,851.68	6,866.11	6,864.59	24.82	24.07	171.08	-124.23	-101.23	606.71	558.55	48.16	12.598	
7,000.00	6,950.77	6,965.48	6,963.94	25.20	24.43	171.19	-126.43	-101.96	617.84	568.97	48.87	12.641	
7,100.00	7,049.87	7,064.85	7,063.28	25.57	24.78	171.29	-128.62	-102.69	628.97	579.38	49.59	12.684	
7,200.00	7,148.97	7,164.23	7,162.63	25.95	25.14	171.39	-130.81	-103.42	640.10	589.80	50.30	12.725	
7,300.00	7,248.07	7,263.60	7,261.98	26.32	25.49	171.48	-133.01	-104.14	651.24	600.22	51.01	12.766	
7,340.44	7,288.14	7,303.78	7,302.15	26.47	25.64	171.52	-133.89	-104.44	655.74	604.44	51.30	12.782	
7,400.00	7,347.23	7,363.02	7,361.37	26.69	25.85	171.58	-135.20	-104.87	661.92	610.19	51.73	12.796	
7,500.00	7,446.67	7,462.67	7,460.99	27.06	26.21	171.65	-137.40	-105.61	670.23	617.79	52.44	12.780	
7,600.00	7,546.35	7,562.50	7,560.80	27.42	26.57	171.68	-139.61	-106.34	675.96	622.80	53.16	12.716	
7,700.00	7,646.20	7,662.45	7,660.72	27.78	26.93	171.68	-141.81	-107.07	679.10	625.23	53.87	12.606	
7,800.00	7,746.16	7,762.45	7,760.69	28.14	27.28	171.64	-144.02	-107.81	679.65	625.07	54.58	12.451	
7,853.84	7,800.00	7,816.28	7,814.50	28.32	27.48	-4.92	-145.21	-108.20	678.88	623.92	54.96	12.352	
7,900.00	7,846.16	7,862.43	7,860.64	28.46	27.64	-4.96	-146.23	-108.54	677.89	622.61	55.28	12.263	
8,003.88	7,950.04	7,966.28	7,964.46	28.79	28.02	-5.04	-148.52	-109.30	675.67	619.68	55.99	12.068	
8,050.00	7,996.11	8,012.32	8,010.49	28.94	28.18	-94.31	-149.53	-109.64	674.82	618.51	56.31	11.984	
8,092.49	8,038.30	8,048.70	8,046.86	29.08	28.31	-94.73	-150.18	-109.85	674.49	617.93	56.56	11.925	
8,100.00	8,045.71	8,055.08	8,053.24	29.11	28.33	-94.82	-150.26	-109.88	674.50	617.90	56.61	11.916	
8,150.00	8,094.58	8,101.84	8,100.00	29.27	28.49	-95.61	-150.53	-109.97	675.18	618.25	56.93	11.860	
8,200.00	8,142.35	8,144.19	8,142.35	29.42	28.63	-96.52	-150.53	-109.97	676.77	619.55	57.21	11.829	
8,250.00	8,188.66	8,190.50	8,188.66	29.57	28.78	-97.73	-150.53	-109.97	679.29	621.76	57.53	11.808	
8,300.00	8,233.15	8,234.99	8,233.15	29.71	28.93	-99.05	-150.53	-109.97	683.03	625.19	57.84	11.810	
8,350.00	8,275.49	8,277.32	8,275.49	29.84	29.07	-100.39	-150.53	-109.97	688.31	630.18	58.13	11.841	
8,400.00	8,315.35	8,334.92	8,333.01	29.95	29.26	-102.42	-150.53	-107.52	695.04	636.52	58.52	11.876	
8,450.00	8,352.43	8,399.79	8,397.12	30.05	29.48	-104.58	-150.55	-97.88	702.54	643.64	58.90	11.928	
8,500.00	8,386.45	8,471.24	8,465.97	30.14	29.71	-106.78	-150.58	-78.96	710.52	651.33	59.19	12.004	
8,550.00	8,417.14	8,550.48	8,538.91	30.22	29.95	-109.01	-150.64	-48.15	718.62	659.29	59.33	12.112	
8,600.00	8,444.28	8,638.67	8,614.22	30.28	30.18	-111.20	-150.72	-2.42	726.35	667.09	59.26	12.257	
8,650.00	8,467.66	8,736.57	8,688.49	30.33	30.43	-113.24	-150.83	61.18	733.16	674.20	58.96	12.434	
8,700.00	8,487.10	8,844.04	8,756.25	30.38	30.70	-114.97	-150.97	144.39	738.42	679.92	58.50	12.623	
8,750.00	8,502.46	8,959.42	8,810.35	30.42	30.97	-116.18	-151.15	246.08	741.52	683.48	58.04	12.776	
8,800.00	8,513.61	9,079.32	8,843.84	30.46	31.24	-116.70	-151.35	360.98	742.01	684.16	57.85	12.827	
8,850.00	8,520.47	9,187.76	8,853.00	30.51	31.47	-116.54	-151.53	468.87	739.78	681.71	58.07	12.739	
8,903.88	8,523.00	9,237.38	8,853.00	30.57	31.57	-116.56	-151.26	518.50	738.07	679.74	58.32	12.655	
8,934.88	8,523.00	9,268.39	8,853.00	30.62	31.64	-116.56	-151.06	549.50	737.92	679.47	58.45	12.626	
9,000.00	8,523.00	9,333.50	8,853.00	30.74	31.80	-116.56	-150.63	614.61	737.92	679.19	58.73	12.565	
9,100.00	8,523.00	9,433.50	8,853.00	30.97	32.07	-116.56	-149.96	714.61	737.91	678.69	59.22	12.460	
9,200.00	8,523.00	9,533.50	8,853.00	31.26	32.39	-116.56	-149.30	814.61	737.91	678.13	59.78	12.344	
9,300.00	8,523.00	9,633.50	8,853.00	31.58	32.73	-116.56	-148.64	914.61	737.91	677.51	60.40	12.216	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,400.00	8,523.00	9,733.50	8,853.00	31.95	33.11	-116.56	-147.97	1,014.60	737.91	676.83	61.09	12.079	
9,500.00	8,523.00	9,833.50	8,853.00	32.35	33.52	-116.56	-147.31	1,114.60	737.91	676.08	61.83	11.934	
9,600.00	8,523.00	9,933.50	8,853.00	32.78	33.97	-116.56	-146.65	1,214.60	737.91	675.28	62.63	11.781	
9,700.00	8,523.00	10,033.50	8,853.00	33.25	34.45	-116.56	-145.99	1,314.60	737.91	674.42	63.49	11.622	
9,800.00	8,523.00	10,133.50	8,853.00	33.75	34.95	-116.56	-145.32	1,414.59	737.91	673.51	64.40	11.458	
9,900.00	8,523.00	10,233.50	8,853.00	34.28	35.48	-116.56	-144.66	1,514.59	737.91	672.55	65.36	11.290	
10,000.00	8,523.00	10,333.50	8,853.00	34.83	36.05	-116.56	-144.00	1,614.59	737.91	671.54	66.37	11.118	
10,100.00	8,523.00	10,433.50	8,853.00	35.42	36.63	-116.56	-143.34	1,714.59	737.91	670.48	67.43	10.944	
10,200.00	8,523.00	10,533.50	8,853.00	36.03	37.24	-116.56	-142.67	1,814.59	737.91	669.38	68.53	10.768	
10,300.00	8,523.00	10,633.50	8,853.00	36.66	37.88	-116.56	-142.01	1,914.58	737.91	668.24	69.67	10.591	
10,400.00	8,523.00	10,733.50	8,853.00	37.32	38.54	-116.56	-141.35	2,014.58	737.91	667.06	70.85	10.415	
10,500.00	8,523.00	10,833.50	8,853.00	37.99	39.21	-116.56	-140.68	2,114.58	737.91	665.84	72.07	10.238	
10,600.00	8,523.00	10,933.50	8,853.00	38.69	39.91	-116.56	-140.02	2,214.58	737.91	664.58	73.33	10.063	
10,700.00	8,523.00	11,033.50	8,853.00	39.41	40.63	-116.56	-139.36	2,314.57	737.91	663.28	74.62	9.888	
10,800.00	8,523.00	11,133.50	8,853.00	40.15	41.36	-116.56	-138.70	2,414.57	737.91	661.96	75.95	9.716	
10,900.00	8,523.00	11,233.50	8,853.00	40.90	42.12	-116.56	-138.03	2,514.57	737.91	660.60	77.31	9.545	
11,000.00	8,523.00	11,333.50	8,853.00	41.67	42.88	-116.56	-137.37	2,614.57	737.91	659.22	78.69	9.377	
11,100.00	8,523.00	11,433.50	8,853.00	42.46	43.67	-116.56	-136.71	2,714.57	737.91	657.80	80.10	9.212	
11,200.00	8,523.00	11,533.50	8,853.00	43.26	44.46	-116.56	-136.05	2,814.56	737.91	656.36	81.54	9.049	
11,300.00	8,523.00	11,633.50	8,853.00	44.08	45.28	-116.56	-135.38	2,914.56	737.91	654.90	83.01	8.889	
11,400.00	8,523.00	11,733.50	8,853.00	44.90	46.10	-116.56	-134.72	3,014.56	737.91	653.41	84.50	8.733	
11,500.00	8,523.00	11,833.50	8,853.00	45.75	46.94	-116.56	-134.06	3,114.56	737.91	651.90	86.01	8.579	
11,600.00	8,523.00	11,933.50	8,853.00	46.60	47.79	-116.56	-133.39	3,214.55	737.91	650.36	87.54	8.429	
11,700.00	8,523.00	12,033.50	8,853.00	47.46	48.65	-116.56	-132.73	3,314.55	737.91	648.81	89.10	8.282	
11,800.00	8,523.00	12,133.50	8,853.00	48.34	49.52	-116.56	-132.07	3,414.55	737.91	647.24	90.67	8.139	
11,900.00	8,523.00	12,233.50	8,853.00	49.22	50.40	-116.56	-131.41	3,514.55	737.91	645.65	92.26	7.998	
12,000.00	8,523.00	12,333.50	8,853.00	50.12	51.29	-116.56	-130.74	3,614.55	737.91	644.04	93.87	7.861	
12,100.00	8,523.00	12,433.50	8,853.00	51.02	52.19	-116.56	-130.08	3,714.54	737.90	642.41	95.49	7.727	
12,200.00	8,523.00	12,533.50	8,853.00	51.93	53.09	-116.56	-129.42	3,814.54	737.90	640.77	97.13	7.597	
12,300.00	8,523.00	12,633.50	8,853.00	52.85	54.01	-116.56	-128.76	3,914.54	737.90	639.12	98.79	7.470	
12,400.00	8,523.00	12,733.50	8,853.00	53.78	54.93	-116.56	-128.09	4,014.54	737.90	637.45	100.46	7.346	
12,500.00	8,523.00	12,833.50	8,853.00	54.71	55.86	-116.57	-127.43	4,114.53	737.90	635.77	102.14	7.225	
12,600.00	8,523.00	12,933.50	8,853.00	55.66	56.80	-116.57	-126.77	4,214.53	737.90	634.07	103.83	7.107	
12,700.00	8,523.00	13,033.50	8,853.00	56.60	57.74	-116.57	-126.10	4,314.53	737.90	632.36	105.54	6.992	
12,800.00	8,523.00	13,133.50	8,853.00	57.56	58.69	-116.57	-125.44	4,414.53	737.90	630.64	107.26	6.880	
12,900.00	8,523.00	13,233.50	8,853.00	58.52	59.65	-116.57	-124.78	4,514.53	737.90	628.91	108.99	6.770	
13,000.00	8,523.00	13,333.50	8,853.00	59.48	60.61	-116.57	-124.12	4,614.52	737.90	627.17	110.73	6.664	
13,100.00	8,523.00	13,433.50	8,853.00	60.46	61.58	-116.57	-123.45	4,714.52	737.90	625.42	112.48	6.560	
13,200.00	8,523.00	13,533.50	8,853.00	61.43	62.55	-116.57	-122.79	4,814.52	737.90	623.66	114.24	6.459	
13,300.00	8,523.00	13,633.50	8,853.00	62.41	63.53	-116.57	-122.13	4,914.52	737.90	621.89	116.01	6.361	
13,400.00	8,523.00	13,733.50	8,853.00	63.40	64.51	-116.57	-121.46	5,014.52	737.90	620.11	117.79	6.265	
13,500.00	8,523.00	13,833.50	8,853.00	64.39	65.50	-116.57	-120.80	5,114.51	737.90	618.33	119.57	6.171	
13,600.00	8,523.00	13,933.50	8,853.00	65.39	66.49	-116.57	-120.14	5,214.51	737.90	616.53	121.37	6.080	
13,700.00	8,523.00	14,033.50	8,853.00	66.39	67.48	-116.57	-119.48	5,314.51	737.90	614.73	123.17	5.991	
13,800.00	8,523.00	14,133.50	8,853.00	67.39	68.48	-116.57	-118.81	5,414.51	737.90	612.92	124.98	5.904	
13,900.00	8,523.00	14,233.50	8,853.00	68.39	69.48	-116.57	-118.15	5,514.50	737.90	611.10	126.79	5.820	
14,000.00	8,523.00	14,333.50	8,853.00	69.40	70.49	-116.57	-117.49	5,614.50	737.90	609.28	128.62	5.737	
14,100.00	8,523.00	14,433.50	8,853.00	70.42	71.50	-116.57	-116.83	5,714.50	737.90	607.45	130.45	5.657	
14,200.00	8,523.00	14,533.50	8,853.00	71.43	72.51	-116.57	-116.16	5,814.50	737.90	605.62	132.28	5.578	
14,300.00	8,523.00	14,633.50	8,853.00	72.45	73.53	-116.57	-115.50	5,914.50	737.90	603.77	134.12	5.502	
14,400.00	8,523.00	14,733.50	8,853.00	73.48	74.55	-116.57	-114.84	6,014.49	737.90	601.93	135.97	5.427	
14,500.00	8,523.00	14,833.50	8,853.00	74.50	75.57	-116.57	-114.17	6,114.49	737.90	600.08	137.82	5.354	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	Offset	Reference	Offset	Semi Major Axis		Offset Wellbore Centre			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
14,600.00	8,523.00	14,933.50	8,853.00	75.53	76.59	-116.57	-113.51	6,214.49	737.90	598.22	139.68	5.283			
14,700.00	8,523.00	15,033.50	8,853.00	76.56	77.62	-116.57	-112.85	6,314.49	737.90	596.35	141.54	5.213			
14,800.00	8,523.00	15,133.50	8,853.00	77.60	78.65	-116.57	-112.19	6,414.48	737.90	594.49	143.41	5.145			
14,900.00	8,523.00	15,233.50	8,853.00	78.63	79.68	-116.57	-111.52	6,514.48	737.90	592.62	145.28	5.079			
15,000.00	8,523.00	15,333.50	8,853.00	79.67	80.72	-116.57	-110.86	6,614.48	737.90	590.74	147.16	5.014			
15,100.00	8,523.00	15,433.50	8,853.00	80.71	81.76	-116.57	-110.20	6,714.48	737.90	588.86	149.04	4.951			
15,200.00	8,523.00	15,533.50	8,853.00	81.75	82.80	-116.57	-109.54	6,814.48	737.89	586.97	150.92	4.889			
15,300.00	8,523.00	15,633.50	8,853.00	82.80	83.84	-116.57	-108.87	6,914.47	737.89	585.08	152.81	4.829			
15,400.00	8,523.00	15,733.50	8,853.00	83.84	84.88	-116.57	-108.21	7,014.47	737.89	583.19	154.70	4.770			
15,500.00	8,523.00	15,833.50	8,853.00	84.89	85.93	-116.57	-107.55	7,114.47	737.89	581.29	156.60	4.712			
15,600.00	8,523.00	15,933.50	8,853.00	85.94	86.97	-116.57	-106.88	7,214.47	737.89	579.39	158.50	4.656			
15,700.00	8,523.00	16,033.50	8,853.00	87.00	88.02	-116.57	-106.22	7,314.46	737.89	577.49	160.40	4.600			
15,800.00	8,523.00	16,133.50	8,853.00	88.05	89.07	-116.57	-105.56	7,414.46	737.89	575.58	162.31	4.546			
15,900.00	8,523.00	16,233.50	8,853.00	89.11	90.13	-116.57	-104.90	7,514.46	737.89	573.68	164.22	4.493			
16,000.00	8,523.00	16,333.50	8,853.00	90.16	91.18	-116.57	-104.23	7,614.46	737.89	571.76	166.13	4.442			
16,100.00	8,523.00	16,433.50	8,853.00	91.22	92.24	-116.57	-103.57	7,714.46	737.89	569.85	168.05	4.391			
16,200.00	8,523.00	16,533.50	8,853.00	92.28	93.29	-116.57	-102.91	7,814.45	737.89	567.93	169.96	4.341			
16,300.00	8,523.00	16,633.50	8,853.00	93.34	94.35	-116.57	-102.25	7,914.45	737.89	566.01	171.88	4.293			
16,400.00	8,523.00	16,733.50	8,853.00	94.41	95.41	-116.57	-101.58	8,014.45	737.89	564.08	173.81	4.245			
16,500.00	8,523.00	16,833.50	8,853.00	95.47	96.48	-116.57	-100.92	8,114.45	737.89	562.16	175.74	4.199			
16,600.00	8,523.00	16,933.50	8,853.00	96.54	97.54	-116.57	-100.26	8,214.45	737.89	560.23	177.66	4.153			
16,700.00	8,523.00	17,033.50	8,853.00	97.60	98.60	-116.57	-99.59	8,314.44	737.89	558.29	179.60	4.109			
16,800.00	8,523.00	17,133.50	8,853.00	98.67	99.67	-116.57	-98.93	8,414.44	737.89	556.36	181.53	4.065			
16,900.00	8,523.00	17,233.50	8,853.00	99.74	100.74	-116.57	-98.27	8,514.44	737.89	554.42	183.47	4.022			
17,000.00	8,523.00	17,333.50	8,853.00	100.81	101.81	-116.57	-97.61	8,614.44	737.89	552.49	185.40	3.980			
17,100.00	8,523.00	17,433.50	8,853.00	101.88	102.87	-116.57	-96.94	8,714.43	737.89	550.54	187.34	3.939			
17,200.00	8,523.00	17,533.50	8,853.00	102.96	103.95	-116.57	-96.28	8,814.43	737.89	548.60	189.29	3.898			
17,300.00	8,523.00	17,633.50	8,853.00	104.03	105.02	-116.57	-95.62	8,914.43	737.89	546.66	191.23	3.859			
17,400.00	8,523.00	17,733.50	8,853.00	105.11	106.09	-116.57	-94.96	9,014.43	737.89	544.71	193.18	3.820			
17,500.00	8,523.00	17,833.50	8,853.00	106.18	107.16	-116.57	-94.29	9,114.43	737.89	542.76	195.13	3.782			
17,600.00	8,523.00	17,933.50	8,853.00	107.26	108.24	-116.57	-93.63	9,214.42	737.89	540.81	197.08	3.744			
17,700.00	8,523.00	18,033.50	8,853.00	108.34	109.31	-116.57	-92.97	9,314.42	737.89	538.86	199.03	3.707			
17,800.00	8,523.00	18,133.50	8,853.00	109.41	110.39	-116.57	-92.30	9,414.42	737.89	536.91	200.98	3.671			
17,900.00	8,523.00	18,233.50	8,853.00	110.49	111.47	-116.57	-91.64	9,514.42	737.89	534.95	202.94	3.636			
18,000.00	8,523.00	18,333.50	8,853.00	111.57	112.55	-116.57	-90.98	9,614.41	737.89	532.99	204.89	3.601			
18,100.00	8,523.00	18,433.50	8,853.00	112.66	113.62	-116.57	-90.32	9,714.41	737.89	531.03	206.85	3.567			
18,200.00	8,523.00	18,533.50	8,853.00	113.74	114.70	-116.57	-89.65	9,814.41	737.88	529.07	208.81	3.534			
18,300.00	8,523.00	18,633.50	8,853.00	114.82	115.79	-116.57	-88.99	9,914.41	737.88	527.11	210.77	3.501			
18,400.00	8,523.00	18,733.50	8,853.00	115.90	116.87	-116.57	-88.33	10,014.41	737.88	525.15	212.74	3.469			
18,500.00	8,523.00	18,833.50	8,853.00	116.99	117.95	-116.57	-87.67	10,114.40	737.88	523.18	214.70	3.437			
18,600.00	8,523.00	18,933.50	8,853.00	118.07	119.03	-116.57	-87.00	10,214.40	737.88	521.22	216.67	3.406			
18,700.00	8,523.00	19,033.50	8,853.00	119.16	120.12	-116.57	-86.34	10,314.40	737.88	519.25	218.63	3.375			
18,800.00	8,523.00	19,133.50	8,853.00	120.24	121.20	-116.57	-85.68	10,414.40	737.88	517.28	220.60	3.345			
18,900.00	8,523.00	19,233.50	8,853.00	121.33	122.28	-116.57	-85.01	10,514.39	737.88	515.31	222.57	3.315			
19,000.00	8,523.00	19,333.50	8,853.00	122.42	123.37	-116.57	-84.35	10,614.39	737.88	513.34	224.54	3.286			
19,100.00	8,523.00	19,433.50	8,853.00	123.51	124.46	-116.57	-83.69	10,714.39	737.88	511.37	226.51	3.258			
19,200.00	8,523.00	19,533.50	8,853.00	124.59	125.54	-116.57	-83.03	10,814.39	737.88	509.39	228.49	3.229			
19,235.87	8,523.00	19,569.37	8,853.00	124.99	125.93	-116.57	-82.79	10,850.26	737.88	508.69	229.20	3.219 SF			

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
300.00	300.00	300.00	300.00	0.84	0.84	-90.04	-0.02	-29.96	29.96	28.28	1.68	17.782	
400.00	400.00	400.00	400.00	1.20	1.20	-90.04	-0.02	-29.96	29.96	27.56	2.40	12.474	
500.00	500.00	500.00	500.00	1.56	1.56	-90.04	-0.02	-29.96	29.96	26.84	3.12	9.607	
600.00	600.00	600.00	600.00	1.92	1.92	-90.04	-0.02	-29.96	29.96	26.12	3.84	7.811	
700.00	700.00	700.00	700.00	2.28	2.28	-90.04	-0.02	-29.96	29.96	25.41	4.55	6.581	
800.00	800.00	800.00	800.00	2.63	2.63	-90.04	-0.02	-29.96	29.96	24.69	5.27	5.686	
900.00	900.00	900.00	900.00	2.99	2.99	-90.04	-0.02	-29.96	29.96	23.97	5.99	5.005	
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	-90.04	-0.02	-29.96	29.96	23.26	6.70	4.469	
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	-90.04	-0.02	-29.96	29.96	22.54	7.42	4.038	
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	-90.04	-0.02	-29.96	29.96	21.82	8.14	3.682 CC	
1,200.04	1,200.04	1,200.04	1,200.04	4.07	4.07	-90.04	-0.02	-29.96	29.96	21.82	8.14	3.682	
1,300.00	1,299.99	1,299.87	1,299.85	4.41	4.43	91.44	1.28	-30.07	30.10	21.27	8.83	3.407 ES	
1,400.00	1,399.91	1,399.33	1,399.24	4.74	4.78	105.48	5.16	-30.40	31.83	22.32	9.51	3.346 SF	
1,500.00	1,499.69	1,497.98	1,497.68	5.07	5.14	123.87	11.56	-30.94	38.22	28.03	10.19	3.751	
1,600.00	1,599.27	1,595.44	1,594.73	5.40	5.49	139.60	20.36	-31.69	51.45	40.59	10.85	4.740	
1,700.00	1,698.57	1,691.82	1,690.47	5.74	5.83	150.30	31.38	-32.63	71.42	59.91	11.51	6.203	
1,713.40	1,711.86	1,704.80	1,703.35	5.79	5.88	151.39	32.95	-32.76	74.48	62.88	11.61	6.418	
1,800.00	1,797.67	1,788.59	1,786.53	6.08	6.17	156.88	43.06	-33.62	94.88	82.69	12.19	7.785	
1,900.00	1,896.77	1,885.35	1,882.58	6.42	6.52	160.85	54.74	-34.62	119.08	106.21	12.86	9.258	
2,000.00	1,995.87	1,982.11	1,978.63	6.77	6.86	163.48	66.42	-35.61	143.63	130.09	13.54	10.608	
2,100.00	2,094.97	2,078.87	2,074.68	7.12	7.21	165.34	78.10	-36.60	168.39	154.17	14.22	11.842	
2,200.00	2,194.07	2,175.64	2,170.73	7.48	7.56	166.72	89.78	-37.60	193.28	178.38	14.90	12.971	
2,300.00	2,293.16	2,272.40	2,266.78	7.83	7.90	167.79	101.46	-38.59	218.24	202.66	15.58	14.004	
2,400.00	2,392.26	2,369.16	2,362.83	8.19	8.25	168.64	113.14	-39.58	243.26	227.00	16.27	14.952	
2,500.00	2,491.36	2,465.92	2,458.88	8.55	8.60	169.33	124.82	-40.58	268.33	251.37	16.96	15.826	
2,600.00	2,590.46	2,562.69	2,554.93	8.91	8.95	169.90	136.49	-41.57	293.42	275.78	17.64	16.632	
2,700.00	2,689.56	2,659.45	2,650.98	9.27	9.30	170.39	148.17	-42.56	318.54	300.21	18.33	17.378	
2,800.00	2,788.66	2,756.21	2,747.03	9.63	9.65	170.80	159.85	-43.56	343.67	324.65	19.02	18.070	
2,900.00	2,887.75	2,852.97	2,843.08	10.00	10.00	171.15	171.53	-44.55	368.82	349.11	19.71	18.713	
3,000.00	2,986.85	2,949.74	2,939.13	10.36	10.35	171.47	183.21	-45.54	393.98	373.58	20.40	19.313	
3,100.00	3,085.95	3,046.50	3,035.18	10.72	10.70	171.74	194.89	-46.53	419.15	398.06	21.09	19.874	
3,200.00	3,185.05	3,143.26	3,131.23	11.09	11.05	171.98	206.57	-47.53	444.33	422.55	21.78	20.399	
3,300.00	3,284.15	3,240.02	3,227.28	11.46	11.40	172.20	218.25	-48.52	469.52	447.04	22.47	20.891	
3,400.00	3,383.24	3,336.78	3,323.33	11.82	11.75	172.39	229.93	-49.51	494.71	471.54	23.17	21.353	
3,500.00	3,482.34	3,433.55	3,419.38	12.19	12.10	172.57	241.60	-50.51	519.90	496.04	23.86	21.789	
3,600.00	3,581.44	3,530.31	3,515.43	12.56	12.45	172.73	253.28	-51.50	545.10	520.55	24.55	22.200	
3,700.00	3,680.54	3,627.07	3,611.48	12.93	12.80	172.87	264.96	-52.49	570.30	545.06	25.25	22.588	
3,800.00	3,779.64	3,723.83	3,707.53	13.30	13.15	173.00	276.64	-53.49	595.51	569.57	25.94	22.955	
3,900.00	3,878.73	3,820.60	3,803.58	13.67	13.50	173.13	288.32	-54.48	620.72	594.08	26.64	23.302	
4,000.00	3,977.83	3,917.36	3,899.63	14.03	13.85	173.24	300.00	-55.47	645.93	618.60	27.33	23.632	
4,100.00	4,076.93	4,014.12	3,995.68	14.40	14.20	173.34	311.68	-56.47	671.14	643.12	28.03	23.945	
4,200.00	4,176.03	4,110.88	4,091.72	14.77	14.55	173.44	323.36	-57.46	696.36	667.63	28.72	24.243	
4,300.00	4,275.13	4,207.65	4,187.77	15.14	14.90	173.53	335.04	-58.45	721.58	692.16	29.42	24.527	
4,400.00	4,374.22	4,304.41	4,283.82	15.52	15.26	173.61	346.71	-59.45	746.79	716.68	30.12	24.797	
8,003.88	7,950.04	8,032.36	7,974.48	28.79	28.43	3.22	579.19	28.90	1,403.05	1,346.73	56.32	24.911	
8,050.00	7,996.11	8,071.78	8,005.56	28.94	28.52	-84.91	577.25	53.05	1,402.33	1,345.74	56.59	24.779	
8,100.00	8,045.71	8,112.82	8,036.08	29.11	28.61	-84.01	575.05	80.39	1,401.72	1,344.85	56.87	24.646	
8,150.00	8,094.58	8,152.37	8,063.55	29.27	28.71	-83.15	572.77	108.74	1,401.25	1,344.12	57.13	24.526	
8,200.00	8,142.35	8,190.66	8,088.22	29.42	28.82	-82.34	570.42	137.92	1,400.89	1,343.52	57.37	24.418	
8,250.00	8,188.66	8,227.87	8,110.27	29.57	28.92	-81.57	568.02	167.79	1,400.59	1,343.01	57.58	24.323	
8,300.00	8,233.15	8,264.16	8,129.85	29.71	29.02	-80.84	565.57	198.23	1,400.31	1,342.54	57.77	24.240	
8,350.00	8,275.49	8,300.00	8,147.72	29.84	29.12	-80.18	563.10	229.20	1,399.99	1,342.05	57.94	24.164	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,400.00	8,315.35	8,342.60	8,168.40	29.95	29.24	-79.52	560.23	266.33	1,399.43	1,341.30	58.13	24.074	
8,450.00	8,352.43	8,383.68	8,187.83	30.05	29.36	-79.03	557.55	302.43	1,398.52	1,340.21	58.31	23.984	
8,500.00	8,386.45	8,425.54	8,207.09	30.14	29.48	-78.69	554.90	339.51	1,397.16	1,338.66	58.50	23.883	
8,550.00	8,417.14	8,468.00	8,226.08	30.22	29.61	-78.52	552.30	377.39	1,395.27	1,336.57	58.70	23.770	
8,600.00	8,444.28	8,510.86	8,244.69	30.28	29.75	-78.52	549.76	415.92	1,392.80	1,333.89	58.91	23.643	
8,650.00	8,467.66	8,553.95	8,262.82	30.33	29.89	-78.71	547.29	454.93	1,389.72	1,330.58	59.14	23.499	
8,700.00	8,487.10	8,600.00	8,281.54	30.38	30.04	-79.09	544.75	496.92	1,386.03	1,326.63	59.40	23.334	
8,750.00	8,502.46	8,640.11	8,297.31	30.42	30.18	-79.65	542.63	533.73	1,381.76	1,322.11	59.65	23.164	
8,800.00	8,513.61	8,682.81	8,313.54	30.46	30.34	-80.39	540.45	573.17	1,376.98	1,317.05	59.93	22.975	
8,850.00	8,520.47	8,725.02	8,329.00	30.51	30.49	-81.30	538.38	612.39	1,371.76	1,311.53	60.23	22.774	
8,903.88	8,523.00	8,769.74	8,344.77	30.57	30.66	-82.45	536.29	654.19	1,365.78	1,305.21	60.57	22.548	
8,934.88	8,523.00	8,800.00	8,355.06	30.62	30.78	-82.88	534.93	682.61	1,362.52	1,301.72	60.80	22.411	
9,000.00	8,523.00	8,849.53	8,371.28	30.74	30.97	-83.55	532.80	729.36	1,356.47	1,295.26	61.21	22.162	
9,100.00	8,523.00	8,934.18	8,397.13	30.97	31.32	-84.63	529.45	809.90	1,348.38	1,286.47	61.91	21.779	
9,200.00	8,523.00	9,020.40	8,421.03	31.26	31.69	-85.63	526.40	892.68	1,341.62	1,278.96	62.66	21.412	
9,300.00	8,523.00	9,108.08	8,442.81	31.58	32.09	-86.55	523.69	977.57	1,336.03	1,272.58	63.44	21.059	
9,400.00	8,523.00	9,200.00	8,462.86	31.95	32.52	-87.41	521.27	1,067.23	1,331.48	1,267.19	64.29	20.711	
9,500.00	8,523.00	9,287.27	8,479.26	32.35	32.94	-88.11	519.38	1,152.93	1,327.84	1,262.69	65.15	20.382	
9,600.00	8,523.00	9,378.48	8,493.63	32.78	33.41	-88.73	517.81	1,242.97	1,325.00	1,258.94	66.06	20.056	
9,700.00	8,523.00	9,470.53	8,505.25	33.25	33.89	-89.23	516.67	1,334.28	1,322.86	1,255.84	67.03	19.737	
9,800.00	8,523.00	9,563.25	8,514.03	33.75	34.39	-89.61	515.97	1,426.58	1,321.34	1,253.31	68.03	19.423	
9,900.00	8,523.00	9,656.46	8,519.86	34.28	34.90	-89.86	515.71	1,519.60	1,320.37	1,251.29	69.07	19.116	
10,000.00	8,523.00	9,749.95	8,522.71	34.83	35.43	-89.99	515.90	1,613.04	1,319.91	1,249.75	70.16	18.814	
10,044.24	8,523.00	9,791.36	8,523.00	35.09	35.66	-90.00	516.13	1,654.45	1,319.86	1,249.21	70.65	18.682	
10,100.00	8,523.00	9,847.11	8,523.00	35.42	35.99	-90.00	516.50	1,710.20	1,319.86	1,248.56	71.30	18.511	
10,200.00	8,523.00	9,947.11	8,523.00	36.03	36.59	-90.00	517.16	1,810.20	1,319.86	1,247.34	72.52	18.201	
10,300.00	8,523.00	10,047.11	8,523.00	36.66	37.22	-90.00	517.83	1,910.19	1,319.86	1,246.08	73.78	17.890	
10,400.00	8,523.00	10,147.11	8,523.00	37.32	37.87	-90.00	518.49	2,010.19	1,319.86	1,244.78	75.08	17.578	
10,500.00	8,523.00	10,247.11	8,523.00	37.99	38.54	-90.00	519.15	2,110.19	1,319.86	1,243.43	76.44	17.268	
10,600.00	8,523.00	10,347.11	8,523.00	38.69	39.24	-90.00	519.82	2,210.19	1,319.86	1,242.04	77.83	16.959	
10,700.00	8,523.00	10,447.11	8,523.00	39.41	39.95	-90.00	520.48	2,310.19	1,319.86	1,240.61	79.26	16.653	
10,800.00	8,523.00	10,547.11	8,523.00	40.15	40.68	-90.00	521.15	2,410.18	1,319.86	1,239.14	80.73	16.350	
10,900.00	8,523.00	10,647.11	8,523.00	40.90	41.42	-90.00	521.81	2,510.18	1,319.87	1,237.64	82.23	16.051	
11,000.00	8,523.00	10,747.11	8,523.00	41.67	42.19	-90.00	522.47	2,610.18	1,319.87	1,236.10	83.77	15.757	
11,100.00	8,523.00	10,847.11	8,523.00	42.46	42.97	-90.00	523.14	2,710.18	1,319.87	1,234.53	85.33	15.467	
11,200.00	8,523.00	10,947.11	8,523.00	43.26	43.76	-90.00	523.80	2,810.17	1,319.87	1,232.94	86.93	15.183	
11,300.00	8,523.00	11,047.11	8,523.00	44.08	44.57	-90.00	524.47	2,910.17	1,319.87	1,231.31	88.56	14.904	
11,400.00	8,523.00	11,147.11	8,523.00	44.90	45.39	-90.00	525.13	3,010.17	1,319.87	1,229.66	90.21	14.631	
11,500.00	8,523.00	11,247.11	8,523.00	45.75	46.23	-90.00	525.79	3,110.17	1,319.87	1,227.98	91.89	14.364	
11,600.00	8,523.00	11,347.11	8,523.00	46.60	47.07	-90.00	526.46	3,210.17	1,319.87	1,226.28	93.59	14.103	
11,700.00	8,523.00	11,447.11	8,523.00	47.46	47.93	-90.00	527.12	3,310.16	1,319.87	1,224.56	95.31	13.848	
11,800.00	8,523.00	11,547.11	8,523.00	48.34	48.80	-90.00	527.79	3,410.16	1,319.87	1,222.82	97.05	13.599	
11,900.00	8,523.00	11,647.11	8,523.00	49.22	49.68	-90.00	528.45	3,510.16	1,319.87	1,221.05	98.82	13.356	
12,000.00	8,523.00	11,747.11	8,523.00	50.12	50.57	-90.00	529.11	3,610.16	1,319.87	1,219.27	100.60	13.120	
12,100.00	8,523.00	11,847.11	8,523.00	51.02	51.47	-90.00	529.78	3,710.16	1,319.88	1,217.47	102.41	12.889	
12,200.00	8,523.00	11,947.11	8,523.00	51.93	52.37	-90.00	530.44	3,810.15	1,319.88	1,215.65	104.22	12.664	
12,300.00	8,523.00	12,047.11	8,523.00	52.85	53.29	-90.00	531.11	3,910.15	1,319.88	1,213.82	106.06	12.445	
12,400.00	8,523.00	12,147.11	8,523.00	53.78	54.21	-90.00	531.77	4,010.15	1,319.88	1,211.97	107.91	12.231	
12,500.00	8,523.00	12,247.11	8,523.00	54.71	55.14	-90.00	532.43	4,110.15	1,319.88	1,210.10	109.78	12.023	
12,600.00	8,523.00	12,347.11	8,523.00	55.66	56.07	-90.00	533.10	4,210.14	1,319.88	1,208.22	111.66	11.821	
12,700.00	8,523.00	12,447.11	8,523.00	56.60	57.02	-90.00	533.76	4,310.14	1,319.88	1,206.33	113.55	11.624	
12,800.00	8,523.00	12,547.11	8,523.00	57.56	57.97	-90.00	534.42	4,410.14	1,319.88	1,204.43	115.45	11.432	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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
Rule Assigned:												Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,900.00	8,523.00	12,647.11	8,523.00	58.52	58.92	-90.00	535.09	4,510.14	1,319.88	1,202.51	117.37	11.245	
13,000.00	8,523.00	12,747.11	8,523.00	59.48	59.88	-90.00	535.75	4,610.14	1,319.88	1,200.58	119.30	11.064	
13,100.00	8,523.00	12,847.11	8,523.00	60.46	60.85	-90.00	536.42	4,710.13	1,319.88	1,198.64	121.24	10.887	
13,200.00	8,523.00	12,947.11	8,523.00	61.43	61.82	-90.00	537.08	4,810.13	1,319.88	1,196.70	123.19	10.714	
13,300.00	8,523.00	13,047.11	8,523.00	62.41	62.80	-90.00	537.74	4,910.13	1,319.88	1,194.74	125.15	10.547	
13,400.00	8,523.00	13,147.11	8,523.00	63.40	63.78	-90.00	538.41	5,010.13	1,319.89	1,192.77	127.12	10.383	
13,500.00	8,523.00	13,247.11	8,523.00	64.39	64.77	-90.00	539.07	5,110.12	1,319.89	1,190.79	129.10	10.224	
13,600.00	8,523.00	13,347.11	8,523.00	65.39	65.76	-90.00	539.74	5,210.12	1,319.89	1,188.80	131.08	10.069	
13,700.00	8,523.00	13,447.11	8,523.00	66.39	66.76	-90.00	540.40	5,310.12	1,319.89	1,186.81	133.08	9.918	
13,800.00	8,523.00	13,547.11	8,523.00	67.39	67.75	-90.00	541.06	5,410.12	1,319.89	1,184.81	135.08	9.771	
13,900.00	8,523.00	13,647.11	8,523.00	68.39	68.76	-90.00	541.73	5,510.12	1,319.89	1,182.80	137.09	9.628	
14,000.00	8,523.00	13,747.11	8,523.00	69.40	69.76	-90.00	542.39	5,610.11	1,319.89	1,180.78	139.11	9.488	
14,100.00	8,523.00	13,847.11	8,523.00	70.42	70.77	-90.00	543.06	5,710.11	1,319.89	1,178.76	141.13	9.352	
14,200.00	8,523.00	13,947.11	8,523.00	71.43	71.79	-90.00	543.72	5,810.11	1,319.89	1,176.73	143.16	9.220	
14,300.00	8,523.00	14,047.11	8,523.00	72.45	72.80	-90.00	544.38	5,910.11	1,319.89	1,174.69	145.20	9.090	
14,400.00	8,523.00	14,147.11	8,523.00	73.48	73.82	-90.00	545.05	6,010.10	1,319.89	1,172.65	147.24	8.964	
14,500.00	8,523.00	14,247.11	8,523.00	74.50	74.84	-90.00	545.71	6,110.10	1,319.89	1,170.60	149.29	8.841	
14,600.00	8,523.00	14,347.11	8,523.00	75.53	75.87	-90.00	546.38	6,210.10	1,319.90	1,168.55	151.35	8.721	
14,700.00	8,523.00	14,447.11	8,523.00	76.56	76.90	-90.00	547.04	6,310.10	1,319.90	1,166.49	153.40	8.604	
14,800.00	8,523.00	14,547.11	8,523.00	77.60	77.93	-90.00	547.70	6,410.10	1,319.90	1,164.43	155.47	8.490	
14,900.00	8,523.00	14,647.11	8,523.00	78.63	78.96	-90.00	548.37	6,510.09	1,319.90	1,162.36	157.54	8.378	
15,000.00	8,523.00	14,747.11	8,523.00	79.67	80.00	-90.00	549.03	6,610.09	1,319.90	1,160.29	159.61	8.269	
15,100.00	8,523.00	14,847.11	8,523.00	80.71	81.03	-90.00	549.69	6,710.09	1,319.90	1,158.21	161.69	8.163	
15,200.00	8,523.00	14,947.11	8,523.00	81.75	82.07	-90.00	550.36	6,810.09	1,319.90	1,156.12	163.78	8.059	
15,300.00	8,523.00	15,047.11	8,523.00	82.80	83.12	-90.00	551.02	6,910.08	1,319.90	1,154.04	165.86	7.958	
15,400.00	8,523.00	15,147.11	8,523.00	83.84	84.16	-90.00	551.69	7,010.08	1,319.90	1,151.95	167.95	7.859	
15,500.00	8,523.00	15,247.11	8,523.00	84.89	85.21	-90.00	552.35	7,110.08	1,319.90	1,149.85	170.05	7.762	
15,600.00	8,523.00	15,347.11	8,523.00	85.94	86.25	-90.00	553.01	7,210.08	1,319.90	1,147.75	172.15	7.667	
15,700.00	8,523.00	15,447.11	8,523.00	87.00	87.30	-90.00	553.68	7,310.08	1,319.90	1,145.65	174.25	7.575	
15,800.00	8,523.00	15,547.11	8,523.00	88.05	88.36	-90.00	554.34	7,410.07	1,319.90	1,143.55	176.36	7.484	
15,900.00	8,523.00	15,647.11	8,523.00	89.11	89.41	-90.00	555.01	7,510.07	1,319.91	1,141.44	178.47	7.396	
16,000.00	8,523.00	15,747.11	8,523.00	90.16	90.46	-90.00	555.67	7,610.07	1,319.91	1,139.33	180.58	7.309	
16,100.00	8,523.00	15,847.11	8,523.00	91.22	91.52	-90.00	556.33	7,710.07	1,319.91	1,137.21	182.70	7.225	
16,200.00	8,523.00	15,947.11	8,523.00	92.28	92.58	-90.00	557.00	7,810.06	1,319.91	1,135.09	184.81	7.142	
16,300.00	8,523.00	16,047.11	8,523.00	93.34	93.64	-90.00	557.66	7,910.06	1,319.91	1,132.97	186.94	7.061	
16,400.00	8,523.00	16,147.11	8,523.00	94.41	94.70	-90.00	558.33	8,010.06	1,319.91	1,130.85	189.06	6.981	
16,500.00	8,523.00	16,247.11	8,523.00	95.47	95.76	-90.00	558.99	8,110.06	1,319.91	1,128.72	191.19	6.904	
16,600.00	8,523.00	16,347.11	8,523.00	96.54	96.83	-90.00	559.65	8,210.06	1,319.91	1,126.59	193.32	6.828	
16,700.00	8,523.00	16,447.11	8,523.00	97.60	97.89	-90.00	560.32	8,310.05	1,319.91	1,124.46	195.45	6.753	
16,800.00	8,523.00	16,547.11	8,523.00	98.67	98.96	-90.00	560.98	8,410.05	1,319.91	1,122.33	197.59	6.680	
16,900.00	8,523.00	16,647.11	8,523.00	99.74	100.02	-90.00	561.65	8,510.05	1,319.91	1,120.19	199.72	6.609	
17,000.00	8,523.00	16,747.11	8,523.00	100.81	101.09	-90.00	562.31	8,610.05	1,319.91	1,118.05	201.86	6.539	
17,100.00	8,523.00	16,847.11	8,523.00	101.88	102.16	-90.00	562.97	8,710.05	1,319.92	1,115.91	204.01	6.470	
17,200.00	8,523.00	16,947.11	8,523.00	102.96	103.23	-90.00	563.64	8,810.04	1,319.92	1,113.77	206.15	6.403	
17,300.00	8,523.00	17,047.11	8,523.00	104.03	104.31	-90.00	564.30	8,910.04	1,319.92	1,111.62	208.30	6.337	
17,400.00	8,523.00	17,147.11	8,523.00	105.11	105.38	-90.00	564.96	9,010.04	1,319.92	1,109.47	210.44	6.272	
17,500.00	8,523.00	17,247.11	8,523.00	106.18	106.45	-90.00	565.63	9,110.04	1,319.92	1,107.32	212.59	6.209	
17,600.00	8,523.00	17,347.11	8,523.00	107.26	107.53	-90.00	566.29	9,210.03	1,319.92	1,105.17	214.75	6.146	
17,700.00	8,523.00	17,447.11	8,523.00	108.34	108.60	-90.00	566.96	9,310.03	1,319.92	1,103.02	216.90	6.085	
17,800.00	8,523.00	17,547.11	8,523.00	109.41	109.68	-90.00	567.62	9,410.03	1,319.92	1,100.86	219.06	6.025	
17,900.00	8,523.00	17,647.11	8,523.00	110.49	110.76	-90.00	568.28	9,510.03	1,319.92	1,098.71	221.21	5.967	
18,000.00	8,523.00	17,747.11	8,523.00	111.57	111.84	-90.00	568.95	9,610.03	1,319.92	1,096.55	223.37	5.909	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
18,100.00	8,523.00	17,847.11	8,523.00	112.66	112.92	-90.00	569.61	9,710.02	1,319.92	1,094.39	225.53	5.852	
18,200.00	8,523.00	17,947.11	8,523.00	113.74	114.00	-90.00	570.28	9,810.02	1,319.92	1,092.23	227.70	5.797	
18,300.00	8,523.00	18,047.11	8,523.00	114.82	115.08	-90.00	570.94	9,910.02	1,319.92	1,090.06	229.86	5.742	
18,400.00	8,523.00	18,147.11	8,523.00	115.90	116.16	-90.00	571.60	10,010.02	1,319.93	1,087.90	232.03	5.689	
18,500.00	8,523.00	18,247.11	8,523.00	116.99	117.24	-90.00	572.27	10,110.01	1,319.93	1,085.73	234.19	5.636	
18,600.00	8,523.00	18,347.11	8,523.00	118.07	118.33	-90.00	572.93	10,210.01	1,319.93	1,083.57	236.36	5.584	
18,700.00	8,523.00	18,447.11	8,523.00	119.16	119.41	-90.00	573.60	10,310.01	1,319.93	1,081.40	238.53	5.534	
18,800.00	8,523.00	18,547.11	8,523.00	120.24	120.50	-90.00	574.26	10,410.01	1,319.93	1,079.23	240.70	5.484	
18,900.00	8,523.00	18,647.11	8,523.00	121.33	121.58	-90.00	574.92	10,510.01	1,319.93	1,077.05	242.88	5.435	
19,000.00	8,523.00	18,747.11	8,523.00	122.42	122.67	-90.00	575.59	10,610.00	1,319.93	1,074.88	245.05	5.386	
19,100.00	8,523.00	18,847.11	8,523.00	123.51	123.75	-90.00	576.25	10,710.00	1,319.93	1,072.71	247.22	5.339	
19,200.00	8,523.00	18,947.11	8,523.00	124.59	124.84	-90.00	576.92	10,810.00	1,319.93	1,070.53	249.40	5.292	
19,235.87	8,523.00	18,982.98	8,523.00	124.99	125.23	-90.00	577.15	10,845.87	1,319.93	1,069.75	250.18	5.276	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	Offset	Semi Major Axis	Reference	Offset	Highside	Offset Wellbore Centre	Distance	Between	Between	Minimum	Separation	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	
300.00	300.00	300.00	300.00	0.84	0.84	89.77	0.12	30.00	30.00	28.32	1.68	17.806	
400.00	400.00	400.00	400.00	1.20	1.20	89.77	0.12	30.00	30.00	27.60	2.40	12.491	
500.00	500.00	500.00	500.00	1.56	1.56	89.77	0.12	30.00	30.00	26.88	3.12	9.619	
600.00	600.00	600.00	600.00	1.92	1.92	89.77	0.12	30.00	30.00	26.16	3.84	7.821	
700.00	700.00	700.00	700.00	2.28	2.28	89.77	0.12	30.00	30.00	25.45	4.55	6.590	
800.00	800.00	800.00	800.00	2.63	2.63	89.77	0.12	30.00	30.00	24.73	5.27	5.693	
900.00	900.00	900.00	900.00	2.99	2.99	89.77	0.12	30.00	30.00	24.01	5.99	5.011	
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	89.77	0.12	30.00	30.00	23.30	6.70	4.475	
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	89.77	0.12	30.00	30.00	22.58	7.42	4.043	
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	89.77	0.12	30.00	30.00	21.86	8.14	3.687	
1,218.71	1,218.71	1,218.72	1,218.72	4.13	4.14	-93.89	0.17	30.00	30.00	21.73	8.27	3.628	CC
1,300.00	1,299.99	1,299.99	1,299.98	4.41	4.43	-98.69	1.42	29.90	30.11	21.27	8.84	3.407	ES
1,400.00	1,399.91	1,399.57	1,399.48	4.74	4.78	-112.82	5.32	29.61	31.73	22.22	9.52	3.335	SF
1,500.00	1,499.69	1,498.34	1,498.03	5.07	5.14	-131.45	11.73	29.13	38.01	27.82	10.20	3.728	
1,600.00	1,599.27	1,595.91	1,595.20	5.40	5.49	-147.42	20.56	28.47	51.17	40.31	10.86	4.711	
1,700.00	1,698.57	1,691.92	1,690.56	5.74	5.83	-158.26	31.66	27.63	71.23	59.71	11.52	6.185	
1,713.40	1,711.86	1,704.65	1,703.18	5.79	5.88	-159.38	33.31	27.51	74.40	62.80	11.60	6.411	
1,800.00	1,797.67	1,786.95	1,784.66	6.08	6.17	-165.13	44.90	26.64	96.40	84.24	12.16	7.927	
1,900.00	1,896.77	1,883.05	1,879.74	6.42	6.51	-169.31	58.86	25.60	122.94	110.12	12.83	9.584	
2,000.00	1,995.87	1,979.16	1,974.82	6.77	6.85	-172.00	72.82	24.55	149.88	136.38	13.50	11.103	
2,100.00	2,094.97	2,075.27	2,069.90	7.12	7.19	-173.87	86.78	23.50	177.04	162.86	14.17	12.491	
2,200.00	2,194.07	2,171.37	2,164.98	7.48	7.54	-175.25	100.74	22.45	204.32	189.47	14.85	13.760	
2,300.00	2,293.16	2,267.48	2,260.06	7.83	7.89	-176.29	114.70	21.41	231.68	216.15	15.53	14.921	
2,400.00	2,392.26	2,363.59	2,355.14	8.19	8.23	-177.12	128.67	20.36	259.10	242.89	16.21	15.987	
2,500.00	2,491.36	2,459.69	2,450.23	8.55	8.58	-177.79	142.63	19.31	286.56	269.68	16.89	16.969	
2,600.00	2,590.46	2,555.80	2,545.31	8.91	8.93	-178.35	156.59	18.27	314.05	296.48	17.57	17.875	
2,700.00	2,689.56	2,651.91	2,640.39	9.27	9.28	-178.81	170.55	17.22	341.57	323.31	18.25	18.713	
2,800.00	2,788.66	2,748.01	2,735.47	9.63	9.62	-179.20	184.51	16.17	369.10	350.16	18.94	19.490	
2,900.00	2,887.75	2,844.12	2,830.55	10.00	9.97	-179.54	198.47	15.12	396.65	377.02	19.62	20.214	
3,000.00	2,986.85	2,940.23	2,925.63	10.36	10.32	-179.84	212.44	14.08	424.20	403.89	20.31	20.888	
3,100.00	3,085.95	3,036.33	3,020.71	10.72	10.67	-179.90	226.40	13.03	451.77	430.77	21.00	21.517	
3,200.00	3,185.05	3,132.44	3,115.79	11.09	11.02	-179.67	240.36	11.98	479.34	457.66	21.68	22.107	
3,300.00	3,284.15	3,228.55	3,210.88	11.46	11.37	-179.47	254.32	10.94	506.92	484.55	22.37	22.660	
3,400.00	3,383.24	3,324.65	3,305.96	11.82	11.72	-179.28	268.28	9.89	534.51	511.45	23.06	23.179	
3,500.00	3,482.34	3,420.76	3,401.04	12.19	12.07	-179.12	282.24	8.84	562.10	538.35	23.75	23.668	
3,600.00	3,581.44	3,516.87	3,496.12	12.56	12.42	-178.97	296.21	7.80	589.69	565.25	24.44	24.130	
3,700.00	3,680.54	3,612.97	3,591.20	12.93	12.77	-178.83	310.17	6.75	617.29	592.16	25.13	24.565	
3,800.00	3,779.64	3,709.08	3,686.28	13.30	13.12	-178.71	324.13	5.70	644.89	619.07	25.82	24.977	
11,600.00	8,523.00	10,100.61	7,328.00	46.60	43.87	-47.84	526.50	3,210.17	1,780.50	1,708.52	71.98	24.736	
11,700.00	8,523.00	10,200.61	7,328.00	47.46	44.77	-47.84	527.17	3,310.17	1,780.50	1,707.12	73.38	24.264	
11,800.00	8,523.00	10,300.61	7,328.00	48.34	45.68	-47.84	527.83	3,410.17	1,780.50	1,705.71	74.80	23.805	
11,900.00	8,523.00	10,400.61	7,328.00	49.22	46.60	-47.84	528.49	3,510.17	1,780.50	1,704.28	76.23	23.358	
12,000.00	8,523.00	10,500.61	7,328.00	50.12	47.53	-47.84	529.16	3,610.16	1,780.50	1,702.83	77.67	22.923	
12,100.00	8,523.00	10,600.61	7,328.00	51.02	48.47	-47.84	529.82	3,710.16	1,780.50	1,701.37	79.13	22.500	
12,200.00	8,523.00	10,700.61	7,328.00	51.93	49.42	-47.84	530.48	3,810.16	1,780.51	1,699.90	80.61	22.089	
12,300.00	8,523.00	10,800.61	7,328.00	52.85	50.37	-47.84	531.15	3,910.16	1,780.51	1,698.41	82.09	21.689	
12,400.00	8,523.00	10,900.61	7,328.00	53.78	51.33	-47.84	531.81	4,010.16	1,780.51	1,696.92	83.59	21.301	
12,500.00	8,523.00	11,000.61	7,328.00	54.71	52.29	-47.84	532.47	4,110.15	1,780.51	1,695.41	85.10	20.923	
12,600.00	8,523.00	11,100.61	7,328.00	55.66	53.27	-47.84	533.14	4,210.15	1,780.51	1,693.89	86.61	20.557	
12,700.00	8,523.00	11,200.61	7,328.00	56.60	54.24	-47.84	533.80	4,310.15	1,780.51	1,692.36	88.14	20.200	
12,800.00	8,523.00	11,300.61	7,328.00	57.56	55.23	-47.84	534.46	4,410.15	1,780.51	1,690.83	89.68	19.854	
12,900.00	8,523.00	11,400.61	7,328.00	58.52	56.22	-47.84	535.13	4,510.14	1,780.51	1,689.28	91.23	19.517	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			Minimum Separation (usft)	
13,000.00	8,523.00	11,500.61	7,328.00	59.48	57.21	-47.84	535.79	4,610.14	1,780.51	1,687.72	92.78	19.190		
13,100.00	8,523.00	11,600.61	7,328.00	60.46	58.21	-47.84	536.45	4,710.14	1,780.51	1,686.16	94.35	18.872		
13,200.00	8,523.00	11,700.61	7,328.00	61.43	59.21	-47.84	537.12	4,810.14	1,780.51	1,684.59	95.92	18.563		
13,300.00	8,523.00	11,800.61	7,328.00	62.41	60.22	-47.84	537.78	4,910.14	1,780.51	1,683.01	97.50	18.262		
13,400.00	8,523.00	11,900.61	7,328.00	63.40	61.23	-47.84	538.44	5,010.13	1,780.51	1,681.43	99.08	17.970		
13,500.00	8,523.00	12,000.61	7,328.00	64.39	62.24	-47.84	539.11	5,110.13	1,780.51	1,679.83	100.67	17.686		
13,600.00	8,523.00	12,100.61	7,328.00	65.39	63.26	-47.84	539.77	5,210.13	1,780.51	1,678.23	102.27	17.409		
13,700.00	8,523.00	12,200.61	7,328.00	66.39	64.28	-47.84	540.43	5,310.13	1,780.51	1,676.63	103.88	17.140		
13,800.00	8,523.00	12,300.61	7,328.00	67.39	65.31	-47.84	541.10	5,410.12	1,780.51	1,675.02	105.49	16.879		
13,900.00	8,523.00	12,400.61	7,328.00	68.39	66.33	-47.84	541.76	5,510.12	1,780.51	1,673.40	107.10	16.624		
14,000.00	8,523.00	12,500.61	7,328.00	69.40	67.37	-47.84	542.42	5,610.12	1,780.51	1,671.78	108.73	16.376		
14,100.00	8,523.00	12,600.61	7,328.00	70.42	68.40	-47.84	543.09	5,710.12	1,780.51	1,670.16	110.35	16.135		
14,200.00	8,523.00	12,700.61	7,328.00	71.43	69.44	-47.84	543.75	5,810.12	1,780.51	1,668.53	111.98	15.900		
14,300.00	8,523.00	12,800.61	7,328.00	72.45	70.48	-47.84	544.41	5,910.11	1,780.51	1,666.89	113.62	15.671		
14,400.00	8,523.00	12,900.61	7,328.00	73.48	71.52	-47.84	545.08	6,010.11	1,780.51	1,665.25	115.26	15.448		
14,500.00	8,523.00	13,000.61	7,328.00	74.50	72.56	-47.84	545.74	6,110.11	1,780.51	1,663.61	116.90	15.231		
14,600.00	8,523.00	13,100.61	7,328.00	75.53	73.61	-47.84	546.40	6,210.11	1,780.51	1,661.96	118.55	15.019		
14,700.00	8,523.00	13,200.61	7,328.00	76.56	74.66	-47.84	547.07	6,310.11	1,780.51	1,660.31	120.20	14.812		
14,800.00	8,523.00	13,300.61	7,328.00	77.60	75.71	-47.84	547.73	6,410.10	1,780.51	1,658.65	121.86	14.611		
14,900.00	8,523.00	13,400.61	7,328.00	78.63	76.76	-47.84	548.39	6,510.10	1,780.51	1,656.99	123.52	14.415		
15,000.00	8,523.00	13,500.61	7,328.00	79.67	77.81	-47.84	549.06	6,610.10	1,780.51	1,655.33	125.18	14.223		
15,100.00	8,523.00	13,600.61	7,328.00	80.71	78.87	-47.84	549.72	6,710.10	1,780.51	1,653.66	126.85	14.036		
15,200.00	8,523.00	13,700.61	7,328.00	81.75	79.93	-47.84	550.38	6,810.09	1,780.51	1,651.99	128.52	13.854		
15,300.00	8,523.00	13,800.61	7,328.00	82.80	80.99	-47.84	551.05	6,910.09	1,780.51	1,650.32	130.19	13.676		
15,400.00	8,523.00	13,900.61	7,328.00	83.84	82.05	-47.84	551.71	7,010.09	1,780.51	1,648.64	131.87	13.502		
15,500.00	8,523.00	14,000.61	7,328.00	84.89	83.11	-47.84	552.37	7,110.09	1,780.51	1,646.97	133.55	13.333		
15,600.00	8,523.00	14,100.61	7,328.00	85.94	84.18	-47.84	553.04	7,210.09	1,780.51	1,645.28	135.23	13.167		
15,700.00	8,523.00	14,200.61	7,328.00	87.00	85.25	-47.84	553.70	7,310.08	1,780.51	1,643.60	136.91	13.005		
15,800.00	8,523.00	14,300.61	7,328.00	88.05	86.31	-47.84	554.36	7,410.08	1,780.51	1,641.91	138.60	12.847		
15,900.00	8,523.00	14,400.61	7,328.00	89.11	87.38	-47.84	555.03	7,510.08	1,780.51	1,640.23	140.29	12.692		
16,000.00	8,523.00	14,500.61	7,328.00	90.16	88.45	-47.84	555.69	7,610.08	1,780.51	1,638.54	141.98	12.541		
16,100.00	8,523.00	14,600.61	7,328.00	91.22	89.52	-47.84	556.35	7,710.07	1,780.51	1,636.84	143.67	12.393		
16,200.00	8,523.00	14,700.61	7,328.00	92.28	90.60	-47.84	557.02	7,810.07	1,780.51	1,635.15	145.37	12.248		
16,300.00	8,523.00	14,800.61	7,328.00	93.34	91.67	-47.84	557.68	7,910.07	1,780.51	1,633.45	147.06	12.107		
16,400.00	8,523.00	14,900.61	7,328.00	94.41	92.75	-47.84	558.34	8,010.07	1,780.51	1,631.75	148.76	11.969		
16,500.00	8,523.00	15,000.61	7,328.00	95.47	93.82	-47.84	559.01	8,110.07	1,780.51	1,630.05	150.46	11.833		
16,600.00	8,523.00	15,100.61	7,328.00	96.54	94.90	-47.84	559.67	8,210.06	1,780.51	1,628.35	152.17	11.701		
16,700.00	8,523.00	15,200.61	7,328.00	97.60	95.98	-47.84	560.33	8,310.06	1,780.51	1,626.64	153.87	11.571		
16,800.00	8,523.00	15,300.61	7,328.00	98.67	97.06	-47.84	561.00	8,410.06	1,780.51	1,624.93	155.58	11.444		
16,900.00	8,523.00	15,400.61	7,328.00	99.74	98.14	-47.84	561.66	8,510.06	1,780.51	1,623.22	157.29	11.320		
17,000.00	8,523.00	15,500.61	7,328.00	100.81	99.22	-47.84	562.32	8,610.05	1,780.51	1,621.51	159.00	11.198		
17,100.00	8,523.00	15,600.61	7,328.00	101.88	100.30	-47.84	562.99	8,710.05	1,780.51	1,619.80	160.71	11.079		
17,200.00	8,523.00	15,700.61	7,328.00	102.96	101.38	-47.84	563.65	8,810.05	1,780.51	1,618.09	162.43	10.962		
17,300.00	8,523.00	15,800.61	7,328.00	104.03	102.47	-47.84	564.31	8,910.05	1,780.51	1,616.37	164.14	10.847		
17,400.00	8,523.00	15,900.61	7,328.00	105.11	103.55	-47.84	564.98	9,010.05	1,780.52	1,614.66	165.86	10.735		
17,500.00	8,523.00	16,000.61	7,328.00	106.18	104.64	-47.84	565.64	9,110.04	1,780.52	1,612.94	167.58	10.625		
17,600.00	8,523.00	16,100.61	7,328.00	107.26	105.72	-47.84	566.30	9,210.04	1,780.52	1,611.22	169.30	10.517		
17,700.00	8,523.00	16,200.61	7,328.00	108.34	106.81	-47.84	566.97	9,310.04	1,780.52	1,609.50	171.02	10.411		
17,800.00	8,523.00	16,300.61	7,328.00	109.41	107.90	-47.84	567.63	9,410.04	1,780.52	1,607.78	172.74	10.308		
17,900.00	8,523.00	16,400.61	7,328.00	110.49	108.99	-47.84	568.29	9,510.03	1,780.52	1,606.05	174.46	10.206		
18,000.00	8,523.00	16,500.61	7,328.00	111.57	110.08	-47.84	568.96	9,610.03	1,780.52	1,604.33	176.19	10.106		
18,100.00	8,523.00	16,600.61	7,328.00	112.66	111.17	-47.84	569.62	9,710.03	1,780.52	1,602.60	177.91	10.008		

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
18,200.00	8,523.00	16,700.61	7,328.00	113.74	112.26	-47.84	570.28	9,810.03	1,780.52	1,600.88	179.64	9.912	
18,300.00	8,523.00	16,800.61	7,328.00	114.82	113.35	-47.84	570.95	9,910.03	1,780.52	1,599.15	181.37	9.817	
18,400.00	8,523.00	16,900.61	7,328.00	115.90	114.44	-47.84	571.61	10,010.02	1,780.52	1,597.42	183.10	9.724	
18,500.00	8,523.00	17,000.61	7,328.00	116.99	115.53	-47.84	572.27	10,110.02	1,780.52	1,595.69	184.83	9.633	
18,600.00	8,523.00	17,100.61	7,328.00	118.07	116.62	-47.84	572.94	10,210.02	1,780.52	1,593.96	186.56	9.544	
18,700.00	8,523.00	17,200.61	7,328.00	119.16	117.72	-47.84	573.60	10,310.02	1,780.52	1,592.23	188.29	9.456	
18,800.00	8,523.00	17,300.61	7,328.00	120.24	118.81	-47.84	574.26	10,410.01	1,780.52	1,590.49	190.02	9.370	
18,900.00	8,523.00	17,400.61	7,328.00	121.33	119.90	-47.84	574.93	10,510.01	1,780.52	1,588.76	191.76	9.285	
19,000.00	8,523.00	17,500.61	7,328.00	122.42	121.00	-47.84	575.59	10,610.01	1,780.52	1,587.03	193.49	9.202	
19,100.00	8,523.00	17,600.61	7,328.00	123.51	122.09	-47.84	576.25	10,710.01	1,780.52	1,585.29	195.23	9.120	
19,200.00	8,523.00	17,700.61	7,328.00	124.59	123.19	-47.84	576.92	10,810.01	1,780.52	1,583.55	196.97	9.040	
19,235.87	8,523.00	17,736.48	7,328.00	124.99	123.58	-47.84	577.15	10,845.87	1,780.52	1,582.93	197.59	9.011	



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
400.00	400.00	400.00	400.00	1.20	1.20	89.77	0.24	60.01	60.01	57.61	2.40	24.986	
500.00	500.00	500.00	500.00	1.56	1.56	89.77	0.24	60.01	60.01	56.89	3.12	19.242	
600.00	600.00	600.00	600.00	1.92	1.92	89.77	0.24	60.01	60.01	56.17	3.84	15.645	
700.00	700.00	700.00	700.00	2.28	2.28	89.77	0.24	60.01	60.01	55.46	4.55	13.182	
800.00	800.00	800.00	800.00	2.63	2.63	89.77	0.24	60.01	60.01	54.74	5.27	11.388	
900.00	900.00	900.00	900.00	2.99	2.99	89.77	0.24	60.01	60.01	54.02	5.99	10.024	
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	89.77	0.24	60.01	60.01	53.31	6.70	8.952	
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	89.77	0.24	60.01	60.01	52.59	7.42	8.087	
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	89.77	0.24	60.01	60.01	51.87	8.14	7.375	
1,300.00	1,299.99	1,300.10	1,300.09	4.41	4.41	-93.71	-1.07	59.93	60.01	51.19	8.82	6.805	
1,400.00	1,399.91	1,400.21	1,400.11	4.74	4.74	-93.71	-5.00	59.69	60.01	50.54	9.47	6.337	
1,500.00	1,499.69	1,500.31	1,500.00	5.07	5.07	-93.70	-11.54	59.29	60.00	49.87	10.13	5.923	
1,600.00	1,599.27	1,600.41	1,599.68	5.40	5.40	-93.69	-20.69	58.72	60.00	49.20	10.80	5.557	
1,700.00	1,698.57	1,700.51	1,699.08	5.74	5.74	-93.68	-32.44	58.00	59.99	48.52	11.47	5.229	
1,713.40	1,711.86	1,713.93	1,712.38	5.79	5.79	-93.68	-34.22	57.89	59.99	48.42	11.56	5.187	
1,800.00	1,797.67	1,800.60	1,798.13	6.08	6.08	-92.73	-46.79	57.12	59.92	47.77	12.16	4.929	
1,894.20	1,891.02	1,894.77	1,891.00	6.40	6.40	-89.83	-62.38	56.16	59.85	47.04	12.81	4.673 CC	
1,900.00	1,896.77	1,900.57	1,896.71	6.42	6.42	-89.63	-63.36	56.10	59.85	47.00	12.85	4.658	
2,000.00	1,995.87	2,000.51	1,995.21	6.77	6.77	-86.25	-80.22	55.06	59.96	46.42	13.54	4.427	
2,100.00	2,094.97	2,100.45	2,093.71	7.12	7.13	-82.89	-97.08	54.03	60.29	46.04	14.25	4.232	
2,200.00	2,194.07	2,200.39	2,192.21	7.48	7.48	-79.57	-113.94	52.99	60.82	45.86	14.95	4.067 ES	
2,300.00	2,293.16	2,300.32	2,290.71	7.83	7.84	-76.33	-130.81	51.95	61.55	45.89	15.66	3.930	
2,400.00	2,392.26	2,400.26	2,389.21	8.19	8.20	-73.17	-147.67	50.91	62.47	46.10	16.37	3.815	
2,500.00	2,491.36	2,500.20	2,487.71	8.55	8.57	-70.11	-164.53	49.88	63.58	46.49	17.09	3.721	
2,600.00	2,590.46	2,600.13	2,586.21	8.91	8.93	-67.16	-181.39	48.84	64.86	47.06	17.80	3.644	
2,700.00	2,689.56	2,700.07	2,684.71	9.27	9.30	-64.33	-198.25	47.80	66.31	47.80	18.51	3.582	
2,800.00	2,788.66	2,800.01	2,783.21	9.63	9.66	-61.64	-215.11	46.77	67.91	48.68	19.23	3.532	
2,900.00	2,887.75	2,899.95	2,881.70	10.00	10.03	-59.07	-231.97	45.73	69.66	49.72	19.94	3.493	
3,000.00	2,986.85	2,999.88	2,980.20	10.36	10.40	-56.63	-248.84	44.69	71.53	50.88	20.65	3.464	
3,100.00	3,085.95	3,099.82	3,078.70	10.72	10.77	-54.32	-265.70	43.66	73.54	52.17	21.36	3.442	
3,200.00	3,185.05	3,199.76	3,177.20	11.09	11.15	-52.13	-282.56	42.62	75.65	53.57	22.08	3.427	
3,300.00	3,284.15	3,299.69	3,275.70	11.46	11.52	-50.07	-299.42	41.58	77.87	55.08	22.79	3.417	
3,400.00	3,383.24	3,399.63	3,374.20	11.82	11.89	-48.12	-316.28	40.55	80.18	56.68	23.50	3.411	
3,500.00	3,482.34	3,499.57	3,472.70	12.19	12.27	-46.29	-333.14	39.51	82.58	58.37	24.21	3.412	
3,600.00	3,581.44	3,599.51	3,571.20	12.56	12.64	-44.56	-350.00	38.47	85.06	60.14	24.92	3.413	
3,700.00	3,680.54	3,699.44	3,669.70	12.93	13.02	-42.93	-366.87	37.43	87.62	61.98	25.64	3.418	
3,800.00	3,779.64	3,799.38	3,768.20	13.30	13.39	-41.39	-383.73	36.40	90.24	63.89	26.35	3.425	
3,900.00	3,878.73	3,899.32	3,866.69	13.67	13.77	-39.94	-400.59	35.36	92.92	65.86	27.06	3.434	
4,000.00	3,977.83	3,999.26	3,965.19	14.03	14.14	-38.57	-417.45	34.32	95.66	67.89	27.77	3.445	
4,100.00	4,076.93	4,099.19	4,063.69	14.40	14.52	-37.28	-434.31	33.29	98.45	69.97	28.48	3.457	
4,200.00	4,176.03	4,199.13	4,162.19	14.77	14.90	-36.07	-451.17	32.25	101.28	72.09	29.19	3.470	
4,300.00	4,275.13	4,299.07	4,260.69	15.14	15.27	-34.91	-468.03	31.21	104.16	74.26	29.90	3.483	
4,400.00	4,374.22	4,399.00	4,359.19	15.52	15.65	-33.82	-484.90	30.18	107.08	76.47	30.62	3.498	
4,500.00	4,473.32	4,498.94	4,457.69	15.89	16.03	-32.79	-501.76	29.14	110.04	78.71	31.33	3.512	
4,600.00	4,572.42	4,598.88	4,556.19	16.26	16.41	-31.81	-518.62	28.10	113.03	80.99	32.04	3.528	
4,700.00	4,671.52	4,698.82	4,654.69	16.63	16.79	-30.89	-535.48	27.07	116.05	83.30	32.75	3.543	
4,800.00	4,770.62	4,798.75	4,753.19	17.00	17.16	-30.01	-552.34	26.03	119.10	85.64	33.47	3.559	
4,900.00	4,869.71	4,898.69	4,851.68	17.37	17.54	-29.17	-569.20	24.99	122.18	88.00	34.18	3.574	
5,000.00	4,968.81	4,998.63	4,950.18	17.74	17.92	-28.38	-586.06	23.95	125.28	90.39	34.89	3.590	
5,100.00	5,067.91	5,098.56	5,048.68	18.11	18.30	-27.62	-602.93	22.92	128.41	92.80	35.61	3.606	
5,200.00	5,167.01	5,198.50	5,147.18	18.49	18.68	-26.90	-619.79	21.88	131.55	95.23	36.32	3.622	
5,300.00	5,266.11	5,298.44	5,245.68	18.86	19.06	-26.22	-636.65	20.84	134.72	97.68	37.04	3.637	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,400.00	5,365.21	5,398.38	5,344.18	19.23	19.44	-25.56	-653.51	19.81	137.90	100.15	37.75	3.653	
5,500.00	5,464.30	5,498.31	5,442.68	19.60	19.82	-24.94	-670.37	18.77	141.10	102.64	38.47	3.668	
5,600.00	5,563.40	5,598.25	5,541.18	19.98	20.20	-24.34	-687.23	17.73	144.32	105.14	39.18	3.683	
5,700.00	5,662.50	5,698.19	5,639.68	20.35	20.58	-23.77	-704.09	16.70	147.55	107.66	39.90	3.698	
5,800.00	5,761.60	5,798.12	5,738.18	20.72	20.96	-23.22	-720.96	15.66	150.80	110.19	40.61	3.713	
5,900.00	5,860.70	5,898.06	5,836.68	21.09	21.34	-22.70	-737.82	14.62	154.06	112.73	41.33	3.728	
6,000.00	5,959.79	5,998.00	5,935.17	21.47	21.72	-22.20	-754.68	13.59	157.33	115.28	42.04	3.742	
6,100.00	6,058.89	6,101.20	6,037.03	21.84	22.11	-21.83	-771.18	12.57	159.79	116.99	42.80	3.733	
6,200.00	6,157.99	6,205.24	6,140.14	22.21	22.50	-21.82	-785.09	11.72	159.78	116.23	43.55	3.669	
6,300.00	6,257.09	6,309.20	6,243.50	22.58	22.89	-22.21	-796.18	11.03	157.24	112.96	44.29	3.551	
6,400.00	6,356.19	6,412.94	6,346.90	22.96	23.26	-23.01	-804.44	10.53	152.21	107.21	45.00	3.382	
6,500.00	6,455.28	6,516.29	6,450.11	23.33	23.63	-24.32	-809.88	10.19	144.73	99.03	45.70	3.167	
6,600.00	6,554.38	6,619.11	6,552.89	23.70	23.99	-26.28	-812.53	10.03	134.92	88.53	46.39	2.908	
6,700.00	6,653.48	6,719.70	6,653.48	24.08	24.31	-29.01	-812.82	10.01	123.27	76.16	47.11	2.617	
6,800.00	6,752.58	6,818.80	6,752.58	24.45	24.63	-32.34	-812.82	10.01	111.72	63.83	47.88	2.333	
6,900.00	6,851.68	6,908.88	6,842.32	24.82	24.92	-39.08	-812.80	16.70	104.78	55.89	48.89	2.143	
6,911.12	6,862.70	6,918.67	6,851.98	24.87	24.95	-40.23	-812.79	18.27	104.70	55.71	48.98	2.137 SF	
7,000.00	6,950.77	6,994.41	6,925.57	25.20	25.19	-51.05	-812.73	35.97	110.85	61.52	49.32	2.247	
7,100.00	7,049.87	7,072.50	6,998.31	25.57	25.42	-63.17	-812.63	64.22	134.65	86.31	48.34	2.786	
7,200.00	7,148.97	7,141.61	7,058.95	25.95	25.61	-72.15	-812.52	97.25	175.51	129.20	46.31	3.790	
7,300.00	7,248.07	7,200.00	7,106.79	26.32	25.75	-77.88	-812.40	130.70	229.53	185.65	43.88	5.231	
7,340.44	7,288.14	7,223.28	7,124.88	26.47	25.80	-79.72	-812.35	145.36	254.26	211.11	43.15	5.892	
7,400.00	7,347.23	7,250.00	7,144.87	26.69	25.86	-82.27	-812.29	163.07	293.20	251.55	41.65	7.040	
7,500.00	7,446.67	7,300.00	7,179.99	27.06	25.96	-86.14	-812.16	198.65	364.00	323.72	40.29	9.036	
7,600.00	7,546.35	7,334.92	7,202.61	27.42	26.01	-88.91	-812.07	225.25	440.04	401.58	38.47	11.440	
7,700.00	7,646.20	7,367.48	7,222.20	27.78	26.06	-91.44	-811.98	251.24	520.05	482.93	37.12	14.010	
7,800.00	7,746.16	7,400.00	7,240.27	28.14	26.11	-93.84	-811.88	278.28	603.13	566.91	36.22	16.652	
7,853.84	7,800.00	7,400.00	7,240.27	28.32	26.11	88.33	-811.88	278.28	648.97	613.92	35.04	18.519	
7,900.00	7,846.16	7,420.06	7,250.64	28.46	26.13	88.41	-811.82	295.45	688.53	653.47	35.06	19.638	
8,003.88	7,950.04	7,450.00	7,264.98	28.79	26.17	88.51	-811.73	321.73	779.48	744.92	34.56	22.554	
8,050.00	7,996.11	7,450.00	7,264.98	28.94	26.17	-0.43	-811.73	321.73	819.42	785.57	33.86	24.204	
12,800.00	8,523.00	11,557.28	7,328.00	57.56	54.88	0.00	-785.41	4,418.90	1,195.00	1,146.57	48.43	24.673	
12,900.00	8,523.00	11,657.28	7,328.00	58.52	55.87	0.00	-784.75	4,518.90	1,195.00	1,145.81	49.19	24.292	
13,000.00	8,523.00	11,757.28	7,328.00	59.48	56.87	0.00	-784.08	4,618.90	1,195.00	1,145.04	49.96	23.920	
13,100.00	8,523.00	11,857.28	7,328.00	60.46	57.87	0.00	-783.42	4,718.90	1,195.00	1,144.27	50.73	23.557	
13,200.00	8,523.00	11,957.28	7,328.00	61.43	58.88	0.00	-782.76	4,818.89	1,195.00	1,143.50	51.50	23.203	
13,300.00	8,523.00	12,057.28	7,328.00	62.41	59.89	0.00	-782.09	4,918.89	1,195.00	1,142.72	52.28	22.858	
13,400.00	8,523.00	12,157.28	7,328.00	63.40	60.90	0.00	-781.43	5,018.89	1,195.00	1,141.94	53.06	22.520	
13,500.00	8,523.00	12,257.28	7,328.00	64.39	61.92	0.00	-780.77	5,118.89	1,195.00	1,141.15	53.85	22.192	
13,600.00	8,523.00	12,357.28	7,328.00	65.39	62.94	0.00	-780.11	5,218.89	1,195.00	1,140.36	54.64	21.871	
13,700.00	8,523.00	12,457.28	7,328.00	66.39	63.97	0.00	-779.44	5,318.88	1,195.00	1,139.57	55.43	21.558	
13,800.00	8,523.00	12,557.28	7,328.00	67.39	65.00	0.00	-778.78	5,418.88	1,195.00	1,138.77	56.23	21.252	
13,900.00	8,523.00	12,657.28	7,328.00	68.39	66.03	0.00	-778.12	5,518.88	1,195.00	1,137.97	57.03	20.954	
14,000.00	8,523.00	12,757.28	7,328.00	69.40	67.06	0.00	-777.45	5,618.88	1,195.00	1,137.17	57.83	20.662	
14,100.00	8,523.00	12,857.28	7,328.00	70.42	68.10	0.00	-776.79	5,718.87	1,195.00	1,136.36	58.64	20.378	
14,200.00	8,523.00	12,957.28	7,328.00	71.43	69.14	0.00	-776.13	5,818.87	1,195.00	1,135.55	59.45	20.101	
14,300.00	8,523.00	13,057.28	7,328.00	72.45	70.18	0.00	-775.47	5,918.87	1,195.00	1,134.74	60.26	19.830	
14,400.00	8,523.00	13,157.28	7,328.00	73.48	71.23	0.00	-774.80	6,018.87	1,195.00	1,133.92	61.08	19.565	
14,500.00	8,523.00	13,257.28	7,328.00	74.50	72.28	0.00	-774.14	6,118.87	1,195.00	1,133.10	61.90	19.306	
14,600.00	8,523.00	13,357.28	7,328.00	75.53	73.33	0.00	-773.48	6,218.86	1,195.00	1,132.28	62.72	19.054	
14,700.00	8,523.00	13,457.28	7,328.00	76.56	74.38	0.00	-772.81	6,318.86	1,195.00	1,131.46	63.54	18.807	
14,800.00	8,523.00	13,557.28	7,328.00	77.60	75.43	0.00	-772.15	6,418.86	1,195.00	1,130.64	64.36	18.566	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,900.00	8,523.00	13,657.28	7,328.00	78.63	76.49	0.00	-771.49	6,518.86	1,195.00	1,129.81	65.19	18.330	
15,000.00	8,523.00	13,757.28	7,328.00	79.67	77.54	0.00	-770.83	6,618.85	1,195.00	1,128.98	66.02	18.100	
15,100.00	8,523.00	13,857.28	7,328.00	80.71	78.60	0.00	-770.16	6,718.85	1,195.00	1,128.15	66.85	17.875	
15,200.00	8,523.00	13,957.28	7,328.00	81.75	79.66	0.00	-769.50	6,818.85	1,195.00	1,127.31	67.69	17.655	
15,300.00	8,523.00	14,057.28	7,328.00	82.80	80.73	0.00	-768.84	6,918.85	1,195.00	1,126.48	68.52	17.440	
15,400.00	8,523.00	14,157.28	7,328.00	83.84	81.79	0.00	-768.17	7,018.85	1,195.00	1,125.64	69.36	17.229	
15,500.00	8,523.00	14,257.28	7,328.00	84.89	82.85	0.00	-767.51	7,118.84	1,195.00	1,124.80	70.20	17.023	
15,600.00	8,523.00	14,357.28	7,328.00	85.94	83.92	0.00	-766.85	7,218.84	1,195.00	1,123.96	71.04	16.822	
15,700.00	8,523.00	14,457.28	7,328.00	87.00	84.99	0.00	-766.19	7,318.84	1,195.00	1,123.12	71.88	16.625	
15,800.00	8,523.00	14,557.28	7,328.00	88.05	86.06	0.00	-765.52	7,418.84	1,195.00	1,122.28	72.72	16.432	
15,900.00	8,523.00	14,657.28	7,328.00	89.11	87.13	0.00	-764.86	7,518.83	1,195.00	1,121.43	73.57	16.243	
16,000.00	8,523.00	14,757.28	7,328.00	90.16	88.20	0.00	-764.20	7,618.83	1,195.00	1,120.58	74.42	16.058	
16,100.00	8,523.00	14,857.28	7,328.00	91.22	89.28	0.00	-763.54	7,718.83	1,195.00	1,119.73	75.27	15.877	
16,200.00	8,523.00	14,957.28	7,328.00	92.28	90.35	0.00	-762.87	7,818.83	1,195.00	1,118.89	76.11	15.700	
16,300.00	8,523.00	15,057.28	7,328.00	93.34	91.43	0.00	-762.21	7,918.83	1,195.00	1,118.03	76.97	15.526	
16,400.00	8,523.00	15,157.28	7,328.00	94.41	92.50	0.00	-761.55	8,018.82	1,195.00	1,117.18	77.82	15.356	
16,500.00	8,523.00	15,257.28	7,328.00	95.47	93.58	0.00	-760.88	8,118.82	1,195.00	1,116.33	78.67	15.190	
16,600.00	8,523.00	15,357.28	7,328.00	96.54	94.66	0.00	-760.22	8,218.82	1,195.00	1,115.47	79.53	15.026	
16,700.00	8,523.00	15,457.28	7,328.00	97.60	95.74	0.00	-759.56	8,318.82	1,195.00	1,114.62	80.38	14.866	
16,800.00	8,523.00	15,557.28	7,328.00	98.67	96.82	0.00	-758.90	8,418.81	1,195.00	1,113.76	81.24	14.710	
16,900.00	8,523.00	15,657.28	7,328.00	99.74	97.91	0.00	-758.23	8,518.81	1,195.00	1,112.90	82.10	14.556	
17,000.00	8,523.00	15,757.28	7,328.00	100.81	98.99	0.00	-757.57	8,618.81	1,195.00	1,112.04	82.96	14.405	
17,100.00	8,523.00	15,857.28	7,328.00	101.88	100.07	0.00	-756.91	8,718.81	1,195.00	1,111.18	83.82	14.257	
17,200.00	8,523.00	15,957.28	7,328.00	102.96	101.16	0.00	-756.24	8,818.81	1,195.00	1,110.32	84.68	14.112	
17,300.00	8,523.00	16,057.28	7,328.00	104.03	102.24	0.00	-755.58	8,918.80	1,195.00	1,109.46	85.54	13.970	
17,400.00	8,523.00	16,157.28	7,328.00	105.11	103.33	0.00	-754.92	9,018.80	1,195.00	1,108.59	86.41	13.830	
17,500.00	8,523.00	16,257.28	7,328.00	106.18	104.41	0.00	-754.26	9,118.80	1,195.00	1,107.73	87.27	13.693	
17,600.00	8,523.00	16,357.28	7,328.00	107.26	105.50	0.00	-753.59	9,218.80	1,195.00	1,106.87	88.13	13.559	
17,700.00	8,523.00	16,457.28	7,328.00	108.34	106.59	0.00	-752.93	9,318.80	1,195.00	1,106.00	89.00	13.427	
17,800.00	8,523.00	16,557.28	7,328.00	109.41	107.68	0.00	-752.27	9,418.79	1,195.00	1,105.13	89.87	13.297	
17,900.00	8,523.00	16,657.28	7,328.00	110.49	108.77	0.00	-751.60	9,518.79	1,195.00	1,104.26	90.74	13.170	
18,000.00	8,523.00	16,757.28	7,328.00	111.57	109.86	0.00	-750.94	9,618.79	1,195.00	1,103.40	91.60	13.045	
18,100.00	8,523.00	16,857.28	7,328.00	112.66	110.95	0.00	-750.28	9,718.79	1,195.00	1,102.53	92.47	12.923	
18,200.00	8,523.00	16,957.28	7,328.00	113.74	112.04	0.00	-749.62	9,818.78	1,195.00	1,101.66	93.34	12.802	
18,300.00	8,523.00	17,057.28	7,328.00	114.82	113.13	0.00	-748.95	9,918.78	1,195.00	1,100.79	94.21	12.684	
18,400.00	8,523.00	17,157.28	7,328.00	115.90	114.23	0.00	-748.29	10,018.78	1,195.00	1,099.91	95.09	12.568	
18,500.00	8,523.00	17,257.28	7,328.00	116.99	115.32	0.00	-747.63	10,118.78	1,195.00	1,099.04	95.96	12.453	
18,600.00	8,523.00	17,357.28	7,328.00	118.07	116.41	0.00	-746.96	10,218.78	1,195.00	1,098.17	96.83	12.341	
18,700.00	8,523.00	17,457.28	7,328.00	119.16	117.51	0.00	-746.30	10,318.77	1,195.00	1,097.30	97.70	12.231	
18,800.00	8,523.00	17,557.28	7,328.00	120.24	118.60	0.00	-745.64	10,418.77	1,195.00	1,096.42	98.58	12.122	
18,900.00	8,523.00	17,657.28	7,328.00	121.33	119.70	0.00	-744.98	10,518.77	1,195.00	1,095.55	99.45	12.016	
19,000.00	8,523.00	17,757.28	7,328.00	122.42	120.80	0.00	-744.31	10,618.77	1,195.00	1,094.67	100.33	11.911	
19,100.00	8,523.00	17,857.28	7,328.00	123.51	121.89	0.00	-743.65	10,718.76	1,195.00	1,093.80	101.20	11.808	
19,200.00	8,523.00	17,957.28	7,328.00	124.59	122.99	0.00	-742.99	10,818.76	1,195.00	1,092.92	102.08	11.706	
19,224.00	8,523.00	17,981.28	7,328.00	124.86	123.25	0.00	-742.83	10,842.76	1,195.00	1,092.71	102.29	11.682	
19,235.87	8,523.00	17,993.15	7,328.00	124.99	123.38	0.00	-742.75	10,854.63	1,195.00	1,092.61	102.39	11.671	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	Offset	Semi Major Axis	Rule Assigned:										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
600.00	600.00	600.00	600.00	1.92	1.92	89.77	0.36	90.02	90.02	86.19	3.84	23.470	
700.00	700.00	700.00	700.00	2.28	2.28	89.77	0.36	90.02	90.02	85.47	4.55	19.774	
800.00	800.00	800.00	800.00	2.63	2.63	89.77	0.36	90.02	90.02	84.75	5.27	17.083	
900.00	900.00	900.00	900.00	2.99	2.99	89.77	0.36	90.02	90.02	84.03	5.99	15.037	
1,000.00	1,000.00	1,000.00	1,000.00	3.35	3.35	89.77	0.36	90.02	90.02	83.32	6.70	13.429	
1,100.00	1,100.00	1,100.00	1,100.00	3.71	3.71	89.77	0.36	90.02	90.02	82.60	7.42	12.132	
1,200.00	1,200.00	1,200.00	1,200.00	4.07	4.07	89.77	0.36	90.02	90.02	81.88	8.14	11.063	
1,271.02	1,271.01	1,271.15	1,271.15	4.31	4.32	-94.55	1.02	89.96	90.01	81.38	8.63	10.426 CC	
1,300.00	1,299.99	1,300.15	1,300.14	4.41	4.43	-95.38	1.67	89.89	90.02	81.18	8.84	10.188	
1,400.00	1,399.91	1,399.90	1,399.81	4.74	4.79	-100.32	5.56	89.51	90.47	80.95	9.52	9.505 ES	
1,500.00	1,499.69	1,498.83	1,498.53	5.07	5.14	-108.22	11.99	88.88	92.69	82.49	10.20	9.087	
1,600.00	1,599.27	1,596.57	1,595.85	5.40	5.49	-118.21	20.83	88.01	98.60	87.72	10.88	9.063 SF	
1,700.00	1,698.57	1,692.73	1,691.37	5.74	5.83	-128.85	31.94	86.92	110.11	98.56	11.55	9.535	
1,713.40	1,711.86	1,705.60	1,704.13	5.79	5.88	-130.25	33.61	86.75	112.15	100.51	11.64	9.636	
1,800.00	1,797.67	1,789.20	1,787.02	6.08	6.18	-138.40	44.42	85.69	126.94	114.72	12.22	10.389	
1,900.00	1,896.77	1,885.74	1,882.74	6.42	6.52	-145.67	56.90	84.46	146.52	133.63	12.89	11.367	
2,000.00	1,995.87	1,982.28	1,978.46	6.77	6.86	-151.21	69.39	83.24	167.88	154.31	13.56	12.378	
2,100.00	2,094.97	2,078.82	2,074.18	7.12	7.21	-155.49	81.87	82.01	190.42	176.18	14.24	13.374	
2,200.00	2,194.07	2,175.36	2,169.90	7.48	7.55	-158.86	94.35	80.78	213.76	198.85	14.92	14.331	
2,300.00	2,293.16	2,271.90	2,265.62	7.83	7.90	-161.57	106.84	79.56	237.68	222.08	15.60	15.240	
2,400.00	2,392.26	2,368.43	2,361.34	8.19	8.25	-163.78	119.32	78.33	262.01	245.73	16.28	16.097	
2,500.00	2,491.36	2,464.97	2,457.06	8.55	8.60	-165.62	131.81	77.10	286.65	269.69	16.96	16.902	
2,600.00	2,590.46	2,561.51	2,552.78	8.91	8.95	-167.17	144.29	75.88	311.52	293.88	17.64	17.657	
2,700.00	2,689.56	2,658.05	2,648.50	9.27	9.29	-168.49	156.78	74.65	336.58	318.25	18.33	18.364	
2,800.00	2,788.66	2,754.59	2,744.22	9.63	9.64	-169.63	169.26	73.42	361.78	342.76	19.01	19.027	
2,900.00	2,887.75	2,851.13	2,839.94	10.00	9.99	-170.62	181.74	72.20	387.10	367.40	19.70	19.648	
3,000.00	2,986.85	2,947.66	2,935.66	10.36	10.34	-171.49	194.23	70.97	412.51	392.12	20.39	20.231	
3,100.00	3,085.95	3,044.20	3,031.38	10.72	10.69	-172.26	206.71	69.74	438.00	416.93	21.08	20.780	
3,200.00	3,185.05	3,140.74	3,127.10	11.09	11.04	-172.94	219.20	68.52	463.56	441.79	21.77	21.296	
3,300.00	3,284.15	3,237.28	3,222.82	11.46	11.39	-173.55	231.68	67.29	489.18	466.72	22.46	21.782	
3,400.00	3,383.24	3,333.82	3,318.54	11.82	11.74	-174.10	244.17	66.06	514.84	491.69	23.15	22.240	
3,500.00	3,482.34	3,430.36	3,414.26	12.19	12.09	-174.60	256.65	64.84	540.54	516.70	23.84	22.674	
3,600.00	3,581.44	3,526.90	3,509.98	12.56	12.44	-175.06	269.13	63.61	566.27	541.74	24.53	23.083	
3,700.00	3,680.54	3,623.43	3,605.70	12.93	12.79	-175.47	281.62	62.38	592.04	566.82	25.22	23.472	
3,800.00	3,779.64	3,719.97	3,701.42	13.30	13.15	-175.85	294.10	61.16	617.83	591.92	25.92	23.839	
3,900.00	3,878.73	3,816.51	3,797.14	13.67	13.50	-176.20	306.59	59.93	643.65	617.04	26.61	24.189	
4,000.00	3,977.83	3,913.05	3,892.86	14.03	13.85	-176.52	319.07	58.70	669.49	642.18	27.30	24.521	
4,100.00	4,076.93	4,009.59	3,988.58	14.40	14.20	-176.82	331.56	57.48	695.34	667.35	28.00	24.837	
15,500.00	8,523.00	13,159.23	6,303.00	84.89	81.64	-30.73	552.33	7,110.07	2,582.73	2,478.70	104.03	24.827	
15,600.00	8,523.00	13,259.23	6,303.00	85.94	82.72	-30.73	552.99	7,210.07	2,582.73	2,477.37	105.36	24.514	
15,700.00	8,523.00	13,359.23	6,303.00	87.00	83.80	-30.73	553.66	7,310.07	2,582.73	2,476.04	106.69	24.209	
15,800.00	8,523.00	13,459.23	6,303.00	88.05	84.88	-30.73	554.32	7,410.07	2,582.73	2,474.71	108.02	23.910	
15,900.00	8,523.00	13,559.23	6,303.00	89.11	85.96	-30.73	554.99	7,510.06	2,582.73	2,473.38	109.35	23.619	
16,000.00	8,523.00	13,659.23	6,303.00	90.16	87.04	-30.73	555.65	7,610.06	2,582.73	2,472.05	110.69	23.334	
16,100.00	8,523.00	13,759.23	6,303.00	91.22	88.13	-30.73	556.32	7,710.06	2,582.73	2,470.71	112.02	23.056	
16,200.00	8,523.00	13,859.23	6,303.00	92.28	89.21	-30.73	556.98	7,810.06	2,582.73	2,469.37	113.36	22.783	
16,300.00	8,523.00	13,959.23	6,303.00	93.34	90.30	-30.73	557.64	7,910.06	2,582.73	2,468.03	114.70	22.517	
16,400.00	8,523.00	14,059.23	6,303.00	94.41	91.39	-30.73	558.31	8,010.05	2,582.73	2,466.69	116.04	22.257	
16,500.00	8,523.00	14,159.23	6,303.00	95.47	92.47	-30.73	558.97	8,110.05	2,582.74	2,465.35	117.38	22.002	
16,600.00	8,523.00	14,259.23	6,303.00	96.54	93.56	-30.73	559.64	8,210.05	2,582.74	2,464.01	118.73	21.753	
16,700.00	8,523.00	14,359.23	6,303.00	97.60	94.65	-30.73	560.30	8,310.05	2,582.74	2,462.66	120.07	21.510	
16,800.00	8,523.00	14,459.23	6,303.00	98.67	95.74	-30.73	560.97	8,410.04	2,582.74	2,461.32	121.42	21.271	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,900.00	8,523.00	14,559.23	6,303.00	99.74	96.83	-30.73	561.63	8,510.04	2,582.74	2,459.97	122.77	21.038	
17,000.00	8,523.00	14,659.23	6,303.00	100.81	97.92	-30.73	562.30	8,610.04	2,582.74	2,458.62	124.12	20.809	
17,100.00	8,523.00	14,759.23	6,303.00	101.88	99.02	-30.73	562.96	8,710.04	2,582.74	2,457.27	125.47	20.585	
17,200.00	8,523.00	14,859.23	6,303.00	102.96	100.11	-30.73	563.63	8,810.04	2,582.74	2,455.92	126.82	20.366	
17,300.00	8,523.00	14,959.23	6,303.00	104.03	101.20	-30.73	564.29	8,910.03	2,582.74	2,454.57	128.17	20.151	
17,400.00	8,523.00	15,059.23	6,303.00	105.11	102.30	-30.73	564.95	9,010.03	2,582.74	2,453.22	129.53	19.940	
17,500.00	8,523.00	15,159.23	6,303.00	106.18	103.39	-30.73	565.62	9,110.03	2,582.74	2,451.86	130.88	19.734	
17,600.00	8,523.00	15,259.23	6,303.00	107.26	104.49	-30.73	566.28	9,210.03	2,582.74	2,450.51	132.24	19.531	
17,700.00	8,523.00	15,359.23	6,303.00	108.34	105.58	-30.73	566.95	9,310.02	2,582.74	2,449.15	133.59	19.333	
17,800.00	8,523.00	15,459.23	6,303.00	109.41	106.68	-30.73	567.61	9,410.02	2,582.74	2,447.80	134.95	19.139	
17,900.00	8,523.00	15,559.23	6,303.00	110.49	107.78	-30.73	568.28	9,510.02	2,582.75	2,446.44	136.31	18.948	
18,000.00	8,523.00	15,659.23	6,303.00	111.57	108.88	-30.73	568.94	9,610.02	2,582.75	2,445.08	137.67	18.761	
18,100.00	8,523.00	15,759.23	6,303.00	112.66	109.97	-30.73	569.61	9,710.02	2,582.75	2,443.72	139.03	18.577	
18,200.00	8,523.00	15,859.23	6,303.00	113.74	111.07	-30.73	570.27	9,810.01	2,582.75	2,442.36	140.39	18.397	
18,300.00	8,523.00	15,959.23	6,303.00	114.82	112.17	-30.73	570.93	9,910.01	2,582.75	2,441.00	141.75	18.220	
18,400.00	8,523.00	16,059.23	6,303.00	115.90	113.27	-30.73	571.60	10,010.01	2,582.75	2,439.64	143.11	18.047	
18,500.00	8,523.00	16,159.23	6,303.00	116.99	114.37	-30.73	572.26	10,110.01	2,582.75	2,438.27	144.48	17.877	
18,600.00	8,523.00	16,259.23	6,303.00	118.07	115.47	-30.73	572.93	10,210.01	2,582.75	2,436.91	145.84	17.710	
18,700.00	8,523.00	16,359.23	6,303.00	119.16	116.57	-30.73	573.59	10,310.00	2,582.75	2,435.55	147.20	17.545	
18,800.00	8,523.00	16,459.23	6,303.00	120.24	117.67	-30.73	574.26	10,410.00	2,582.75	2,434.18	148.57	17.384	
18,900.00	8,523.00	16,559.23	6,303.00	121.33	118.77	-30.73	574.92	10,510.00	2,582.75	2,432.82	149.94	17.226	
19,000.00	8,523.00	16,659.23	6,303.00	122.42	119.88	-30.73	575.59	10,610.00	2,582.75	2,431.45	151.30	17.070	
19,100.00	8,523.00	16,759.23	6,303.00	123.51	120.98	-30.73	576.25	10,709.99	2,582.75	2,430.08	152.67	16.917	
19,200.00	8,523.00	16,859.23	6,303.00	124.59	122.08	-30.73	576.91	10,809.99	2,582.75	2,428.72	154.04	16.767	
19,235.87	8,523.00	16,895.10	6,303.00	124.99	122.48	-30.73	577.15	10,845.86	2,582.75	2,428.23	154.53	16.714	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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 - (B08) Koala 9 Fed Com 114H - Permit - APD-Rev00													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
800.00	800.00	800.00	800.00	2.63	2.63	89.77	0.48	120.02	120.02	114.75	5.27	22.776	
900.00	900.00	900.14	900.13	2.99	2.98	90.40	-0.83	119.96	119.96	113.99	5.97	20.097	
1,000.00	1,000.00	1,000.14	1,000.05	3.35	3.31	92.27	-4.76	119.77	119.86	113.21	6.66	18.009	
1,018.02	1,018.02	1,018.14	1,018.02	3.42	3.37	92.74	-5.74	119.72	119.86	113.08	6.78	17.677 CC	
1,100.00	1,100.00	1,099.87	1,099.56	3.71	3.64	95.39	-11.27	119.46	119.99	112.64	7.35	16.331 ES	
1,200.00	1,200.00	1,199.19	1,198.47	4.07	3.98	99.70	-20.34	119.02	120.76	112.71	8.04	15.015	
1,300.00	1,299.99	1,298.13	1,296.72	4.41	4.32	-78.97	-31.92	118.47	122.48	113.76	8.72	14.044	
1,400.00	1,399.91	1,396.81	1,394.38	4.74	4.66	-74.33	-46.00	117.79	125.07	115.68	9.39	13.325	
1,500.00	1,499.69	1,495.58	1,491.77	5.07	5.01	-69.96	-62.49	117.00	128.43	118.37	10.06	12.770	
1,600.00	1,599.27	1,595.24	1,589.91	5.40	5.36	-66.59	-79.74	116.17	131.70	120.96	10.74	12.262	
1,700.00	1,698.57	1,695.08	1,688.24	5.74	5.72	-64.39	-97.03	115.35	134.24	122.81	11.43	11.742	
1,713.40	1,711.86	1,708.47	1,701.43	5.79	5.77	-64.18	-99.34	115.23	134.51	122.99	11.53	11.671	
1,800.00	1,797.67	1,795.00	1,786.65	6.08	6.09	-62.91	-114.32	114.52	136.22	124.09	12.13	11.229	
1,900.00	1,896.77	1,894.92	1,885.06	6.42	6.46	-61.48	-131.62	113.69	138.28	125.44	12.84	10.773	
2,000.00	1,995.87	1,994.84	1,983.47	6.77	6.82	-60.10	-148.92	112.86	140.41	126.87	13.54	10.368	
2,100.00	2,094.97	2,094.76	2,081.87	7.12	7.19	-58.76	-166.22	112.03	142.63	128.37	14.25	10.006	
2,200.00	2,194.07	2,194.68	2,180.28	7.48	7.57	-57.46	-183.52	111.20	144.92	129.95	14.97	9.682	
2,300.00	2,293.16	2,294.60	2,278.69	7.83	7.94	-56.21	-200.81	110.37	147.28	131.60	15.68	9.391	
2,400.00	2,392.26	2,394.52	2,377.10	8.19	8.31	-54.99	-218.11	109.54	149.72	133.32	16.40	9.129	
2,500.00	2,491.36	2,494.44	2,475.51	8.55	8.69	-53.81	-235.41	108.71	152.21	135.09	17.12	8.892	
2,600.00	2,590.46	2,594.36	2,573.92	8.91	9.06	-52.68	-252.71	107.88	154.77	136.94	17.84	8.677	
2,700.00	2,689.56	2,694.28	2,672.32	9.27	9.44	-51.57	-270.01	107.05	157.39	138.83	18.56	8.481	
2,800.00	2,788.66	2,794.20	2,770.73	9.63	9.82	-50.51	-287.31	106.22	160.07	140.79	19.28	8.303	
2,900.00	2,887.75	2,894.12	2,869.14	10.00	10.19	-49.48	-304.60	105.39	162.80	142.80	20.00	8.140	
3,000.00	2,986.85	2,994.04	2,967.55	10.36	10.57	-48.48	-321.90	104.56	165.57	144.86	20.72	7.991	
3,100.00	3,085.95	3,093.97	3,065.96	10.72	10.95	-47.52	-339.20	103.73	168.40	146.96	21.44	7.854	
3,200.00	3,185.05	3,193.89	3,164.37	11.09	11.33	-46.59	-356.50	102.90	171.28	149.11	22.16	7.728	
3,300.00	3,284.15	3,293.81	3,262.77	11.46	11.71	-45.69	-373.80	102.08	174.19	151.31	22.88	7.612	
3,400.00	3,383.24	3,393.73	3,361.18	11.82	12.09	-44.82	-391.09	101.25	177.15	153.55	23.61	7.505	
3,500.00	3,482.34	3,493.65	3,459.59	12.19	12.47	-43.98	-408.39	100.42	180.15	155.82	24.33	7.405	
3,600.00	3,581.44	3,593.57	3,558.00	12.56	12.85	-43.17	-425.69	99.59	183.19	158.14	25.05	7.313	
3,700.00	3,680.54	3,693.49	3,656.41	12.93	13.23	-42.38	-442.99	98.76	186.26	160.49	25.77	7.228	
3,800.00	3,779.64	3,793.41	3,754.82	13.30	13.61	-41.62	-460.29	97.93	189.36	162.87	26.49	7.148	
3,900.00	3,878.73	3,893.33	3,853.23	13.67	13.99	-40.88	-477.59	97.10	192.50	165.29	27.21	7.074	
4,000.00	3,977.83	3,993.25	3,951.63	14.03	14.37	-40.17	-494.88	96.27	195.67	167.74	27.93	7.005	
4,100.00	4,076.93	4,093.17	4,050.04	14.40	14.76	-39.48	-512.18	95.44	198.87	170.21	28.66	6.940	
4,200.00	4,176.03	4,193.09	4,148.45	14.77	15.14	-38.81	-529.48	94.61	202.09	172.72	29.38	6.879	
4,300.00	4,275.13	4,293.01	4,246.86	15.14	15.52	-38.17	-546.78	93.78	205.35	175.25	30.10	6.823	
4,400.00	4,374.22	4,392.93	4,345.27	15.52	15.90	-37.54	-564.08	92.95	208.62	177.80	30.82	6.769	
4,500.00	4,473.32	4,492.85	4,443.68	15.89	16.28	-36.93	-581.38	92.12	211.93	180.39	31.54	6.719	
4,600.00	4,572.42	4,592.78	4,542.08	16.26	16.66	-36.35	-598.67	91.29	215.25	182.99	32.26	6.672	
4,700.00	4,671.52	4,692.70	4,640.49	16.63	17.05	-35.78	-615.97	90.46	218.60	185.62	32.98	6.628	
4,800.00	4,770.62	4,792.62	4,738.90	17.00	17.43	-35.22	-633.27	89.63	221.96	188.26	33.70	6.586	
4,900.00	4,869.71	4,892.54	4,837.31	17.37	17.81	-34.69	-650.57	88.81	225.35	190.93	34.42	6.547	
5,000.00	4,968.81	4,992.46	4,935.72	17.74	18.19	-34.16	-667.87	87.98	228.76	193.62	35.14	6.509	
5,100.00	5,067.91	5,096.52	5,038.35	18.11	18.59	-33.76	-685.03	87.15	231.49	195.59	35.90	6.448	
5,200.00	5,167.01	5,201.89	5,142.70	18.49	18.99	-33.73	-699.62	86.45	231.98	195.32	36.66	6.328	
5,300.00	5,266.11	5,307.20	5,247.35	18.86	19.38	-34.09	-711.32	85.89	230.16	192.75	37.41	6.153	
5,400.00	5,365.21	5,412.29	5,352.07	19.23	19.76	-34.87	-720.12	85.47	226.06	187.92	38.14	5.927	
5,500.00	5,464.30	5,517.02	5,456.63	19.60	20.13	-36.10	-726.03	85.19	219.75	180.89	38.87	5.654	
5,600.00	5,563.40	5,621.22	5,560.78	19.98	20.49	-37.87	-729.06	85.04	211.37	171.78	39.58	5.340	
5,700.00	5,662.50	5,722.94	5,662.50	20.35	20.82	-40.19	-729.52	85.02	201.27	160.96	40.30	4.994	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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 - (B08) Koala 9 Fed Com 114H - Permit - APD-Rev00													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+SAG+FDIR (SQC2)													Offset Well Error: 0.00 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,800.00	5,761.60	5,814.55	5,754.09	20.72	21.11	-42.71	-729.66	85.75	191.90	150.78	41.12	4.667	
5,855.57	5,816.67	5,858.14	5,797.50	20.93	21.25	-44.64	-730.40	89.55	190.37	148.83	41.54	4.583 SF	
5,900.00	5,860.70	5,892.49	5,831.43	21.09	21.37	-46.58	-731.42	94.82	191.83	150.06	41.77	4.593	
6,000.00	5,959.79	5,966.99	5,903.52	21.47	21.61	-51.71	-734.97	113.04	204.60	162.77	41.83	4.891	
6,100.00	6,058.89	6,035.98	5,967.63	21.84	21.83	-56.91	-739.81	137.96	230.89	189.70	41.19	5.605	
6,200.00	6,157.99	6,100.00	6,023.98	22.21	22.02	-61.51	-745.59	167.70	269.94	229.83	40.11	6.729	
6,300.00	6,257.09	6,150.00	6,065.44	22.58	22.15	-64.73	-750.92	195.11	319.94	281.62	38.32	8.349	
6,400.00	6,356.19	6,200.00	6,104.31	22.96	22.28	-67.52	-756.92	225.97	378.77	341.88	36.89	10.267	
6,500.00	6,455.28	6,250.00	6,140.29	23.33	22.40	-69.89	-763.54	260.03	444.73	408.87	35.86	12.401	
6,600.00	6,554.38	6,281.57	6,161.39	23.70	22.47	-71.17	-768.02	283.07	516.17	481.94	34.23	15.078	
6,700.00	6,653.48	6,313.82	6,181.58	24.08	22.53	-72.33	-772.81	307.74	592.11	559.06	33.05	17.914	
6,800.00	6,752.58	6,350.00	6,202.51	24.45	22.61	-73.47	-778.44	336.71	671.71	639.36	32.35	20.762	
6,900.00	6,851.68	6,366.80	6,211.59	24.82	22.64	-73.94	-781.14	350.59	753.98	722.84	31.13	24.219	
17,800.00	8,523.00	15,454.17	6,303.00	109.41	106.14	0.00	-752.25	9,418.79	2,220.00	2,131.03	88.97	24.952	
17,900.00	8,523.00	15,554.17	6,303.00	110.49	107.24	0.00	-751.59	9,518.79	2,220.00	2,130.16	89.84	24.710	
18,000.00	8,523.00	15,654.17	6,303.00	111.57	108.33	0.00	-750.93	9,618.79	2,220.00	2,129.28	90.72	24.472	
18,100.00	8,523.00	15,754.17	6,303.00	112.66	109.43	0.00	-750.27	9,718.79	2,220.00	2,128.41	91.59	24.238	
18,200.00	8,523.00	15,854.17	6,303.00	113.74	110.53	0.00	-749.61	9,818.78	2,220.00	2,127.53	92.47	24.009	
18,300.00	8,523.00	15,954.17	6,303.00	114.82	111.63	0.00	-748.94	9,918.78	2,220.00	2,126.66	93.34	23.783	
18,400.00	8,523.00	16,054.17	6,303.00	115.90	112.73	0.00	-748.28	10,018.78	2,220.00	2,125.78	94.22	23.562	
18,500.00	8,523.00	16,154.17	6,303.00	116.99	113.83	0.00	-747.62	10,118.78	2,220.00	2,124.90	95.09	23.345	
18,600.00	8,523.00	16,254.17	6,303.00	118.07	114.93	0.00	-746.96	10,218.77	2,220.00	2,124.03	95.97	23.132	
18,700.00	8,523.00	16,354.17	6,303.00	119.16	116.03	0.00	-746.30	10,318.77	2,220.00	2,123.15	96.85	22.922	
18,800.00	8,523.00	16,454.17	6,303.00	120.24	117.13	0.00	-745.63	10,418.77	2,220.00	2,122.27	97.73	22.716	
18,900.00	8,523.00	16,554.17	6,303.00	121.33	118.23	0.00	-744.97	10,518.77	2,220.00	2,121.39	98.61	22.513	
19,000.00	8,523.00	16,654.17	6,303.00	122.42	119.33	0.00	-744.31	10,618.77	2,220.00	2,120.51	99.49	22.314	
19,100.00	8,523.00	16,754.17	6,303.00	123.51	120.44	0.00	-743.65	10,718.76	2,220.00	2,119.63	100.37	22.119	
19,200.00	8,523.00	16,854.17	6,303.00	124.59	121.54	0.00	-742.99	10,818.76	2,220.00	2,118.75	101.25	21.926	
19,235.87	8,523.00	16,890.04	6,303.00	124.99	121.94	0.00	-742.75	10,854.63	2,220.00	2,118.44	101.56	21.858	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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						Rule Assigned:				Offset Well Error:	0.00 usft	
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,400.00	5,365.21	5,346.93	5,346.21	19.23	107.97	87.17	-493.30	-3,135.15	3,103.23	2,976.03	127.20	24.396		
5,500.00	5,464.30	5,446.63	5,445.87	19.60	111.18	87.43	-492.59	-3,135.15	3,102.61	2,971.83	130.78	23.724		
5,600.00	5,563.40	5,545.34	5,544.40	19.98	114.88	87.66	-493.30	-3,135.15	3,102.01	2,967.17	134.85	23.004		
5,700.00	5,662.50	5,644.43	5,643.50	20.35	119.01	87.91	-493.30	-3,135.15	3,101.49	2,962.14	139.35	22.256		
5,800.00	5,761.60	5,745.12	5,744.09	20.72	123.21	88.18	-492.00	-3,135.15	3,101.07	2,957.14	143.93	21.546		
5,900.00	5,860.70	5,845.15	5,843.39	21.09	127.84	88.41	-492.80	-3,135.15	3,100.64	2,951.71	148.93	20.820		
6,000.00	5,959.79	5,943.07	5,940.79	21.47	133.60	88.64	-493.30	-3,135.15	3,100.27	2,945.20	155.07	19.993		
6,100.00	6,058.89	6,042.60	6,039.89	21.84	139.79	88.89	-493.30	-3,135.15	3,099.98	2,938.36	161.63	19.180		
6,200.00	6,157.99	6,147.30	6,144.34	22.21	146.44	89.17	-492.03	-3,135.15	3,099.81	2,931.16	168.65	18.380		
6,300.00	6,257.09	6,249.93	6,245.97	22.58	153.25	89.40	-493.05	-3,135.15	3,099.60	2,923.76	175.83	17.628		
6,400.00	6,356.19	6,354.11	6,349.55	22.96	160.59	89.64	-494.04	-3,135.15	3,099.44	2,915.89	183.55	16.886		
6,457.74	6,413.40	6,399.33	6,394.40	23.17	163.98	89.77	-493.30	-3,135.15	3,099.42	2,912.26	187.16	16.561		
6,500.00	6,455.28	6,452.02	6,446.83	23.33	167.89	89.90	-493.05	-3,135.15	3,099.43	2,908.21	191.22	16.209		
6,552.22	6,507.04	6,493.91	6,488.04	23.53	170.99	90.00	-493.30	-3,135.15	3,099.39	2,904.88	194.51	15.934 CC		
6,600.00	6,554.38	6,543.14	6,536.98	23.70	174.55	90.14	-492.22	-3,135.15	3,099.46	2,901.21	198.26	15.634		
6,700.00	6,653.48	6,654.97	6,648.19	24.08	182.41	90.39	-493.62	-3,135.15	3,099.46	2,892.98	206.48	15.011		
6,706.37	6,659.79	6,664.52	6,657.69	24.10	183.07	90.40	-494.30	-3,135.15	3,099.44	2,892.27	207.17	14.961		
6,800.00	6,752.58	6,743.92	6,736.75	24.45	187.87	90.65	-491.52	-3,135.15	3,099.70	2,887.38	212.32	14.599		
6,900.00	6,851.68	6,840.36	6,832.68	24.82	193.44	90.85	-493.30	-3,135.15	3,099.74	2,881.48	218.26	14.202		
7,000.00	6,950.77	6,939.81	6,931.77	25.20	198.50	91.10	-493.30	-3,135.15	3,099.97	2,876.27	223.70	13.858		
7,100.00	7,049.87	7,049.43	7,041.28	25.57	203.37	91.37	-493.58	-3,135.15	3,100.25	2,871.31	228.94	13.542		
7,102.67	7,052.52	7,052.57	7,044.41	25.58	203.51	91.37	-493.71	-3,135.15	3,100.25	2,871.16	229.09	13.533		
7,200.00	7,148.97	7,138.37	7,129.97	25.95	206.86	91.59	-493.30	-3,135.15	3,100.60	2,867.80	232.80	13.319		
7,300.00	7,248.07	7,237.47	7,229.07	26.32	210.55	91.84	-493.30	-3,135.15	3,101.01	2,864.14	236.87	13.092		
7,340.44	7,288.14	7,278.70	7,270.25	26.47	212.09	91.97	-491.71	-3,135.15	3,101.34	2,862.79	238.55	13.001		
7,400.00	7,347.23	7,341.96	7,333.48	26.69	214.44	92.10	-492.38	-3,135.15	3,101.55	2,860.42	241.13	12.862		
7,500.00	7,446.67	7,436.35	7,427.67	27.06	217.71	92.28	-493.30	-3,135.15	3,101.86	2,857.09	244.77	12.673		
7,600.00	7,546.35	7,543.56	7,534.82	27.42	221.18	92.43	-493.41	-3,135.15	3,102.18	2,853.57	248.61	12.478		
7,700.00	7,646.20	7,636.01	7,627.20	27.78	223.82	92.53	-493.30	-3,135.15	3,102.41	2,850.81	251.61	12.330		
7,800.00	7,746.16	7,735.97	7,727.16	28.14	226.70	92.58	-493.30	-3,135.15	3,102.54	2,847.70	254.83	12.175		
7,853.84	7,800.00	7,791.27	7,782.43	28.32	228.29	-83.90	-491.65	-3,135.15	3,102.73	2,846.13	256.60	12.092		
7,900.00	7,846.16	7,838.82	7,829.97	28.46	229.65	-83.90	-491.96	-3,135.15	3,102.70	2,844.58	258.12	12.021		
8,003.88	7,950.04	7,945.87	7,936.98	28.79	232.73	-83.93	-493.36	-3,135.15	3,102.55	2,841.03	261.52	11.863		
8,004.98	7,951.14	7,947.00	7,938.11	28.80	232.76	-172.93	-493.38	-3,135.15	3,102.55	2,840.99	261.56	11.862 ES		
8,050.00	7,996.11	7,986.13	7,977.11	28.94	233.68	-172.91	-493.30	-3,135.15	3,104.39	2,841.78	262.62	11.821		
8,100.00	8,045.71	8,035.73	8,026.71	29.11	234.86	-172.85	-493.30	-3,135.15	3,110.54	2,846.57	263.97	11.784		
8,150.00	8,094.58	8,085.98	8,076.94	29.27	236.06	-172.72	-492.51	-3,135.15	3,121.03	2,855.70	265.33	11.763		
8,200.00	8,142.35	8,136.01	8,126.96	29.42	237.25	-172.57	-492.89	-3,135.15	3,135.59	2,868.91	266.67	11.758 SF		
8,250.00	8,188.66	8,178.75	8,169.66	29.57	238.21	-172.36	-493.30	-3,135.15	3,154.22	2,886.44	267.78	11.779		
8,300.00	8,233.15	8,223.24	8,214.15	29.71	239.00	-172.07	-493.30	-3,135.15	3,176.83	2,908.13	268.70	11.823		
8,350.00	8,275.49	8,265.58	8,256.49	29.84	239.75	-171.70	-493.30	-3,135.15	3,203.21	2,933.63	269.58	11.882		
8,400.00	8,315.35	8,305.44	8,296.35	29.95	240.46	-171.22	-493.30	-3,135.15	3,233.16	2,962.75	270.41	11.957		
8,450.00	8,352.43	8,342.69	8,333.59	30.05	241.13	-170.59	-492.59	-3,135.15	3,266.51	2,995.34	271.17	12.046		
8,500.00	8,386.45	8,377.31	8,368.21	30.14	241.74	-169.80	-492.64	-3,135.15	3,302.88	3,031.01	271.87	12.149		
8,550.00	8,417.14	8,408.54	8,399.44	30.22	242.30	-168.75	-492.73	-3,135.15	3,342.06	3,069.56	272.50	12.264		
8,600.00	8,444.28	8,436.16	8,427.06	30.28	242.79	-167.34	-492.87	-3,135.15	3,383.75	3,110.70	273.05	12.392		
8,650.00	8,467.66	8,459.95	8,450.85	30.33	243.21	-165.35	-493.01	-3,135.15	3,427.63	3,154.11	273.52	12.532		
8,700.00	8,487.10	8,479.73	8,470.62	30.38	243.57	-162.41	-493.15	-3,135.15	3,473.38	3,199.48	273.90	12.681		
8,750.00	8,502.46	8,495.34	8,486.24	30.42	243.85	-157.70	-493.28	-3,135.15	3,520.66	3,246.45	274.20	12.840		
8,800.00	8,513.61	8,503.73	8,494.61	30.46	243.99	-149.17	-493.30	-3,135.15	3,569.09	3,294.74	274.36	13.009		
8,850.00	8,520.47	8,510.59	8,501.47	30.51	244.10	-131.50	-493.30	-3,135.15	3,618.33	3,343.84	274.48	13.182		
8,903.88	8,523.00	8,513.12	8,504.00	30.57	244.15	-90.00	-493.30	-3,135.15	3,671.83	3,397.31	274.53	13.375		

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	
8,934.88	8,523.00	8,513.12	8,504.00	30.62	244.15	-90.00	-493.30	-3,135.15	3,702.68	3,428.16	13.488
9,000.00	8,523.00	8,513.12	8,504.00	30.74	244.15	-90.00	-493.30	-3,135.15	3,767.53	3,493.00	13.724
9,100.00	8,523.00	8,513.12	8,504.00	30.97	244.15	-90.00	-493.30	-3,135.15	3,867.12	3,592.60	14.086
9,200.00	8,523.00	8,513.12	8,504.00	31.26	244.15	-90.00	-493.30	-3,135.15	3,966.74	3,692.21	14.449
9,300.00	8,523.00	8,513.12	8,504.00	31.58	244.15	-90.00	-493.30	-3,135.15	4,066.38	3,791.84	14.812
9,400.00	8,523.00	8,513.12	8,504.00	31.95	244.15	-90.00	-493.30	-3,135.15	4,166.03	3,891.49	15.174
9,500.00	8,523.00	8,513.12	8,504.00	32.35	244.15	-90.00	-493.30	-3,135.15	4,265.70	3,991.15	15.537
9,600.00	8,523.00	8,513.12	8,504.00	32.78	244.15	-90.00	-493.30	-3,135.15	4,365.39	4,090.83	15.900
9,700.00	8,523.00	8,513.12	8,504.00	33.25	244.15	-90.00	-493.30	-3,135.15	4,465.09	4,190.52	16.262
9,800.00	8,523.00	8,513.12	8,504.00	33.75	244.15	-90.00	-493.30	-3,135.15	4,564.80	4,290.22	16.625
9,900.00	8,523.00	8,513.12	8,504.00	34.28	244.15	-90.00	-493.30	-3,135.15	4,664.52	4,389.93	16.987
10,000.00	8,523.00	8,513.12	8,504.00	34.83	244.15	-90.00	-493.30	-3,135.15	4,764.26	4,489.65	17.349
10,100.00	8,523.00	8,513.12	8,504.00	35.42	244.15	-90.00	-493.30	-3,135.15	4,864.01	4,589.38	17.712
10,200.00	8,523.00	8,513.12	8,504.00	36.03	244.15	-90.00	-493.30	-3,135.15	4,963.76	4,689.13	18.074
10,300.00	8,523.00	8,513.12	8,504.00	36.66	244.15	-90.00	-493.30	-3,135.15	5,063.53	4,788.87	18.436
10,400.00	8,523.00	8,513.12	8,504.00	37.32	244.15	-90.00	-493.30	-3,135.15	5,163.30	4,888.63	18.798
10,500.00	8,523.00	8,513.12	8,504.00	37.99	244.15	-90.00	-493.30	-3,135.15	5,263.09	4,988.40	19.160
10,600.00	8,523.00	8,513.12	8,504.00	38.69	244.15	-90.00	-493.30	-3,135.15	5,362.88	5,088.17	19.522
10,700.00	8,523.00	8,513.12	8,504.00	39.41	244.15	-90.00	-493.30	-3,135.15	5,462.68	5,187.95	19.884
10,800.00	8,523.00	8,513.12	8,504.00	40.15	244.15	-90.00	-493.30	-3,135.15	5,562.49	5,287.73	20.245
10,900.00	8,523.00	8,513.12	8,504.00	40.90	244.15	-90.00	-493.30	-3,135.15	5,662.30	5,387.52	20.607
11,000.00	8,523.00	8,513.12	8,504.00	41.67	244.15	-90.00	-493.30	-3,135.15	5,762.12	5,487.32	20.968
11,100.00	8,523.00	8,513.12	8,504.00	42.46	244.15	-90.00	-493.30	-3,135.15	5,861.95	5,587.12	21.329
11,200.00	8,523.00	8,513.12	8,504.00	43.26	244.15	-90.00	-493.30	-3,135.15	5,961.78	5,686.92	21.690
11,300.00	8,523.00	8,513.12	8,504.00	44.08	244.15	-90.00	-493.30	-3,135.15	6,061.62	5,786.73	22.051
11,400.00	8,523.00	8,513.12	8,504.00	44.90	244.15	-90.00	-493.30	-3,135.15	6,161.46	5,886.55	22.412
11,500.00	8,523.00	8,513.12	8,504.00	45.75	244.15	-90.00	-493.30	-3,135.15	6,261.31	5,986.37	22.773
11,600.00	8,523.00	8,513.12	8,504.00	46.60	244.15	-90.00	-493.30	-3,135.15	6,361.16	6,086.19	23.134
11,700.00	8,523.00	8,513.12	8,504.00	47.46	244.15	-90.00	-493.30	-3,135.15	6,461.02	6,186.01	23.494
11,800.00	8,523.00	8,513.12	8,504.00	48.34	244.15	-90.00	-493.30	-3,135.15	6,560.88	6,285.84	23.854
11,900.00	8,523.00	8,513.12	8,504.00	49.22	244.15	-90.00	-493.30	-3,135.15	6,660.75	6,385.68	24.215
12,000.00	8,523.00	8,513.12	8,504.00	50.12	244.15	-90.00	-493.30	-3,135.15	6,760.62	6,485.51	24.574
12,100.00	8,523.00	8,513.12	8,504.00	51.02	244.15	-90.00	-493.30	-3,135.15	6,860.49	6,585.35	24.934

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	
2,900.00	2,887.75	2,861.31	2,860.75	10.00	62.63	77.10	-488.79	-1,772.17	1,785.08	1,712.46	24.583
3,000.00	2,986.85	2,959.95	2,959.39	10.36	64.45	77.52	-488.54	-1,772.17	1,782.07	1,707.26	23.822
3,100.00	3,085.95	3,059.52	3,058.95	10.72	66.31	77.93	-488.79	-1,772.17	1,779.23	1,702.20	23.098
3,200.00	3,185.05	3,158.62	3,158.05	11.09	68.24	78.35	-488.79	-1,772.17	1,776.45	1,697.13	22.394
3,300.00	3,284.15	3,256.65	3,256.07	11.46	70.15	78.77	-488.57	-1,772.17	1,773.74	1,692.14	21.736
3,400.00	3,383.24	3,356.84	3,356.24	11.82	72.21	79.19	-488.79	-1,772.17	1,771.19	1,687.16	21.078
3,500.00	3,482.34	3,455.93	3,455.34	12.19	74.32	79.61	-488.79	-1,772.17	1,768.70	1,682.20	20.446
3,600.00	3,581.44	3,554.67	3,554.07	12.56	76.42	80.05	-488.18	-1,772.17	1,766.24	1,677.27	19.851
3,700.00	3,680.54	3,653.20	3,652.60	12.93	78.52	80.47	-488.52	-1,772.17	1,764.00	1,672.55	19.291
3,800.00	3,779.64	3,753.29	3,752.64	13.30	80.60	80.89	-488.79	-1,772.17	1,761.83	1,667.94	18.764
3,900.00	3,878.73	3,852.27	3,851.61	13.67	82.62	81.34	-488.02	-1,772.17	1,759.67	1,663.39	18.276
4,000.00	3,977.83	3,950.30	3,949.63	14.03	84.62	81.75	-488.46	-1,772.17	1,757.72	1,659.07	17.818
4,100.00	4,076.93	4,050.62	4,049.93	14.40	86.55	82.17	-488.79	-1,772.17	1,755.86	1,654.91	17.393
4,200.00	4,176.03	4,149.72	4,149.03	14.77	88.40	82.60	-488.79	-1,772.17	1,754.07	1,650.89	17.001
4,300.00	4,275.13	4,248.58	4,247.88	15.14	90.25	83.04	-488.52	-1,772.17	1,752.36	1,646.97	16.628
4,400.00	4,374.22	4,347.94	4,347.22	15.52	92.10	83.46	-488.79	-1,772.17	1,750.79	1,643.17	16.269
4,500.00	4,473.32	4,447.03	4,446.32	15.89	93.96	83.90	-488.79	-1,772.17	1,749.30	1,639.46	15.926
4,600.00	4,572.42	4,545.91	4,545.20	16.26	95.81	84.34	-488.45	-1,772.17	1,747.90	1,635.84	15.598
4,700.00	4,671.52	4,645.25	4,644.52	16.63	97.69	84.76	-488.79	-1,772.17	1,746.63	1,632.31	15.279
4,786.71	4,757.45	4,711.00	4,710.26	16.95	98.98	85.05	-488.79	-1,772.17	1,745.71	1,629.79	15.059 CC, ES
4,800.00	4,770.62	4,711.00	4,710.26	17.00	98.98	85.05	-488.79	-1,772.17	1,745.76	1,629.80	15.055 SF
4,900.00	4,869.71	4,711.00	4,710.26	17.37	98.98	85.05	-488.79	-1,772.17	1,749.38	1,633.35	15.076
5,000.00	4,968.81	4,711.00	4,710.26	17.74	98.98	85.05	-488.79	-1,772.17	1,758.69	1,642.93	15.192
5,100.00	5,067.91	4,711.00	4,710.26	18.11	98.98	85.05	-488.79	-1,772.17	1,773.60	1,658.45	15.403
5,200.00	5,167.01	4,711.00	4,710.26	18.49	98.98	85.05	-488.79	-1,772.17	1,793.97	1,679.74	15.706
5,300.00	5,266.11	4,711.00	4,710.26	18.86	98.98	85.05	-488.79	-1,772.17	1,819.61	1,706.60	16.101
5,400.00	5,365.21	4,711.00	4,710.26	19.23	98.98	85.05	-488.79	-1,772.17	1,850.31	1,738.75	16.587
5,500.00	5,464.30	4,711.00	4,710.26	19.60	98.98	85.05	-488.79	-1,772.17	1,885.81	1,775.93	17.162
5,600.00	5,563.40	4,711.00	4,710.26	19.98	98.98	85.05	-488.79	-1,772.17	1,925.86	1,817.81	17.824
5,700.00	5,662.50	4,711.00	4,710.26	20.35	98.98	85.05	-488.79	-1,772.17	1,970.18	1,864.10	18.572
5,800.00	5,761.60	4,711.00	4,710.26	20.72	98.98	85.05	-488.79	-1,772.17	2,018.48	1,914.46	19.405
5,900.00	5,860.70	4,711.00	4,710.26	21.09	98.98	85.05	-488.79	-1,772.17	2,070.49	1,968.59	20.319
6,000.00	5,959.79	4,711.00	4,710.26	21.47	98.98	85.05	-488.79	-1,772.17	2,125.93	2,026.18	21.314
6,100.00	6,058.89	4,711.00	4,710.26	21.84	98.98	85.05	-488.79	-1,772.17	2,184.54	2,086.96	22.386
6,200.00	6,157.99	4,711.00	4,710.26	22.21	98.98	85.05	-488.79	-1,772.17	2,246.08	2,150.65	23.535
6,300.00	6,257.09	4,711.00	4,710.26	22.58	98.98	85.05	-488.79	-1,772.17	2,310.31	2,216.99	24.757

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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				Rule Assigned:									Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance			Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor	
5,000.00	4,968.81	4,957.99	4,956.81	17.74	113.53	140.20	2,163.03	-1,949.44	3,262.30	3,131.28	131.01	24.900	CC, ES	
5,100.00	5,067.91	5,057.09	5,055.91	18.11	116.42	140.34	2,163.03	-1,949.44	3,272.64	3,138.37	134.27	24.374		
5,200.00	5,167.01	5,156.19	5,155.01	18.49	119.31	140.49	2,163.03	-1,949.44	3,283.01	3,145.49	137.52	23.874		
5,300.00	5,266.11	5,279.96	5,278.70	18.86	122.92	140.70	2,164.93	-1,949.44	3,295.03	3,153.54	141.49	23.288		
5,400.00	5,365.21	5,406.32	5,405.02	19.23	126.61	140.87	2,163.14	-1,949.44	3,304.30	3,158.76	145.53	22.705		
5,500.00	5,464.30	5,453.79	5,452.30	19.60	127.82	140.93	2,163.03	-1,949.44	3,314.23	3,167.12	147.11	22.529		
5,600.00	5,563.40	5,552.88	5,551.40	19.98	130.32	141.08	2,163.03	-1,949.44	3,324.69	3,174.72	149.97	22.169		
5,700.00	5,662.50	5,651.98	5,650.50	20.35	132.82	141.22	2,163.03	-1,949.44	3,335.16	3,182.33	152.83	21.823		
5,800.00	5,761.60	5,769.55	5,768.02	20.72	135.78	141.41	2,164.56	-1,949.44	3,346.96	3,190.80	156.16	21.433		
5,900.00	5,860.70	5,889.09	5,887.54	21.09	138.79	141.57	2,163.32	-1,949.44	3,356.63	3,197.10	159.53	21.041		
6,000.00	5,959.79	5,949.45	5,947.79	21.47	140.19	141.65	2,163.03	-1,949.44	3,366.70	3,205.42	161.28	20.874		
6,100.00	6,058.89	6,048.55	6,046.89	21.84	142.38	141.79	2,163.03	-1,949.44	3,377.26	3,213.42	163.84	20.613		
6,200.00	6,157.99	6,147.64	6,145.99	22.21	144.58	141.93	2,163.03	-1,949.44	3,387.84	3,221.44	166.39	20.360		
6,300.00	6,257.09	6,259.55	6,257.87	22.58	147.05	142.10	2,164.15	-1,949.44	3,399.38	3,230.14	169.24	20.086		
6,400.00	6,356.19	6,372.86	6,371.17	22.96	149.56	142.25	2,163.35	-1,949.44	3,409.42	3,237.31	172.11	19.810		
6,500.00	6,455.28	6,445.03	6,443.28	23.33	151.20	142.34	2,163.03	-1,949.44	3,419.68	3,245.58	174.10	19.642		
6,600.00	6,554.38	6,544.13	6,542.38	23.70	153.50	142.48	2,163.03	-1,949.44	3,430.34	3,253.58	176.76	19.407		
6,700.00	6,653.48	6,643.23	6,641.48	24.08	155.79	142.62	2,163.03	-1,949.44	3,441.01	3,261.59	179.42	19.179		
6,800.00	6,752.58	6,752.94	6,751.17	24.45	158.33	142.77	2,163.91	-1,949.44	3,452.45	3,270.13	182.32	18.936		
6,900.00	6,851.68	6,863.48	6,861.70	24.82	160.89	142.92	2,163.29	-1,949.44	3,462.70	3,277.45	185.25	18.692		
7,000.00	6,950.77	6,940.64	6,938.77	25.20	162.82	143.02	2,163.03	-1,949.44	3,473.14	3,285.62	187.53	18.521		
7,100.00	7,049.87	7,039.74	7,037.87	25.57	165.42	143.15	2,163.03	-1,949.44	3,483.89	3,293.40	190.49	18.289		
7,200.00	7,148.97	7,138.84	7,136.97	25.95	168.02	143.28	2,163.03	-1,949.44	3,494.66	3,301.21	193.45	18.065		
7,300.00	7,248.07	7,255.62	7,253.72	26.32	171.08	143.45	2,164.31	-1,949.44	3,506.57	3,309.69	196.88	17.811		
7,340.44	7,288.14	7,303.18	7,301.27	26.47	172.32	143.51	2,163.97	-1,949.44	3,510.69	3,312.41	198.27	17.706		
7,400.00	7,347.23	7,373.35	7,371.43	26.69	174.16	143.63	2,163.24	-1,949.44	3,516.24	3,315.91	200.33	17.552		
7,500.00	7,446.67	7,436.73	7,434.67	27.06	175.92	143.77	2,163.03	-1,949.44	3,524.40	3,321.96	202.44	17.410		
7,600.00	7,546.35	7,536.44	7,534.35	27.42	178.74	143.90	2,163.03	-1,949.44	3,530.82	3,325.20	205.62	17.172		
7,700.00	7,646.20	7,636.35	7,634.20	27.78	181.67	143.99	2,163.03	-1,949.44	3,535.13	3,326.23	208.90	16.923		
7,800.00	7,746.16	7,736.31	7,734.16	28.14	184.61	144.04	2,163.03	-1,949.44	3,537.33	3,325.14	212.19	16.670		
7,853.84	7,800.00	7,790.15	7,788.00	28.32	186.19	-32.47	2,163.03	-1,949.44	3,537.64	3,323.68	213.96	16.534		
7,900.00	7,846.16	7,848.37	7,846.17	28.46	187.90	-32.46	2,165.05	-1,949.44	3,539.37	3,323.55	215.82	16.399		
8,003.88	7,950.04	7,980.47	7,978.24	28.79	191.78	-32.47	2,163.90	-1,949.44	3,538.60	3,318.56	220.04	16.081		
8,017.43	7,963.59	7,997.70	7,995.46	28.84	192.29	-121.48	2,163.66	-1,949.44	3,538.53	3,317.93	220.59	16.041		
8,050.00	7,996.11	8,039.06	8,036.81	28.94	193.50	-121.48	2,162.99	-1,949.44	3,538.97	3,317.05	221.91	15.948		
8,100.00	8,045.71	8,102.15	8,099.87	29.11	195.36	-121.39	2,161.74	-1,949.44	3,541.38	3,317.45	223.92	15.815		
8,150.00	8,094.58	8,085.03	8,082.58	29.27	194.81	-120.89	2,163.03	-1,949.44	3,547.35	3,323.81	223.54	15.869		
8,200.00	8,142.35	8,132.80	8,130.35	29.42	196.16	-120.42	2,163.03	-1,949.44	3,555.11	3,330.06	225.05	15.797		
8,250.00	8,188.66	8,179.11	8,176.66	29.57	197.48	-119.78	2,163.03	-1,949.44	3,565.09	3,338.58	226.52	15.739		
8,300.00	8,233.15	8,223.60	8,221.15	29.71	198.74	-118.98	2,163.03	-1,949.44	3,577.28	3,349.36	227.92	15.695		
8,350.00	8,275.49	8,265.94	8,263.49	29.84	199.94	-117.99	2,163.03	-1,949.44	3,591.63	3,362.37	229.26	15.666		
8,400.00	8,315.35	8,313.37	8,310.87	29.95	201.29	-116.86	2,165.09	-1,949.44	3,609.79	3,379.06	230.73	15.645		
8,450.00	8,352.43	8,360.68	8,358.18	30.05	202.63	-115.57	2,164.89	-1,949.44	3,628.14	3,395.94	232.19	15.625		
8,500.00	8,386.45	8,404.09	8,401.57	30.14	203.87	-114.07	2,164.57	-1,949.44	3,648.37	3,414.83	233.54	15.622	SF	
8,550.00	8,417.14	8,443.25	8,440.73	30.22	204.98	-112.31	2,164.16	-1,949.44	3,670.40	3,435.66	234.75	15.636		
8,600.00	8,444.28	8,477.88	8,475.35	30.28	205.96	-110.27	2,163.70	-1,949.44	3,694.16	3,458.34	235.82	15.665		
8,650.00	8,467.66	8,507.70	8,505.16	30.33	206.81	-107.94	2,163.24	-1,949.44	3,719.52	3,482.77	236.74	15.711		
8,700.00	8,487.10	8,532.50	8,529.94	30.38	207.52	-105.29	2,162.81	-1,949.44	3,746.35	3,508.83	237.52	15.773		
8,750.00	8,502.46	8,552.07	8,549.51	30.42	208.07	-102.32	2,162.43	-1,949.44	3,774.51	3,536.37	238.14	15.850		
8,800.00	8,513.61	8,566.27	8,563.71	30.46	208.47	-99.02	2,162.14	-1,949.44	3,803.81	3,565.22	238.59	15.943		
8,850.00	8,520.47	8,575.00	8,572.43	30.51	208.72	-95.41	2,161.96	-1,949.44	3,834.05	3,595.17	238.89	16.050		
8,903.88	8,523.00	8,578.21	8,575.63	30.57	208.81	-91.23	2,161.89	-1,949.44	3,867.45	3,628.43	239.02	16.180		

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,934.88	8,523.00	8,578.20	8,575.62	30.62	208.81	-91.24	2,161.89	-1,949.44	3,887.05	3,648.01	239.04	16.261	
9,000.00	8,523.00	8,578.19	8,575.61	30.74	208.81	-91.24	2,161.89	-1,949.44	3,928.98	3,689.88	239.10	16.433	
9,100.00	8,523.00	8,578.17	8,575.59	30.97	208.81	-91.24	2,161.89	-1,949.44	3,994.57	3,755.38	239.19	16.700	
9,200.00	8,523.00	8,578.15	8,575.58	31.26	208.81	-91.24	2,161.89	-1,949.44	4,061.57	3,822.27	239.30	16.973	
9,300.00	8,523.00	8,578.13	8,575.56	31.58	208.81	-91.24	2,161.89	-1,949.44	4,129.90	3,890.48	239.42	17.250	
9,400.00	8,523.00	8,578.11	8,575.54	31.95	208.81	-91.24	2,161.89	-1,949.44	4,199.50	3,959.95	239.55	17.531	
9,500.00	8,523.00	8,578.10	8,575.52	32.35	208.81	-91.24	2,161.89	-1,949.44	4,270.31	4,030.62	239.68	17.816	
9,600.00	8,523.00	8,578.08	8,575.50	32.78	208.81	-91.24	2,161.89	-1,949.44	4,342.26	4,102.43	239.83	18.106	
9,700.00	8,523.00	8,578.06	8,575.48	33.25	208.81	-91.24	2,161.89	-1,949.44	4,415.31	4,175.33	239.98	18.399	
9,800.00	8,523.00	8,578.04	8,575.47	33.75	208.81	-91.24	2,161.89	-1,949.44	4,489.40	4,249.26	240.14	18.695	
9,900.00	8,523.00	8,578.02	8,575.45	34.28	208.81	-91.24	2,161.90	-1,949.44	4,564.48	4,324.18	240.30	18.995	
10,000.00	8,523.00	8,578.00	8,575.43	34.83	208.81	-91.23	2,161.90	-1,949.44	4,640.49	4,400.03	240.46	19.298	
10,100.00	8,523.00	8,577.99	8,575.41	35.42	208.81	-91.23	2,161.90	-1,949.44	4,717.41	4,476.78	240.63	19.605	
10,200.00	8,523.00	8,577.97	8,575.39	36.03	208.81	-91.23	2,161.90	-1,949.44	4,795.17	4,554.37	240.80	19.914	
10,300.00	8,523.00	8,577.95	8,575.37	36.66	208.81	-91.23	2,161.90	-1,949.44	4,873.74	4,632.78	240.97	20.226	
10,400.00	8,523.00	8,577.93	8,575.36	37.32	208.81	-91.23	2,161.90	-1,949.44	4,953.09	4,711.96	241.14	20.541	
10,500.00	8,523.00	8,577.91	8,575.34	37.99	208.81	-91.23	2,161.90	-1,949.44	5,033.17	4,791.87	241.31	20.858	
10,600.00	8,523.00	8,577.89	8,575.32	38.69	208.80	-91.23	2,161.90	-1,949.44	5,113.96	4,872.48	241.48	21.178	
10,700.00	8,523.00	8,577.88	8,575.30	39.41	208.80	-91.23	2,161.90	-1,949.44	5,195.41	4,953.76	241.65	21.500	
10,800.00	8,523.00	8,577.86	8,575.28	40.15	208.80	-91.23	2,161.90	-1,949.44	5,277.50	5,035.69	241.82	21.824	
10,900.00	8,523.00	8,577.84	8,575.26	40.90	208.80	-91.23	2,161.90	-1,949.44	5,360.20	5,118.22	241.99	22.151	
11,000.00	8,523.00	8,577.82	8,575.25	41.67	208.80	-91.23	2,161.90	-1,949.44	5,443.48	5,201.33	242.15	22.479	
11,100.00	8,523.00	8,577.80	8,575.23	42.46	208.80	-91.23	2,161.90	-1,949.44	5,527.32	5,285.00	242.32	22.810	
11,200.00	8,523.00	8,577.79	8,575.21	43.26	208.80	-91.23	2,161.90	-1,949.44	5,611.68	5,369.20	242.49	23.142	
11,300.00	8,523.00	8,577.77	8,575.19	44.08	208.80	-91.23	2,161.90	-1,949.44	5,696.55	5,453.90	242.65	23.476	
11,400.00	8,523.00	8,577.75	8,575.17	44.90	208.80	-91.23	2,161.90	-1,949.44	5,781.91	5,539.09	242.81	23.812	
11,500.00	8,523.00	8,577.73	8,575.16	45.75	208.80	-91.23	2,161.90	-1,949.44	5,867.72	5,624.75	242.97	24.150	
11,600.00	8,523.00	8,577.71	8,575.14	46.60	208.80	-91.23	2,161.90	-1,949.44	5,953.98	5,710.85	243.13	24.489	
11,700.00	8,523.00	8,577.69	8,575.12	47.46	208.80	-91.23	2,161.90	-1,949.44	6,040.66	5,797.38	243.29	24.829	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
3,100.00	3,085.95	3,076.95	3,076.95	10.72	194.36	114.70	2,153.09	-4,404.92	4,991.65	4,786.59	205.05	24.343	CC		
3,200.00	3,185.05	3,176.05	3,176.05	11.09	200.62	114.84	2,153.09	-4,404.92	4,997.30	4,785.63	211.68	23.608			
3,300.00	3,284.15	3,275.15	3,275.15	11.46	206.87	114.98	2,153.09	-4,404.92	5,002.99	4,784.69	218.30	22.918			
3,400.00	3,383.24	3,374.24	3,374.24	11.82	213.13	115.12	2,153.09	-4,404.92	5,008.71	4,783.78	224.92	22.269			
3,500.00	3,482.34	3,473.34	3,473.34	12.19	219.39	115.26	2,153.09	-4,404.92	5,014.45	4,782.90	231.55	21.656			
3,600.00	3,581.44	3,572.44	3,572.44	12.56	225.65	115.39	2,153.09	-4,404.92	5,020.22	4,782.05	238.17	21.078			
3,700.00	3,680.54	3,671.54	3,671.54	12.93	231.91	115.53	2,153.09	-4,404.92	5,026.03	4,781.23	244.80	20.531			
3,800.00	3,779.64	3,770.64	3,770.64	13.30	238.17	115.67	2,153.09	-4,404.92	5,031.86	4,780.44	251.42	20.014			
3,900.00	3,878.73	3,869.73	3,869.73	13.67	244.43	115.80	2,153.09	-4,404.92	5,037.72	4,779.68	258.05	19.523			
4,000.00	3,977.83	3,968.83	3,968.83	14.03	250.69	115.94	2,153.09	-4,404.92	5,043.61	4,778.94	264.67	19.056			
4,100.00	4,076.93	4,067.93	4,067.93	14.40	256.95	116.07	2,153.09	-4,404.92	5,049.53	4,778.23	271.30	18.613			
4,200.00	4,176.03	4,167.03	4,167.03	14.77	263.21	116.21	2,153.09	-4,404.92	5,055.48	4,777.56	277.92	18.190			
4,300.00	4,275.13	4,266.13	4,266.13	15.14	269.47	116.35	2,153.09	-4,404.92	5,061.46	4,776.91	284.55	17.788			
4,400.00	4,374.22	4,365.22	4,365.22	15.52	275.73	116.48	2,153.09	-4,404.92	5,067.46	4,776.28	291.18	17.403			
4,500.00	4,473.32	4,464.32	4,464.32	15.89	281.99	116.61	2,153.09	-4,404.92	5,073.49	4,775.69	297.80	17.036			
4,600.00	4,572.42	4,563.42	4,563.42	16.26	288.25	116.75	2,153.09	-4,404.92	5,079.55	4,775.12	304.43	16.685			
4,700.00	4,671.52	4,662.52	4,662.52	16.63	294.51	116.88	2,153.09	-4,404.92	5,085.64	4,774.59	311.06	16.350			
4,800.00	4,770.62	4,761.62	4,761.62	17.00	300.77	117.02	2,153.09	-4,404.92	5,091.76	4,774.08	317.68	16.028			
4,900.00	4,869.71	4,860.71	4,860.71	17.37	307.03	117.15	2,153.09	-4,404.92	5,097.90	4,773.59	324.31	15.719			
5,000.00	4,968.81	4,959.81	4,959.81	17.74	313.29	117.28	2,153.09	-4,404.92	5,104.08	4,773.14	330.94	15.423			
5,100.00	5,067.91	5,058.91	5,058.91	18.11	319.55	117.41	2,153.09	-4,404.92	5,110.28	4,772.71	337.56	15.139			
5,200.00	5,167.01	5,158.01	5,158.01	18.49	325.81	117.55	2,153.09	-4,404.92	5,116.50	4,772.31	344.19	14.865			
5,300.00	5,266.11	5,257.11	5,257.11	18.86	332.07	117.68	2,153.09	-4,404.92	5,122.76	4,771.94	350.82	14.602			
5,400.00	5,365.21	5,356.21	5,356.21	19.23	338.32	117.81	2,153.09	-4,404.92	5,129.04	4,771.60	357.45	14.349			
5,500.00	5,464.30	5,455.30	5,455.30	19.60	344.58	117.94	2,153.09	-4,404.92	5,135.35	4,771.28	364.07	14.105			
5,600.00	5,563.40	5,554.40	5,554.40	19.98	350.84	118.07	2,153.09	-4,404.92	5,141.69	4,770.99	370.70	13.870			
5,700.00	5,662.50	5,653.50	5,653.50	20.35	357.10	118.20	2,153.09	-4,404.92	5,148.05	4,770.73	377.33	13.643			
5,800.00	5,761.60	5,752.60	5,752.60	20.72	363.36	118.33	2,153.09	-4,404.92	5,154.45	4,770.49	383.96	13.425			
5,900.00	5,860.70	5,851.70	5,851.70	21.09	369.62	118.46	2,153.09	-4,404.92	5,160.86	4,770.28	390.58	13.213			
6,000.00	5,959.79	5,950.79	5,950.79	21.47	375.88	118.59	2,153.09	-4,404.92	5,167.31	4,770.10	397.21	13.009			
6,100.00	6,058.89	6,049.89	6,049.89	21.84	382.14	118.72	2,153.09	-4,404.92	5,173.78	4,769.94	403.84	12.811			
6,200.00	6,157.99	6,148.99	6,148.99	22.21	388.40	118.85	2,153.09	-4,404.92	5,180.28	4,769.81	410.47	12.620			
6,300.00	6,257.09	6,248.09	6,248.09	22.58	394.66	118.98	2,153.09	-4,404.92	5,186.80	4,769.71	417.09	12.436	ES		
6,400.00	6,356.19	6,300.00	6,292.04	22.96	397.94	119.04	2,153.09	-4,404.92	5,193.65	4,772.94	420.71	12.345	SF		
6,500.00	6,455.28	6,300.00	6,292.04	23.33	397.94	119.04	2,153.09	-4,404.92	5,202.22	4,781.32	420.90	12.360			
6,600.00	6,554.38	6,300.00	6,292.04	23.70	397.94	119.04	2,153.09	-4,404.92	5,212.70	4,791.75	420.94	12.383			
6,700.00	6,653.48	6,300.00	6,292.04	24.08	397.94	119.04	2,153.09	-4,404.92	5,225.06	4,804.23	420.83	12.416			
6,800.00	6,752.58	6,300.00	6,292.04	24.45	397.94	119.04	2,153.09	-4,404.92	5,239.31	4,818.73	420.58	12.457			
6,900.00	6,851.68	6,300.00	6,292.04	24.82	397.94	119.04	2,153.09	-4,404.92	5,255.43	4,835.24	420.18	12.507			
7,000.00	6,950.77	6,300.00	6,292.04	25.20	397.94	119.04	2,153.09	-4,404.92	5,273.39	4,853.74	419.65	12.566			
7,100.00	7,049.87	6,300.00	6,292.04	25.57	397.94	119.04	2,153.09	-4,404.92	5,293.18	4,874.20	418.98	12.634			
7,200.00	7,148.97	6,300.00	6,292.04	25.95	397.94	119.04	2,153.09	-4,404.92	5,314.78	4,896.60	418.17	12.710			
7,300.00	7,248.07	6,300.00	6,292.04	26.32	397.94	119.04	2,153.09	-4,404.92	5,338.16	4,920.92	417.24	12.794			
7,340.44	7,288.14	6,300.00	6,292.04	26.47	397.94	119.04	2,153.09	-4,404.92	5,348.12	4,931.29	416.83	12.831			
7,400.00	7,347.23	6,300.00	6,292.04	26.69	397.94	119.24	2,153.09	-4,404.92	5,363.09	4,946.91	416.18	12.886			
7,500.00	7,446.67	6,300.00	6,292.04	27.06	397.94	119.59	2,153.09	-4,404.92	5,388.63	4,973.63	415.00	12.985			
7,600.00	7,546.35	6,300.00	6,292.04	27.42	397.94	119.94	2,153.09	-4,404.92	5,414.65	5,000.97	413.68	13.089			
7,700.00	7,646.20	6,300.00	6,292.04	27.78	397.94	120.29	2,153.09	-4,404.92	5,441.13	5,028.89	412.24	13.199			
7,800.00	7,746.16	6,300.00	6,292.04	28.14	397.94	120.65	2,153.09	-4,404.92	5,468.04	5,057.37	410.68	13.315			
7,853.84	7,800.00	6,300.00	6,292.04	28.32	397.94	-55.67	2,153.09	-4,404.92	5,482.70	5,072.92	409.78	13.380			
7,900.00	7,846.16	6,300.00	6,292.04	28.46	397.94	-55.67	2,153.09	-4,404.92	5,495.50	5,086.53	408.98	13.437			
8,003.88	7,950.04	6,300.00	6,292.04	28.79	397.94	-55.67	2,153.09	-4,404.92	5,525.61	5,118.51	407.10	13.573			

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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
Rule Assigned:													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,050.00	7,996.11	6,300.00	6,292.04	28.94	397.94	-143.71	2,153.09	-4,404.92	5,540.97	5,134.73	406.24	13.640	
8,100.00	8,045.71	6,300.00	6,292.04	29.11	397.94	-142.39	2,153.09	-4,404.92	5,561.14	5,155.82	405.33	13.720	
8,150.00	8,094.58	6,300.00	6,292.04	29.27	397.94	-140.72	2,153.09	-4,404.92	5,584.78	5,180.35	404.43	13.809	
8,200.00	8,142.35	6,300.00	6,292.04	29.42	397.94	-138.65	2,153.09	-4,404.92	5,611.66	5,208.09	403.56	13.905	
8,250.00	8,188.66	6,300.00	6,292.04	29.57	397.94	-136.13	2,153.09	-4,404.92	5,641.53	5,238.79	402.74	14.008	
8,300.00	8,233.15	6,300.00	6,292.04	29.71	397.94	-133.07	2,153.09	-4,404.92	5,674.13	5,272.16	401.96	14.116	
8,350.00	8,275.49	6,300.00	6,292.04	29.84	397.94	-129.37	2,153.09	-4,404.92	5,709.15	5,307.90	401.25	14.228	
8,400.00	8,315.35	6,300.00	6,292.04	29.95	397.94	-124.95	2,153.09	-4,404.92	5,746.30	5,345.69	400.61	14.344	
8,450.00	8,352.43	6,300.00	6,292.04	30.05	397.94	-119.70	2,153.09	-4,404.92	5,785.25	5,385.20	400.05	14.461	
8,500.00	8,386.45	6,300.00	6,292.04	30.14	397.94	-113.56	2,153.09	-4,404.92	5,825.66	5,426.09	399.58	14.580	
8,550.00	8,417.14	6,300.00	6,292.04	30.22	397.94	-106.54	2,153.09	-4,404.92	5,867.22	5,468.02	399.20	14.698	
8,600.00	8,444.28	6,300.00	6,292.04	30.28	397.94	-98.77	2,153.09	-4,404.92	5,909.57	5,510.65	398.92	14.814	
8,650.00	8,467.66	6,300.00	6,292.04	30.33	397.94	-90.52	2,153.09	-4,404.92	5,952.39	5,553.65	398.74	14.928	
8,700.00	8,487.10	6,300.00	6,292.04	30.38	397.94	-82.16	2,153.09	-4,404.92	5,995.33	5,596.67	398.66	15.039	
8,750.00	8,502.46	6,300.00	6,292.04	30.42	397.94	-74.09	2,153.09	-4,404.92	6,038.08	5,639.39	398.69	15.145	
8,800.00	8,513.61	6,300.00	6,292.04	30.46	397.94	-66.66	2,153.09	-4,404.92	6,080.32	5,681.50	398.83	15.246	
8,850.00	8,520.47	6,300.00	6,292.04	30.51	397.94	-60.06	2,153.09	-4,404.92	6,121.74	5,722.68	399.06	15.340	
8,903.88	8,523.00	6,300.00	6,292.04	30.57	397.94	-53.93	2,153.09	-4,404.92	6,165.12	5,765.69	399.43	15.435	
8,934.88	8,523.00	6,300.00	6,292.04	30.62	397.94	-53.45	2,153.09	-4,404.92	6,189.75	5,790.07	399.67	15.487	
9,000.00	8,523.00	6,300.00	6,292.04	30.74	397.94	-53.45	2,153.09	-4,404.92	6,241.83	5,841.64	400.19	15.597	
9,100.00	8,523.00	6,300.00	6,292.04	30.97	397.94	-53.45	2,153.09	-4,404.92	6,322.28	5,921.32	400.96	15.768	
9,200.00	8,523.00	6,300.00	6,292.04	31.26	397.94	-53.45	2,153.09	-4,404.92	6,403.29	6,001.56	401.72	15.940	
9,300.00	8,523.00	6,300.00	6,292.04	31.58	397.94	-53.45	2,153.09	-4,404.92	6,484.82	6,082.35	402.47	16.113	
9,400.00	8,523.00	6,300.00	6,292.04	31.95	397.94	-53.45	2,153.09	-4,404.92	6,566.87	6,163.67	403.20	16.287	
9,500.00	8,523.00	6,300.00	6,292.04	32.35	397.94	-53.45	2,153.09	-4,404.92	6,649.40	6,245.49	403.91	16.462	
9,600.00	8,523.00	6,300.00	6,292.04	32.78	397.94	-53.45	2,153.09	-4,404.92	6,732.41	6,327.80	404.61	16.639	
9,700.00	8,523.00	6,300.00	6,292.04	33.25	397.94	-53.45	2,153.09	-4,404.92	6,815.88	6,410.58	405.30	16.817	
9,800.00	8,523.00	6,300.00	6,292.04	33.75	397.94	-53.45	2,153.09	-4,404.92	6,899.79	6,493.82	405.97	16.996	
9,900.00	8,523.00	6,300.00	6,292.04	34.28	397.94	-53.45	2,153.09	-4,404.92	6,984.12	6,577.49	406.63	17.176	
10,000.00	8,523.00	6,300.00	6,292.04	34.83	397.94	-53.45	2,153.09	-4,404.92	7,068.85	6,661.59	407.27	17.357	
10,100.00	8,523.00	6,300.00	6,292.04	35.42	397.94	-53.45	2,153.09	-4,404.92	7,153.99	6,746.09	407.90	17.539	
10,200.00	8,523.00	6,300.00	6,292.04	36.03	397.94	-53.45	2,153.09	-4,404.92	7,239.50	6,830.99	408.51	17.722	
10,300.00	8,523.00	6,300.00	6,292.04	36.66	397.94	-53.45	2,153.09	-4,404.92	7,325.38	6,916.26	409.12	17.905	
10,400.00	8,523.00	6,300.00	6,292.04	37.32	397.94	-53.45	2,153.09	-4,404.92	7,411.61	7,001.91	409.70	18.090	
10,500.00	8,523.00	6,300.00	6,292.04	37.99	397.94	-53.45	2,153.09	-4,404.92	7,498.19	7,087.91	410.28	18.276	
10,600.00	8,523.00	6,300.00	6,292.04	38.69	397.94	-53.45	2,153.09	-4,404.92	7,585.10	7,174.25	410.85	18.462	
10,700.00	8,523.00	6,300.00	6,292.04	39.41	397.94	-53.45	2,153.09	-4,404.92	7,672.32	7,260.92	411.40	18.649	
10,800.00	8,523.00	6,300.00	6,292.04	40.15	397.94	-53.45	2,153.09	-4,404.92	7,759.85	7,347.92	411.94	18.837	
10,900.00	8,523.00	6,300.00	6,292.04	40.90	397.94	-53.45	2,153.09	-4,404.92	7,847.69	7,435.22	412.47	19.026	
11,000.00	8,523.00	6,300.00	6,292.04	41.67	397.94	-53.45	2,153.09	-4,404.92	7,935.81	7,522.82	412.98	19.216	
11,100.00	8,523.00	6,300.00	6,292.04	42.46	397.94	-53.45	2,153.09	-4,404.92	8,024.20	7,610.71	413.49	19.406	
11,200.00	8,523.00	6,300.00	6,292.04	43.26	397.94	-53.45	2,153.09	-4,404.92	8,112.87	7,698.88	413.99	19.597	
11,300.00	8,523.00	6,300.00	6,292.04	44.08	397.94	-53.45	2,153.09	-4,404.92	8,201.80	7,787.33	414.47	19.789	
11,400.00	8,523.00	6,300.00	6,292.04	44.90	397.94	-53.45	2,153.09	-4,404.92	8,290.98	7,876.03	414.95	19.981	
11,500.00	8,523.00	6,300.00	6,292.04	45.75	397.94	-53.45	2,153.09	-4,404.92	8,380.40	7,964.99	415.41	20.174	
11,600.00	8,523.00	6,300.00	6,292.04	46.60	397.94	-53.45	2,153.09	-4,404.92	8,470.06	8,054.19	415.87	20.367	
11,700.00	8,523.00	6,300.00	6,292.04	47.46	397.94	-53.45	2,153.09	-4,404.92	8,559.95	8,143.64	416.32	20.561	
11,800.00	8,523.00	6,300.00	6,292.04	48.34	397.94	-53.45	2,153.09	-4,404.92	8,650.07	8,233.31	416.75	20.756	
11,900.00	8,523.00	6,300.00	6,292.04	49.22	397.94	-53.45	2,153.09	-4,404.92	8,740.39	8,323.21	417.18	20.951	
12,000.00	8,523.00	6,300.00	6,292.04	50.12	397.94	-53.45	2,153.09	-4,404.92	8,830.93	8,413.33	417.60	21.147	
12,100.00	8,523.00	6,300.00	6,292.04	51.02	397.94	-53.45	2,153.09	-4,404.92	8,921.67	8,503.65	418.02	21.343	
12,200.00	8,523.00	6,300.00	6,292.04	51.93	397.94	-53.45	2,153.09	-4,404.92	9,012.60	8,594.18	418.42	21.540	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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							Rule Assigned:						Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,300.00	8,523.00	6,300.00	6,292.04	52.85	397.94	-53.45	2,153.09	-4,404.92	9,103.72	8,684.91	418.82	21.737	
12,400.00	8,523.00	6,300.00	6,292.04	53.78	397.94	-53.45	2,153.09	-4,404.92	9,195.03	8,775.83	419.20	21.934	
12,500.00	8,523.00	6,300.00	6,292.04	54.71	397.94	-53.45	2,153.09	-4,404.92	9,286.52	8,866.93	419.59	22.133	
12,600.00	8,523.00	6,300.00	6,292.04	55.66	397.94	-53.45	2,153.09	-4,404.92	9,378.18	8,958.22	419.96	22.331	
12,700.00	8,523.00	6,300.00	6,292.04	56.60	397.94	-53.45	2,153.09	-4,404.92	9,470.01	9,049.68	420.33	22.530	
12,800.00	8,523.00	6,300.00	6,292.04	57.56	397.94	-53.45	2,153.09	-4,404.92	9,562.00	9,141.32	420.69	22.729	
12,900.00	8,523.00	6,300.00	6,292.04	58.52	397.94	-53.45	2,153.09	-4,404.92	9,654.16	9,233.12	421.04	22.929	
13,000.00	8,523.00	6,300.00	6,292.04	59.48	397.94	-53.45	2,153.09	-4,404.92	9,746.47	9,325.08	421.39	23.129	
13,100.00	8,523.00	6,300.00	6,292.04	60.46	397.94	-53.45	2,153.09	-4,404.92	9,838.92	9,417.19	421.73	23.330	
13,200.00	8,523.00	6,300.00	6,292.04	61.43	397.94	-53.45	2,153.09	-4,404.92	9,931.53	9,509.46	422.07	23.531	
13,300.00	8,523.00	6,300.00	6,292.04	62.41	397.94	-53.45	2,153.09	-4,404.92	10,024.27	9,601.88	422.40	23.732	
13,400.00	8,523.00	6,300.00	6,292.04	63.40	397.94	-53.45	2,153.09	-4,404.92	10,117.16	9,694.44	422.72	23.933	
13,500.00	8,523.00	6,300.00	6,292.04	64.39	397.94	-53.45	2,153.09	-4,404.92	10,210.18	9,787.14	423.04	24.135	
13,600.00	8,523.00	6,300.00	6,292.04	65.39	397.94	-53.45	2,153.09	-4,404.92	10,303.33	9,879.97	423.35	24.337	
13,700.00	8,523.00	6,300.00	6,292.04	66.39	397.94	-53.45	2,153.09	-4,404.92	10,396.61	9,972.94	423.66	24.540	
13,800.00	8,523.00	6,300.00	6,292.04	67.39	397.94	-53.45	2,153.09	-4,404.92	10,490.01	10,066.04	423.97	24.743	
13,900.00	8,523.00	6,300.00	6,292.04	68.39	397.94	-53.45	2,153.09	-4,404.92	10,583.53	10,159.26	424.26	24.946	



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	Offset	Rule Assigned:											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
1,100.00	1,100.00	1,067.00	1,067.00	3.71	67.40	-106.30	-488.66	-1,671.11	1,741.09	1,669.99	71.11	24.485	
1,200.00	1,200.00	1,167.00	1,167.00	4.07	73.71	-106.30	-488.66	-1,671.11	1,741.09	1,663.31	77.78	22.384	
1,300.00	1,299.99	1,266.99	1,266.99	4.41	80.03	70.26	-488.66	-1,671.11	1,740.65	1,656.21	84.44	20.614	
1,400.00	1,399.91	1,366.91	1,366.91	4.74	86.34	70.40	-488.66	-1,671.11	1,739.33	1,648.25	91.08	19.098	
1,500.00	1,499.69	1,466.69	1,466.69	5.07	92.64	70.64	-488.66	-1,671.11	1,737.14	1,639.44	97.71	17.779	
1,600.00	1,599.27	1,566.27	1,566.27	5.40	98.93	70.96	-488.66	-1,671.11	1,734.12	1,629.79	104.33	16.621	
1,700.00	1,698.57	1,665.57	1,665.57	5.74	105.21	71.38	-488.66	-1,671.11	1,730.31	1,619.37	110.94	15.597	
1,713.40	1,711.86	1,678.86	1,678.86	5.79	106.05	71.45	-488.66	-1,671.11	1,729.74	1,617.91	111.83	15.468	
1,800.00	1,797.67	1,764.67	1,764.67	6.08	111.47	71.81	-488.66	-1,671.11	1,726.05	1,608.51	117.54	14.684	
1,900.00	1,896.77	1,863.77	1,863.77	6.42	117.73	72.23	-488.66	-1,671.11	1,721.88	1,597.73	124.15	13.870	
2,000.00	1,995.87	1,962.87	1,962.87	6.77	123.98	72.65	-488.66	-1,671.11	1,717.80	1,587.05	130.75	13.138	
2,100.00	2,094.97	2,061.97	2,061.97	7.12	130.24	73.08	-488.66	-1,671.11	1,713.82	1,576.46	137.36	12.477	
2,200.00	2,194.07	2,161.07	2,161.07	7.48	136.50	73.50	-488.66	-1,671.11	1,709.94	1,565.96	143.98	11.877	
2,300.00	2,293.16	2,260.16	2,260.16	7.83	142.76	73.93	-488.66	-1,671.11	1,706.15	1,555.56	150.59	11.330	
2,400.00	2,392.26	2,359.26	2,359.26	8.19	149.02	74.36	-488.66	-1,671.11	1,702.46	1,545.25	157.21	10.829	
2,500.00	2,491.36	2,458.36	2,458.36	8.55	155.28	74.79	-488.66	-1,671.11	1,698.86	1,535.04	163.82	10.370	
2,600.00	2,590.46	2,557.46	2,557.46	8.91	161.54	75.23	-488.66	-1,671.11	1,695.37	1,524.92	170.44	9.947	
2,700.00	2,689.56	2,656.56	2,656.56	9.27	167.80	75.66	-488.66	-1,671.11	1,691.97	1,514.91	177.06	9.556	
2,800.00	2,788.66	2,755.66	2,755.66	9.63	174.06	76.10	-488.66	-1,671.11	1,688.67	1,504.99	183.69	9.193	
2,900.00	2,887.75	2,854.75	2,854.75	10.00	180.32	76.54	-488.66	-1,671.11	1,685.48	1,495.17	190.31	8.857	
3,000.00	2,986.85	2,953.85	2,953.85	10.36	186.58	76.98	-488.66	-1,671.11	1,682.38	1,485.45	196.93	8.543	
3,100.00	3,085.95	3,052.95	3,052.95	10.72	192.84	77.42	-488.66	-1,671.11	1,679.38	1,475.83	203.56	8.250	
3,200.00	3,185.05	3,152.05	3,152.05	11.09	199.10	77.86	-488.66	-1,671.11	1,676.49	1,466.31	210.18	7.976	
3,300.00	3,284.15	3,251.15	3,251.15	11.46	205.36	78.30	-488.66	-1,671.11	1,673.70	1,456.89	216.81	7.720	
3,400.00	3,383.24	3,350.24	3,350.24	11.82	211.62	78.75	-488.66	-1,671.11	1,671.01	1,447.58	223.43	7.479	
3,500.00	3,482.34	3,449.34	3,449.34	12.19	217.88	79.20	-488.66	-1,671.11	1,668.42	1,438.36	230.06	7.252	
3,600.00	3,581.44	3,548.44	3,548.44	12.56	224.14	79.65	-488.66	-1,671.11	1,665.94	1,429.25	236.69	7.039	
3,700.00	3,680.54	3,647.54	3,647.54	12.93	230.40	80.10	-488.66	-1,671.11	1,663.57	1,420.25	243.32	6.837	
3,800.00	3,779.64	3,746.64	3,746.64	13.30	236.66	80.55	-488.66	-1,671.11	1,661.29	1,411.35	249.94	6.647	
3,900.00	3,878.73	3,845.73	3,845.73	13.67	242.92	81.00	-488.66	-1,671.11	1,659.13	1,402.55	256.57	6.466	
4,000.00	3,977.83	3,944.83	3,944.83	14.03	249.18	81.45	-488.66	-1,671.11	1,657.06	1,393.86	263.20	6.296	
4,100.00	4,076.93	4,043.93	4,043.93	14.40	255.43	81.91	-488.66	-1,671.11	1,655.11	1,385.28	269.83	6.134	
4,200.00	4,176.03	4,143.03	4,143.03	14.77	261.69	82.36	-488.66	-1,671.11	1,653.26	1,376.80	276.46	5.980	
4,300.00	4,275.13	4,242.13	4,242.13	15.14	267.95	82.82	-488.66	-1,671.11	1,651.52	1,368.42	283.09	5.834	
4,400.00	4,374.22	4,341.22	4,341.22	15.52	274.21	83.28	-488.66	-1,671.11	1,649.88	1,360.16	289.72	5.695	
4,500.00	4,473.32	4,440.32	4,440.32	15.89	280.47	83.74	-488.66	-1,671.11	1,648.35	1,352.00	296.35	5.562	
4,600.00	4,572.42	4,539.42	4,539.42	16.26	286.73	84.20	-488.66	-1,671.11	1,646.93	1,343.94	302.98	5.436	
4,700.00	4,671.52	4,638.52	4,638.52	16.63	292.99	84.66	-488.66	-1,671.11	1,645.62	1,336.00	309.62	5.315	
4,800.00	4,770.62	4,737.62	4,737.62	17.00	299.25	85.12	-488.66	-1,671.11	1,644.41	1,328.16	316.25	5.200	
4,900.00	4,869.71	4,836.71	4,836.71	17.37	305.51	85.58	-488.66	-1,671.11	1,643.31	1,320.44	322.88	5.090	
5,000.00	4,968.81	4,935.81	4,935.81	17.74	311.77	86.04	-488.66	-1,671.11	1,642.33	1,312.82	329.51	4.984	
5,100.00	5,067.91	5,034.91	5,034.91	18.11	318.03	86.50	-488.66	-1,671.11	1,641.45	1,305.31	336.14	4.883	
5,200.00	5,167.01	5,134.01	5,134.01	18.49	324.29	86.97	-488.66	-1,671.11	1,640.68	1,297.90	342.77	4.786	
5,300.00	5,266.11	5,233.11	5,233.11	18.86	330.55	87.43	-488.66	-1,671.11	1,640.02	1,290.61	349.41	4.694	
5,400.00	5,365.21	5,332.21	5,332.21	19.23	336.81	87.89	-488.66	-1,671.11	1,639.46	1,283.43	356.04	4.605	
5,500.00	5,464.30	5,431.30	5,431.30	19.60	343.07	88.36	-488.66	-1,671.11	1,639.02	1,276.35	362.67	4.519	
5,600.00	5,563.40	5,530.40	5,530.40	19.98	349.33	88.82	-488.66	-1,671.11	1,638.69	1,269.39	369.30	4.437	
5,700.00	5,662.50	5,629.50	5,629.50	20.35	355.59	89.29	-488.66	-1,671.11	1,638.47	1,262.53	375.93	4.358	
5,800.00	5,761.60	5,728.60	5,728.60	20.72	361.85	89.75	-488.66	-1,671.11	1,638.35	1,255.78	382.57	4.283	
5,853.87	5,814.98	5,781.98	5,781.98	20.92	365.22	90.00	-488.66	-1,671.11	1,638.34	1,252.20	386.14	4.243 CC	
5,900.00	5,860.70	5,827.70	5,827.70	21.09	368.11	90.21	-488.66	-1,671.11	1,638.35	1,249.15	389.20	4.210	
6,000.00	5,959.79	5,926.79	5,926.79	21.47	374.37	90.68	-488.66	-1,671.11	1,638.45	1,242.62	395.83	4.139	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
6,100.00	6,058.89	6,025.89	6,025.89	21.84	380.63	91.14	-488.66	-1,671.11	1,638.67	1,236.20	402.46	4.072	
6,200.00	6,157.99	6,124.99	6,124.99	22.21	386.88	91.61	-488.66	-1,671.11	1,638.99	1,229.90	409.10	4.006	
6,300.00	6,257.09	6,224.09	6,224.09	22.58	393.14	92.07	-488.66	-1,671.11	1,639.43	1,223.70	415.73	3.944	
6,400.00	6,356.19	6,323.19	6,323.19	22.96	399.40	92.53	-488.66	-1,671.11	1,639.97	1,217.61	422.36	3.883	
6,500.00	6,455.28	6,422.28	6,422.28	23.33	405.66	93.00	-488.66	-1,671.11	1,640.62	1,211.63	428.99	3.824	
6,600.00	6,554.38	6,521.38	6,521.38	23.70	411.92	93.46	-488.66	-1,671.11	1,641.38	1,205.76	435.63	3.768	
6,700.00	6,653.48	6,620.48	6,620.48	24.08	418.18	93.92	-488.66	-1,671.11	1,642.25	1,200.00	442.26	3.713	
6,800.00	6,752.58	6,719.58	6,719.58	24.45	424.44	94.39	-488.66	-1,671.11	1,643.23	1,194.34	448.89	3.661	
6,900.00	6,851.68	6,818.68	6,818.68	24.82	430.70	94.85	-488.66	-1,671.11	1,644.32	1,188.80	455.52	3.610	
7,000.00	6,950.77	6,917.77	6,917.77	25.20	436.96	95.31	-488.66	-1,671.11	1,645.52	1,183.37	462.15	3.561	
7,100.00	7,049.87	7,016.87	7,016.87	25.57	443.22	95.77	-488.66	-1,671.11	1,646.82	1,178.04	468.79	3.513	
7,200.00	7,148.97	7,115.97	7,115.97	25.95	449.48	96.23	-488.66	-1,671.11	1,648.24	1,172.82	475.42	3.467	
7,300.00	7,248.07	7,215.07	7,215.07	26.32	455.74	96.69	-488.66	-1,671.11	1,649.76	1,167.71	482.05	3.422	
7,340.44	7,288.14	7,255.14	7,255.14	26.47	458.27	96.87	-488.66	-1,671.11	1,650.40	1,165.67	484.73	3.405	
7,400.00	7,347.23	7,314.23	7,314.23	26.69	462.00	97.14	-488.66	-1,671.11	1,651.33	1,162.64	488.68	3.379	
7,500.00	7,446.67	7,413.67	7,413.67	27.06	468.28	97.52	-488.66	-1,671.11	1,652.68	1,157.35	495.33	3.337 ES	
7,600.00	7,546.35	7,450.00	7,440.59	27.42	470.58	97.64	-488.66	-1,671.11	1,655.34	1,157.84	497.50	3.327 SF	
7,700.00	7,646.20	7,450.00	7,440.59	27.78	470.58	97.77	-488.66	-1,671.11	1,663.46	1,167.80	495.66	3.356	
7,800.00	7,746.16	7,450.00	7,440.59	28.14	470.58	97.97	-488.66	-1,671.11	1,677.16	1,185.04	492.12	3.408	
7,853.84	7,800.00	7,450.00	7,440.59	28.32	470.58	-78.40	-488.66	-1,671.11	1,686.80	1,197.26	489.53	3.446	
7,900.00	7,846.16	7,450.00	7,440.59	28.46	470.58	-78.40	-488.66	-1,671.11	1,696.33	1,209.37	486.96	3.484	
8,003.88	7,950.04	7,450.00	7,440.59	28.79	470.58	-78.40	-488.66	-1,671.11	1,722.13	1,242.05	480.09	3.587	
8,050.00	7,996.11	7,450.00	7,440.59	28.94	470.58	-167.05	-488.66	-1,671.11	1,737.17	1,260.52	476.65	3.645	
8,100.00	8,045.71	7,450.00	7,440.59	29.11	470.58	-166.51	-488.66	-1,671.11	1,758.44	1,285.62	472.82	3.719	
8,150.00	8,094.58	7,450.00	7,440.59	29.27	470.58	-165.78	-488.66	-1,671.11	1,784.54	1,315.54	468.99	3.805	
8,200.00	8,142.35	7,450.00	7,440.59	29.42	470.58	-164.79	-488.66	-1,671.11	1,815.06	1,349.79	465.27	3.901	
8,250.00	8,188.66	7,450.00	7,440.59	29.57	470.58	-163.49	-488.66	-1,671.11	1,849.57	1,387.82	461.76	4.006	
8,300.00	8,233.15	7,450.00	7,440.59	29.71	470.58	-161.74	-488.66	-1,671.11	1,887.59	1,429.05	458.54	4.117	
8,350.00	8,275.49	7,450.00	7,440.59	29.84	470.58	-159.34	-488.66	-1,671.11	1,928.63	1,472.94	455.69	4.232	
8,400.00	8,315.35	7,450.00	7,440.59	29.95	470.58	-155.95	-488.66	-1,671.11	1,972.20	1,518.94	453.26	4.351	
8,450.00	8,352.43	7,450.00	7,440.59	30.05	470.58	-150.95	-488.66	-1,671.11	2,017.82	1,566.53	451.28	4.471	
8,500.00	8,386.45	7,450.00	7,440.59	30.14	470.58	-143.16	-488.66	-1,671.11	2,065.01	1,615.23	449.78	4.591	
8,550.00	8,417.14	7,450.00	7,440.59	30.22	470.58	-130.26	-488.66	-1,671.11	2,113.32	1,664.58	448.75	4.709	
8,600.00	8,444.28	7,450.00	7,440.59	30.28	470.58	-108.79	-488.66	-1,671.11	2,162.33	1,714.14	448.19	4.825	
8,650.00	8,467.66	7,450.00	7,440.59	30.33	470.58	-79.75	-488.66	-1,671.11	2,211.63	1,763.55	448.08	4.936	
8,700.00	8,487.10	7,450.00	7,440.59	30.38	470.58	-54.52	-488.66	-1,671.11	2,260.82	1,812.43	448.39	5.042	
8,750.00	8,502.46	7,450.00	7,440.59	30.42	470.58	-38.63	-488.66	-1,671.11	2,309.57	1,860.47	449.10	5.143	
8,800.00	8,513.61	7,450.00	7,440.59	30.46	470.58	-29.16	-488.66	-1,671.11	2,357.53	1,907.36	450.17	5.237	
8,850.00	8,520.47	7,450.00	7,440.59	30.51	470.58	-23.21	-488.66	-1,671.11	2,404.40	1,952.84	451.56	5.325	
8,903.88	8,523.00	7,450.00	7,440.59	30.57	470.58	-18.98	-488.66	-1,671.11	2,453.37	1,999.99	453.38	5.411	
8,934.88	8,523.00	7,450.00	7,440.59	30.62	470.58	-17.81	-488.66	-1,671.11	2,481.08	2,026.59	454.49	5.459	
9,000.00	8,523.00	7,450.00	7,440.59	30.74	470.58	-17.81	-488.66	-1,671.11	2,539.58	2,082.85	456.73	5.560	
9,100.00	8,523.00	7,450.00	7,440.59	30.97	470.58	-17.81	-488.66	-1,671.11	2,630.03	2,170.15	459.88	5.719	
9,200.00	8,523.00	7,450.00	7,440.59	31.26	470.58	-17.81	-488.66	-1,671.11	2,721.15	2,258.42	462.73	5.881	
9,300.00	8,523.00	7,450.00	7,440.59	31.58	470.58	-17.81	-488.66	-1,671.11	2,812.87	2,347.56	465.31	6.045	
9,400.00	8,523.00	7,450.00	7,440.59	31.95	470.58	-17.81	-488.66	-1,671.11	2,905.13	2,437.49	467.65	6.212	
9,500.00	8,523.00	7,450.00	7,440.59	32.35	470.58	-17.81	-488.66	-1,671.11	2,997.90	2,528.11	469.78	6.381	
9,600.00	8,523.00	7,450.00	7,440.59	32.78	470.58	-17.81	-488.66	-1,671.11	3,091.11	2,619.38	471.73	6.553	
9,700.00	8,523.00	7,450.00	7,440.59	33.25	470.58	-17.81	-488.66	-1,671.11	3,184.74	2,711.22	473.52	6.726	
9,800.00	8,523.00	7,450.00	7,440.59	33.75	470.58	-17.81	-488.66	-1,671.11	3,278.74	2,803.59	475.15	6.900	
9,900.00	8,523.00	7,450.00	7,440.59	34.28	470.58	-17.81	-488.66	-1,671.11	3,373.09	2,896.43	476.66	7.077	
10,000.00	8,523.00	7,450.00	7,440.59	34.83	470.58	-17.81	-488.66	-1,671.11	3,467.75	2,989.70	478.05	7.254	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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					Rule Assigned:				Offset Well Error:		0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,100.00	8,523.00	7,450.00	7,440.59	35.42	470.58	-17.81	-488.66	-1,671.11	3,562.71	3,083.38	479.33	7.433		
10,200.00	8,523.00	7,450.00	7,440.59	36.03	470.58	-17.81	-488.66	-1,671.11	3,657.93	3,177.42	480.52	7.612		
10,300.00	8,523.00	7,450.00	7,440.59	36.66	470.58	-17.81	-488.66	-1,671.11	3,753.41	3,271.79	481.62	7.793		
10,400.00	8,523.00	7,450.00	7,440.59	37.32	470.58	-17.81	-488.66	-1,671.11	3,849.11	3,366.47	482.64	7.975		
10,500.00	8,523.00	7,450.00	7,440.59	37.99	470.58	-17.81	-488.66	-1,671.11	3,945.02	3,461.43	483.59	8.158		
10,600.00	8,523.00	7,450.00	7,440.59	38.69	470.58	-17.81	-488.66	-1,671.11	4,041.14	3,556.66	484.48	8.341		
10,700.00	8,523.00	7,450.00	7,440.59	39.41	470.58	-17.81	-488.66	-1,671.11	4,137.44	3,652.12	485.31	8.525		
10,800.00	8,523.00	7,450.00	7,440.59	40.15	470.58	-17.81	-488.66	-1,671.11	4,233.91	3,747.82	486.09	8.710		
10,900.00	8,523.00	7,450.00	7,440.59	40.90	470.58	-17.81	-488.66	-1,671.11	4,330.54	3,843.72	486.82	8.896		
11,000.00	8,523.00	7,450.00	7,440.59	41.67	470.58	-17.81	-488.66	-1,671.11	4,427.32	3,939.81	487.50	9.082		
11,100.00	8,523.00	7,450.00	7,440.59	42.46	470.58	-17.81	-488.66	-1,671.11	4,524.24	4,036.09	488.15	9.268		
11,200.00	8,523.00	7,450.00	7,440.59	43.26	470.58	-17.81	-488.66	-1,671.11	4,621.29	4,132.53	488.76	9.455		
11,300.00	8,523.00	7,450.00	7,440.59	44.08	470.58	-17.81	-488.66	-1,671.11	4,718.46	4,229.13	489.33	9.643		
11,400.00	8,523.00	7,450.00	7,440.59	44.90	470.58	-17.81	-488.66	-1,671.11	4,815.75	4,325.88	489.87	9.831		
11,500.00	8,523.00	7,450.00	7,440.59	45.75	470.58	-17.81	-488.66	-1,671.11	4,913.15	4,422.77	490.38	10.019		
11,600.00	8,523.00	7,450.00	7,440.59	46.60	470.58	-17.81	-488.66	-1,671.11	5,010.65	4,519.78	490.87	10.208		
11,700.00	8,523.00	7,450.00	7,440.59	47.46	470.58	-17.81	-488.66	-1,671.11	5,108.25	4,616.92	491.33	10.397		
11,800.00	8,523.00	7,450.00	7,440.59	48.34	470.58	-17.81	-488.66	-1,671.11	5,205.94	4,714.17	491.77	10.586		
11,900.00	8,523.00	7,450.00	7,440.59	49.22	470.58	-17.81	-488.66	-1,671.11	5,303.71	4,811.53	492.19	10.776		
12,000.00	8,523.00	7,450.00	7,440.59	50.12	470.58	-17.81	-488.66	-1,671.11	5,401.57	4,908.98	492.59	10.966		
12,100.00	8,523.00	7,450.00	7,440.59	51.02	470.58	-17.81	-488.66	-1,671.11	5,499.50	5,006.54	492.97	11.156		
12,200.00	8,523.00	7,450.00	7,440.59	51.93	470.58	-17.81	-488.66	-1,671.11	5,597.51	5,104.18	493.33	11.346		
12,300.00	8,523.00	7,450.00	7,440.59	52.85	470.58	-17.81	-488.66	-1,671.11	5,695.59	5,201.91	493.68	11.537		
12,400.00	8,523.00	7,450.00	7,440.59	53.78	470.58	-17.81	-488.66	-1,671.11	5,793.73	5,299.72	494.01	11.728		
12,500.00	8,523.00	7,450.00	7,440.59	54.71	470.58	-17.81	-488.66	-1,671.11	5,891.93	5,397.60	494.33	11.919		
12,600.00	8,523.00	7,450.00	7,440.59	55.66	470.58	-17.81	-488.66	-1,671.11	5,990.20	5,495.56	494.64	12.110		
12,700.00	8,523.00	7,450.00	7,440.59	56.60	470.58	-17.81	-488.66	-1,671.11	6,088.52	5,593.58	494.93	12.302		
12,800.00	8,523.00	7,450.00	7,440.59	57.56	470.58	-17.81	-488.66	-1,671.11	6,186.89	5,691.67	495.22	12.493		
12,900.00	8,523.00	7,450.00	7,440.59	58.52	470.58	-17.81	-488.66	-1,671.11	6,285.32	5,789.83	495.49	12.685		
13,000.00	8,523.00	7,450.00	7,440.59	59.48	470.58	-17.81	-488.66	-1,671.11	6,383.79	5,888.04	495.75	12.877		
13,100.00	8,523.00	7,450.00	7,440.59	60.46	470.58	-17.81	-488.66	-1,671.11	6,482.31	5,986.30	496.01	13.069		
13,200.00	8,523.00	7,450.00	7,440.59	61.43	470.58	-17.81	-488.66	-1,671.11	6,580.88	6,084.62	496.26	13.261		
13,300.00	8,523.00	7,450.00	7,440.59	62.41	470.58	-17.81	-488.66	-1,671.11	6,679.49	6,182.99	496.49	13.453		
13,400.00	8,523.00	7,450.00	7,440.59	63.40	470.58	-17.81	-488.66	-1,671.11	6,778.14	6,281.41	496.73	13.646		
13,500.00	8,523.00	7,450.00	7,440.59	64.39	470.58	-17.81	-488.66	-1,671.11	6,876.82	6,379.87	496.95	13.838		
13,600.00	8,523.00	7,450.00	7,440.59	65.39	470.58	-17.81	-488.66	-1,671.11	6,975.55	6,478.38	497.17	14.031		
13,700.00	8,523.00	7,450.00	7,440.59	66.39	470.58	-17.81	-488.66	-1,671.11	7,074.31	6,576.93	497.38	14.223		
13,800.00	8,523.00	7,450.00	7,440.59	67.39	470.58	-17.81	-488.66	-1,671.11	7,173.11	6,675.52	497.59	14.416		
13,900.00	8,523.00	7,450.00	7,440.59	68.39	470.58	-17.81	-488.66	-1,671.11	7,271.93	6,774.15	497.79	14.609		
14,000.00	8,523.00	7,450.00	7,440.59	69.40	470.58	-17.81	-488.66	-1,671.11	7,370.79	6,872.81	497.98	14.801		
14,100.00	8,523.00	7,450.00	7,440.59	70.42	470.58	-17.81	-488.66	-1,671.11	7,469.69	6,971.51	498.17	14.994		
14,200.00	8,523.00	7,450.00	7,440.59	71.43	470.58	-17.81	-488.66	-1,671.11	7,568.60	7,070.25	498.36	15.187		
14,300.00	8,523.00	7,450.00	7,440.59	72.45	470.58	-17.81	-488.66	-1,671.11	7,667.55	7,169.01	498.54	15.380		
14,400.00	8,523.00	7,450.00	7,440.59	73.48	470.58	-17.81	-488.66	-1,671.11	7,766.53	7,267.81	498.72	15.573		
14,500.00	8,523.00	7,450.00	7,440.59	74.50	470.58	-17.81	-488.66	-1,671.11	7,865.53	7,366.63	498.89	15.766		
14,600.00	8,523.00	7,450.00	7,440.59	75.53	470.58	-17.81	-488.66	-1,671.11	7,964.55	7,465.49	499.06	15.959		
14,700.00	8,523.00	7,450.00	7,440.59	76.56	470.58	-17.81	-488.66	-1,671.11	8,063.60	7,564.37	499.23	16.152		
14,800.00	8,523.00	7,450.00	7,440.59	77.60	470.58	-17.81	-488.66	-1,671.11	8,162.68	7,663.28	499.40	16.345		
14,900.00	8,523.00	7,450.00	7,440.59	78.63	470.58	-17.81	-488.66	-1,671.11	8,261.77	7,762.21	499.56	16.538		
15,000.00	8,523.00	7,450.00	7,440.59	79.67	470.58	-17.81	-488.66	-1,671.11	8,360.89	7,861.17	499.72	16.731		
15,100.00	8,523.00	7,450.00	7,440.59	80.71	470.58	-17.81	-488.66	-1,671.11	8,460.03	7,960.15	499.87	16.924		
15,200.00	8,523.00	7,450.00	7,440.59	81.75	470.58	-17.81	-488.66	-1,671.11	8,559.18	8,059.16	500.03	17.117		

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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								Rule Assigned:				Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
15,300.00	8,523.00	7,450.00	7,440.59	82.80	470.58	-17.81	-488.66	-1,671.11	8,658.36	8,158.18	500.18	17.311			
15,400.00	8,523.00	7,450.00	7,440.59	83.84	470.58	-17.81	-488.66	-1,671.11	8,757.56	8,257.23	500.33	17.504			
15,500.00	8,523.00	7,450.00	7,440.59	84.89	470.58	-17.81	-488.66	-1,671.11	8,856.77	8,356.30	500.47	17.697			
15,600.00	8,523.00	7,450.00	7,440.59	85.94	470.58	-17.81	-488.66	-1,671.11	8,956.00	8,455.38	500.62	17.890			
15,700.00	8,523.00	7,450.00	7,440.59	87.00	470.58	-17.81	-488.66	-1,671.11	9,055.25	8,554.49	500.76	18.083			
15,800.00	8,523.00	7,450.00	7,440.59	88.05	470.58	-17.81	-488.66	-1,671.11	9,154.51	8,653.61	500.90	18.276			
15,900.00	8,523.00	7,450.00	7,440.59	89.11	470.58	-17.81	-488.66	-1,671.11	9,253.79	8,752.75	501.04	18.469			
16,000.00	8,523.00	7,450.00	7,440.59	90.16	470.58	-17.81	-488.66	-1,671.11	9,353.09	8,851.91	501.18	18.662			
16,100.00	8,523.00	7,450.00	7,440.59	91.22	470.58	-17.81	-488.66	-1,671.11	9,452.40	8,951.08	501.32	18.855			
16,200.00	8,523.00	7,450.00	7,440.59	92.28	470.58	-17.81	-488.66	-1,671.11	9,551.72	9,050.27	501.45	19.048			
16,300.00	8,523.00	7,450.00	7,440.59	93.34	470.58	-17.81	-488.66	-1,671.11	9,651.06	9,149.48	501.59	19.241			
16,400.00	8,523.00	7,450.00	7,440.59	94.41	470.58	-17.81	-488.66	-1,671.11	9,750.42	9,248.70	501.72	19.434			
16,500.00	8,523.00	7,450.00	7,440.59	95.47	470.58	-17.81	-488.66	-1,671.11	9,849.78	9,347.93	501.85	19.627			
16,600.00	8,523.00	7,450.00	7,440.59	96.54	470.58	-17.81	-488.66	-1,671.11	9,949.16	9,447.18	501.98	19.820			
16,700.00	8,523.00	7,450.00	7,440.59	97.60	470.58	-17.81	-488.66	-1,671.11	10,048.55	9,546.44	502.11	20.013			
16,800.00	8,523.00	7,450.00	7,440.59	98.67	470.58	-17.81	-488.66	-1,671.11	10,147.95	9,645.71	502.24	20.205			
16,900.00	8,523.00	7,450.00	7,440.59	99.74	470.58	-17.81	-488.66	-1,671.11	10,247.37	9,745.00	502.37	20.398			
17,000.00	8,523.00	7,450.00	7,440.59	100.81	470.58	-17.81	-488.66	-1,671.11	10,346.79	9,844.30	502.49	20.591			
17,100.00	8,523.00	7,450.00	7,440.59	101.88	470.58	-17.81	-488.66	-1,671.11	10,446.23	9,943.61	502.62	20.784			
17,200.00	8,523.00	7,450.00	7,440.59	102.96	470.58	-17.81	-488.66	-1,671.11	10,545.68	10,042.93	502.74	20.976			
17,300.00	8,523.00	7,450.00	7,440.59	104.03	470.58	-17.81	-488.66	-1,671.11	10,645.13	10,142.26	502.87	21.169			
17,400.00	8,523.00	7,450.00	7,440.59	105.11	470.58	-17.81	-488.66	-1,671.11	10,744.60	10,241.61	502.99	21.361			
17,500.00	8,523.00	7,450.00	7,440.59	106.18	470.58	-17.81	-488.66	-1,671.11	10,844.08	10,340.96	503.12	21.554			
17,600.00	8,523.00	7,450.00	7,440.59	107.26	470.58	-17.81	-488.66	-1,671.11	10,943.56	10,440.32	503.24	21.746			
17,700.00	8,523.00	7,450.00	7,440.59	108.34	470.58	-17.81	-488.66	-1,671.11	11,043.06	10,539.70	503.36	21.939			
17,800.00	8,523.00	7,450.00	7,440.59	109.41	470.58	-17.81	-488.66	-1,671.11	11,142.57	10,639.08	503.48	22.131			
17,900.00	8,523.00	7,450.00	7,440.59	110.49	470.58	-17.81	-488.66	-1,671.11	11,242.08	10,738.47	503.61	22.323			
18,000.00	8,523.00	7,450.00	7,440.59	111.57	470.58	-17.81	-488.66	-1,671.11	11,341.60	10,837.87	503.73	22.515			
18,100.00	8,523.00	7,450.00	7,440.59	112.66	470.58	-17.81	-488.66	-1,671.11	11,441.13	10,937.28	503.85	22.708			
18,200.00	8,523.00	7,450.00	7,440.59	113.74	470.58	-17.81	-488.66	-1,671.11	11,540.67	11,036.70	503.97	22.900			
18,300.00	8,523.00	7,450.00	7,440.59	114.82	470.58	-17.81	-488.66	-1,671.11	11,640.22	11,136.13	504.09	23.092			
18,400.00	8,523.00	7,450.00	7,440.59	115.90	470.58	-17.81	-488.66	-1,671.11	11,739.77	11,235.57	504.21	23.284			
18,500.00	8,523.00	7,450.00	7,440.59	116.99	470.58	-17.81	-488.66	-1,671.11	11,839.33	11,335.01	504.33	23.476			
18,600.00	8,523.00	7,450.00	7,440.59	118.07	470.58	-17.81	-488.66	-1,671.11	11,938.90	11,434.46	504.45	23.667			
18,700.00	8,523.00	7,450.00	7,440.59	119.16	470.58	-17.81	-488.66	-1,671.11	12,038.48	11,533.92	504.56	23.859			
18,800.00	8,523.00	7,450.00	7,440.59	120.24	470.58	-17.81	-488.66	-1,671.11	12,138.06	11,633.38	504.68	24.051			
18,900.00	8,523.00	7,450.00	7,440.59	121.33	470.58	-17.81	-488.66	-1,671.11	12,237.65	11,732.85	504.80	24.242			
19,000.00	8,523.00	7,450.00	7,440.59	122.42	470.58	-17.81	-488.66	-1,671.11	12,337.25	11,832.33	504.92	24.434			
19,100.00	8,523.00	7,450.00	7,440.59	123.51	470.58	-17.81	-488.66	-1,671.11	12,436.85	11,931.81	505.04	24.626			
19,200.00	8,523.00	7,450.00	7,440.59	124.59	470.58	-17.81	-488.66	-1,671.11	12,536.46	12,031.31	505.16	24.817			
19,235.87	8,523.00	7,450.00	7,440.59	124.99	470.58	-17.81	-488.66	-1,671.11	12,572.19	12,066.99	505.20	24.886			

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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 - W08_FEDERAL V COM #004_1535127 - Inc Only - Inc Only												Offset Site Error:	0.00 usft
Survey Program: 262-INC-ONLY												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
7,700.00	7,646.20	7,671.78	7,669.44	27.78	187.56	125.89	2,544.56	-4,146.93	5,300.81	5,085.76	215.06	24.648	CC
7,800.00	7,746.16	7,715.60	7,713.16	28.14	188.57	125.92	2,544.75	-4,146.93	5,302.23	5,085.81	216.42	24.500	
7,853.84	7,800.00	7,769.44	7,767.00	28.32	189.87	-50.59	2,544.75	-4,146.93	5,302.45	5,084.55	217.90	24.334	
7,900.00	7,846.16	7,842.85	7,840.38	28.46	191.64	-50.59	2,545.60	-4,146.93	5,303.07	5,083.24	219.83	24.124	
8,003.88	7,950.04	7,919.56	7,917.04	28.79	193.46	-50.59	2,544.75	-4,146.93	5,302.45	5,080.48	221.97	23.888	ES
8,050.00	7,996.11	7,965.63	7,963.11	28.94	194.38	-139.51	2,544.75	-4,146.93	5,303.86	5,080.82	223.04	23.780	
8,100.00	8,045.71	8,015.23	8,012.71	29.11	195.37	-139.25	2,544.75	-4,146.93	5,308.58	5,084.38	224.19	23.678	
8,150.00	8,094.58	8,070.61	8,068.09	29.27	196.47	-138.80	2,545.12	-4,146.93	5,316.81	5,091.36	225.46	23.582	
8,200.00	8,142.35	8,128.71	8,126.19	29.42	197.63	-138.17	2,544.91	-4,146.93	5,327.94	5,101.17	226.77	23.495	
8,250.00	8,188.66	8,158.21	8,155.66	29.57	198.22	-137.25	2,544.75	-4,146.93	5,342.19	5,114.69	227.50	23.482	
8,300.00	8,233.15	8,202.70	8,200.15	29.71	199.10	-136.13	2,544.75	-4,146.93	5,359.65	5,131.13	228.53	23.453	
8,350.00	8,275.49	8,245.03	8,242.49	29.84	199.95	-134.74	2,544.75	-4,146.93	5,380.07	5,150.57	229.50	23.443	SF
8,400.00	8,315.35	8,284.89	8,282.35	29.95	200.75	-133.06	2,544.75	-4,146.93	5,403.30	5,172.89	230.41	23.451	
8,450.00	8,352.43	8,323.83	8,321.28	30.05	201.52	-131.04	2,545.42	-4,146.93	5,429.63	5,198.34	231.29	23.475	
8,500.00	8,386.45	8,365.74	8,363.18	30.14	202.36	-128.70	2,545.35	-4,146.93	5,457.99	5,225.77	232.22	23.503	
8,550.00	8,417.14	8,403.55	8,401.00	30.22	203.11	-125.93	2,545.20	-4,146.93	5,488.61	5,255.55	233.06	23.550	
8,600.00	8,444.28	8,436.99	8,434.43	30.28	203.78	-122.69	2,545.00	-4,146.93	5,521.29	5,287.50	233.80	23.616	
8,650.00	8,467.66	8,465.78	8,463.22	30.33	204.36	-118.90	2,544.78	-4,146.93	5,555.83	5,321.40	234.43	23.699	
8,700.00	8,487.10	8,489.72	8,487.16	30.38	204.84	-114.52	2,544.56	-4,146.93	5,591.97	5,357.01	234.96	23.800	
8,750.00	8,502.46	8,472.04	8,469.46	30.42	204.48	-108.99	2,544.75	-4,146.93	5,629.58	5,394.94	234.64	23.993	
8,800.00	8,513.61	8,483.19	8,480.61	30.46	204.72	-103.30	2,544.75	-4,146.93	5,668.25	5,433.34	234.90	24.130	
8,850.00	8,520.47	8,490.05	8,487.47	30.51	204.86	-97.10	2,544.75	-4,146.93	5,707.69	5,472.63	235.07	24.281	
8,903.88	8,523.00	8,492.58	8,490.00	30.57	204.92	-90.00	2,544.75	-4,146.93	5,750.74	5,515.60	235.14	24.457	
8,934.88	8,523.00	8,492.58	8,490.00	30.62	204.92	-90.00	2,544.75	-4,146.93	5,775.72	5,540.57	235.15	24.562	
9,000.00	8,523.00	8,492.58	8,490.00	30.74	204.92	-90.00	2,544.75	-4,146.93	5,828.59	5,593.42	235.17	24.785	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,800.00	8,523.00	8,526.20	8,523.32	57.56	208.64	-91.37	901.40	10,212.65	6,034.44	5,790.75	243.69	24.763	
12,900.00	8,523.00	8,526.18	8,523.30	58.52	208.64	-91.37	901.40	10,212.65	5,938.30	5,694.34	243.96	24.341	
13,000.00	8,523.00	8,526.16	8,523.28	59.48	208.64	-91.37	901.41	10,212.65	5,842.30	5,598.05	244.25	23.919	
13,100.00	8,523.00	8,526.14	8,523.26	60.46	208.63	-91.36	901.41	10,212.65	5,746.44	5,501.88	244.56	23.497	
13,200.00	8,523.00	8,526.12	8,523.24	61.43	208.63	-91.36	901.41	10,212.65	5,650.71	5,405.84	244.88	23.076	
13,300.00	8,523.00	8,526.11	8,523.22	62.41	208.63	-91.36	901.41	10,212.65	5,555.14	5,309.93	245.22	22.654	
13,400.00	8,523.00	8,526.09	8,523.21	63.40	208.63	-91.36	901.41	10,212.65	5,459.73	5,214.16	245.57	22.233	
13,500.00	8,523.00	8,526.07	8,523.19	64.39	208.63	-91.36	901.41	10,212.65	5,364.48	5,118.54	245.95	21.812	
13,600.00	8,523.00	8,526.05	8,523.17	65.39	208.63	-91.36	901.41	10,212.65	5,269.41	5,023.08	246.34	21.391	
13,700.00	8,523.00	8,526.03	8,523.15	66.39	208.63	-91.36	901.41	10,212.65	5,174.53	4,927.78	246.75	20.970	
13,800.00	8,523.00	8,526.01	8,523.13	67.39	208.63	-91.36	901.41	10,212.65	5,079.84	4,832.65	247.19	20.550	
13,900.00	8,523.00	8,525.99	8,523.11	68.39	208.63	-91.36	901.41	10,212.65	4,985.36	4,737.71	247.65	20.131	
14,000.00	8,523.00	8,525.98	8,523.09	69.40	208.63	-91.36	901.41	10,212.65	4,891.10	4,642.97	248.13	19.712	
14,100.00	8,523.00	8,525.96	8,523.08	70.42	208.63	-91.36	901.41	10,212.65	4,797.07	4,548.43	248.64	19.293	
14,200.00	8,523.00	8,525.94	8,523.06	71.43	208.63	-91.36	901.41	10,212.65	4,703.29	4,454.11	249.18	18.875	
14,300.00	8,523.00	8,525.92	8,523.04	72.45	208.63	-91.36	901.41	10,212.65	4,609.77	4,360.02	249.75	18.457	
14,400.00	8,523.00	8,525.90	8,523.02	73.48	208.63	-91.36	901.41	10,212.65	4,516.53	4,266.18	250.35	18.041	
14,500.00	8,523.00	8,525.88	8,523.00	74.50	208.63	-91.36	901.41	10,212.65	4,423.58	4,172.60	250.98	17.625	
14,600.00	8,523.00	8,525.86	8,522.98	75.53	208.63	-91.35	901.41	10,212.65	4,330.95	4,079.30	251.65	17.210	
14,700.00	8,523.00	8,525.85	8,522.97	76.56	208.63	-91.35	901.41	10,212.65	4,238.65	3,986.29	252.36	16.796	
14,800.00	8,523.00	8,525.83	8,522.95	77.60	208.63	-91.35	901.41	10,212.65	4,146.71	3,893.61	253.10	16.384	
14,900.00	8,523.00	8,525.81	8,522.93	78.63	208.62	-91.35	901.41	10,212.65	4,055.15	3,801.26	253.89	15.972	
15,000.00	8,523.00	8,525.79	8,522.91	79.67	208.62	-91.35	901.41	10,212.65	3,964.00	3,709.28	254.72	15.562	
15,100.00	8,523.00	8,525.77	8,522.89	80.71	208.62	-91.35	901.41	10,212.65	3,873.28	3,617.68	255.60	15.153	
15,200.00	8,523.00	8,525.75	8,522.87	81.75	208.62	-91.35	901.41	10,212.65	3,783.04	3,526.50	256.53	14.747	
15,300.00	8,523.00	8,525.73	8,522.85	82.80	208.62	-91.35	901.42	10,212.65	3,693.29	3,435.77	257.52	14.342	
15,400.00	8,523.00	8,525.72	8,522.84	83.84	208.62	-91.35	901.42	10,212.65	3,604.09	3,345.52	258.56	13.939	
15,500.00	8,523.00	8,525.70	8,522.82	84.89	208.62	-91.35	901.42	10,212.65	3,515.46	3,255.80	259.67	13.538	
15,600.00	8,523.00	8,525.68	8,522.80	85.94	208.62	-91.35	901.42	10,212.65	3,427.47	3,166.63	260.84	13.140	
15,700.00	8,523.00	8,525.66	8,522.78	87.00	208.62	-91.35	901.42	10,212.65	3,340.14	3,078.07	262.07	12.745	
15,800.00	8,523.00	8,525.64	8,522.76	88.05	208.62	-91.35	901.42	10,212.65	3,253.55	2,990.17	263.38	12.353	
15,900.00	8,523.00	8,525.62	8,522.74	89.11	208.62	-91.35	901.42	10,212.65	3,167.75	2,902.98	264.77	11.964	
16,000.00	8,523.00	8,525.60	8,522.72	90.16	208.62	-91.35	901.42	10,212.65	3,082.80	2,816.57	266.24	11.579	
16,100.00	8,523.00	8,525.59	8,522.71	91.22	208.62	-91.35	901.42	10,212.65	2,998.79	2,731.00	267.79	11.198	
16,200.00	8,523.00	8,525.57	8,522.69	92.28	208.62	-91.34	901.42	10,212.65	2,915.78	2,646.34	269.44	10.822	
16,300.00	8,523.00	8,525.55	8,522.67	93.34	208.62	-91.34	901.42	10,212.65	2,833.87	2,562.69	271.17	10.450	
16,400.00	8,523.00	8,525.53	8,522.65	94.41	208.62	-91.34	901.42	10,212.65	2,753.15	2,480.14	273.01	10.084	
16,500.00	8,523.00	8,525.51	8,522.63	95.47	208.62	-91.34	901.42	10,212.65	2,673.74	2,398.78	274.95	9.724	
16,600.00	8,523.00	8,525.49	8,522.61	96.54	208.61	-91.34	901.42	10,212.65	2,595.75	2,318.75	277.00	9.371	
16,700.00	8,523.00	8,525.47	8,522.59	97.60	208.61	-91.34	901.42	10,212.65	2,519.32	2,240.16	279.16	9.025	
16,800.00	8,523.00	8,525.46	8,522.58	98.67	208.61	-91.34	901.42	10,212.65	2,444.58	2,163.15	281.43	8.686	
16,900.00	8,523.00	8,525.44	8,522.56	99.74	208.61	-91.34	901.42	10,212.65	2,371.72	2,087.90	283.81	8.357	
17,000.00	8,523.00	8,525.42	8,522.54	100.81	208.61	-91.34	901.42	10,212.65	2,300.89	2,014.58	286.31	8.036	
17,100.00	8,523.00	8,525.40	8,522.52	101.88	208.61	-91.34	901.42	10,212.65	2,232.29	1,943.38	288.91	7.727	
17,200.00	8,523.00	8,525.38	8,522.50	102.96	208.61	-91.34	901.42	10,212.65	2,166.14	1,874.53	291.61	7.428	
17,300.00	8,523.00	8,525.36	8,522.48	104.03	208.61	-91.34	901.42	10,212.65	2,102.66	1,808.25	294.41	7.142	
17,400.00	8,523.00	8,525.35	8,522.47	105.11	208.61	-91.34	901.42	10,212.65	2,042.11	1,744.83	297.29	6.869	
17,500.00	8,523.00	8,525.33	8,522.45	106.18	208.61	-91.34	901.42	10,212.65	1,984.76	1,684.53	300.23	6.611	
17,600.00	8,523.00	8,525.31	8,522.43	107.26	208.61	-91.34	901.42	10,212.65	1,930.88	1,627.68	303.21	6.368	
17,700.00	8,523.00	8,525.29	8,522.41	108.34	208.61	-91.33	901.43	10,212.65	1,880.78	1,574.59	306.20	6.142	
17,800.00	8,523.00	8,525.27	8,522.39	109.41	208.61	-91.33	901.43	10,212.65	1,834.77	1,525.61	309.17	5.935	
17,900.00	8,523.00	8,525.25	8,522.37	110.49	208.61	-91.33	901.43	10,212.65	1,793.16	1,481.09	312.07	5.746	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
18,000.00	8,523.00	8,525.23	8,522.35	111.57	208.61	-91.33	901.43	10,212.65	1,756.27	1,441.40	314.86	5.578	
18,100.00	8,523.00	8,525.22	8,522.34	112.66	208.61	-91.33	901.43	10,212.65	1,724.39	1,406.89	317.50	5.431	
18,200.00	8,523.00	8,525.20	8,522.32	113.74	208.61	-91.33	901.43	10,212.65	1,697.81	1,377.89	319.92	5.307	
18,300.00	8,523.00	8,525.18	8,522.30	114.82	208.61	-91.33	901.43	10,212.65	1,676.78	1,354.69	322.09	5.206	
18,400.00	8,523.00	8,525.16	8,522.28	115.90	208.60	-91.33	901.43	10,212.65	1,661.51	1,337.57	323.94	5.129	
18,500.00	8,523.00	8,525.14	8,522.26	116.99	208.60	-91.33	901.43	10,212.65	1,652.17	1,326.71	325.46	5.076	
18,600.00	8,523.00	8,525.12	8,522.24	118.07	208.60	-91.33	901.43	10,212.65	1,648.85	1,322.26	326.59	5.049	
18,604.80	8,523.00	8,525.12	8,522.24	118.12	208.60	-91.33	901.43	10,212.65	1,648.84	1,322.21	326.64	5.048 CC, ES	
18,700.00	8,523.00	8,525.11	8,522.23	119.16	208.60	-91.33	901.43	10,212.65	1,651.59	1,324.25	327.34	5.046 SF	
18,800.00	8,523.00	8,525.09	8,522.21	120.24	208.60	-91.33	901.43	10,212.65	1,660.36	1,332.68	327.68	5.067	
18,900.00	8,523.00	8,525.07	8,522.19	121.33	208.60	-91.33	901.43	10,212.65	1,675.06	1,347.42	327.64	5.113	
19,000.00	8,523.00	8,525.05	8,522.17	122.42	208.60	-91.33	901.43	10,212.65	1,695.54	1,368.32	327.22	5.182	
19,100.00	8,523.00	8,525.03	8,522.15	123.51	208.60	-91.33	901.43	10,212.65	1,721.60	1,395.13	326.47	5.273	
19,200.00	8,523.00	8,525.01	8,522.13	124.59	208.60	-91.33	901.43	10,212.65	1,752.98	1,427.56	325.43	5.387	
19,235.87	8,523.00	8,525.01	8,522.13	124.99	208.60	-91.32	901.43	10,212.65	1,765.48	1,440.50	324.99	5.433	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,300.00	8,523.00	8,512.08	8,511.38	44.08	166.76	-90.60	884.02	7,540.90	4,917.64	4,717.47	200.17	24.567	
11,400.00	8,523.00	8,512.07	8,511.37	44.90	166.76	-90.60	884.02	7,540.90	4,823.55	4,623.11	200.43	24.066	
11,500.00	8,523.00	8,512.06	8,511.36	45.75	166.76	-90.60	884.02	7,540.90	4,729.69	4,528.98	200.71	23.565	
11,600.00	8,523.00	8,512.06	8,511.36	46.60	166.76	-90.60	884.02	7,540.90	4,636.10	4,435.09	201.01	23.064	
11,700.00	8,523.00	8,512.05	8,511.35	47.46	166.76	-90.60	884.02	7,540.90	4,542.77	4,341.44	201.33	22.564	
11,800.00	8,523.00	8,512.04	8,511.34	48.34	166.76	-90.60	884.02	7,540.90	4,449.74	4,248.07	201.67	22.064	
11,900.00	8,523.00	8,512.03	8,511.33	49.22	166.76	-90.60	884.02	7,540.90	4,357.02	4,154.98	202.04	21.565	
12,000.00	8,523.00	8,512.03	8,511.32	50.12	166.76	-90.60	884.02	7,540.90	4,264.62	4,062.19	202.43	21.067	
12,100.00	8,523.00	8,512.02	8,511.32	51.02	166.76	-90.60	884.02	7,540.90	4,172.58	3,969.73	202.85	20.570	
12,200.00	8,523.00	8,512.01	8,511.31	51.93	166.76	-90.60	884.02	7,540.90	4,080.91	3,877.61	203.30	20.074	
12,300.00	8,523.00	8,512.00	8,511.30	52.85	166.76	-90.60	884.02	7,540.90	3,989.64	3,785.86	203.78	19.578	
12,400.00	8,523.00	8,512.00	8,511.29	53.78	166.76	-90.60	884.02	7,540.90	3,898.79	3,694.50	204.29	19.085	
12,500.00	8,523.00	8,511.99	8,511.29	54.71	166.76	-90.60	884.02	7,540.90	3,808.41	3,603.57	204.84	18.592	
12,600.00	8,523.00	8,511.98	8,511.28	55.66	166.76	-90.60	884.02	7,540.90	3,718.52	3,513.09	205.43	18.101	
12,700.00	8,523.00	8,511.97	8,511.27	56.60	166.76	-90.60	884.02	7,540.90	3,629.16	3,423.10	206.06	17.612	
12,800.00	8,523.00	8,511.97	8,511.26	57.56	166.76	-90.60	884.02	7,540.90	3,540.37	3,333.64	206.73	17.125	
12,900.00	8,523.00	8,511.96	8,511.26	58.52	166.76	-90.60	884.02	7,540.90	3,452.19	3,244.74	207.45	16.641	
13,000.00	8,523.00	8,511.95	8,511.25	59.48	166.76	-90.60	884.02	7,540.90	3,364.67	3,156.45	208.22	16.159	
13,100.00	8,523.00	8,511.94	8,511.24	60.46	166.76	-90.60	884.02	7,540.90	3,277.87	3,068.82	209.05	15.680	
13,200.00	8,523.00	8,511.94	8,511.23	61.43	166.76	-90.60	884.02	7,540.90	3,191.83	2,981.90	209.93	15.204	
13,300.00	8,523.00	8,511.93	8,511.23	62.41	166.76	-90.60	884.02	7,540.90	3,106.64	2,895.76	210.88	14.732	
13,400.00	8,523.00	8,511.92	8,511.22	63.40	166.76	-90.60	884.02	7,540.90	3,022.35	2,810.46	211.89	14.264	
13,500.00	8,523.00	8,511.91	8,511.21	64.39	166.76	-90.60	884.02	7,540.90	2,939.05	2,726.08	212.97	13.801	
13,600.00	8,523.00	8,511.90	8,511.20	65.39	166.76	-90.60	884.02	7,540.90	2,856.82	2,642.70	214.12	13.342	
13,700.00	8,523.00	8,511.90	8,511.20	66.39	166.76	-90.60	884.02	7,540.90	2,775.75	2,560.41	215.35	12.890	
13,800.00	8,523.00	8,511.89	8,511.19	67.39	166.76	-90.60	884.02	7,540.90	2,695.96	2,479.31	216.66	12.444	
13,900.00	8,523.00	8,511.88	8,511.18	68.39	166.76	-90.60	884.03	7,540.90	2,617.56	2,399.51	218.05	12.004	
14,000.00	8,523.00	8,511.87	8,511.17	69.40	166.76	-90.60	884.03	7,540.90	2,540.67	2,321.14	219.53	11.573	
14,100.00	8,523.00	8,511.87	8,511.16	70.42	166.76	-90.60	884.03	7,540.90	2,465.44	2,244.34	221.10	11.151	
14,200.00	8,523.00	8,511.86	8,511.16	71.43	166.76	-90.60	884.03	7,540.90	2,392.03	2,169.27	222.77	10.738	
14,300.00	8,523.00	8,511.85	8,511.15	72.45	166.75	-90.60	884.03	7,540.90	2,320.61	2,096.08	224.52	10.336	
14,400.00	8,523.00	8,511.84	8,511.14	73.48	166.75	-90.60	884.03	7,540.90	2,251.36	2,024.99	226.37	9.945	
14,500.00	8,523.00	8,511.84	8,511.13	74.50	166.75	-90.60	884.03	7,540.90	2,184.50	1,956.18	228.31	9.568	
14,600.00	8,523.00	8,511.83	8,511.13	75.53	166.75	-90.60	884.03	7,540.90	2,120.24	1,889.90	230.34	9.205	
14,700.00	8,523.00	8,511.82	8,511.12	76.56	166.75	-90.59	884.03	7,540.90	2,058.84	1,826.40	232.44	8.858	
14,800.00	8,523.00	8,511.81	8,511.11	77.60	166.75	-90.59	884.03	7,540.90	2,000.56	1,765.95	234.61	8.527	
14,900.00	8,523.00	8,511.81	8,511.10	78.63	166.75	-90.59	884.03	7,540.90	1,945.67	1,708.84	236.83	8.215	
15,000.00	8,523.00	8,511.80	8,511.10	79.67	166.75	-90.59	884.03	7,540.90	1,894.47	1,655.39	239.09	7.924	
15,100.00	8,523.00	8,511.79	8,511.09	80.71	166.75	-90.59	884.03	7,540.90	1,847.28	1,605.93	241.35	7.654	
15,200.00	8,523.00	8,511.78	8,511.08	81.75	166.75	-90.59	884.03	7,540.90	1,804.39	1,560.80	243.60	7.407	
15,300.00	8,523.00	8,511.77	8,511.07	82.80	166.75	-90.59	884.03	7,540.90	1,766.13	1,520.34	245.79	7.185	
15,400.00	8,523.00	8,511.77	8,511.07	83.84	166.75	-90.59	884.03	7,540.90	1,732.81	1,484.91	247.90	6.990	
15,500.00	8,523.00	8,511.76	8,511.06	84.89	166.75	-90.59	884.03	7,540.90	1,704.71	1,454.82	249.89	6.822	
15,600.00	8,523.00	8,511.75	8,511.05	85.94	166.75	-90.59	884.03	7,540.90	1,682.09	1,430.38	251.71	6.683	
15,700.00	8,523.00	8,511.74	8,511.04	87.00	166.75	-90.59	884.03	7,540.90	1,665.18	1,411.85	253.33	6.573	
15,800.00	8,523.00	8,511.74	8,511.04	88.05	166.75	-90.59	884.03	7,540.90	1,654.16	1,399.43	254.72	6.494	
15,900.00	8,523.00	8,511.73	8,511.03	89.11	166.75	-90.59	884.03	7,540.90	1,649.13	1,393.28	255.85	6.446	
15,932.99	8,523.00	8,511.73	8,511.03	89.45	166.75	-90.59	884.03	7,540.90	1,648.80	1,392.64	256.17	6.436 CC, ES	
16,000.00	8,523.00	8,511.72	8,511.02	90.16	166.75	-90.59	884.03	7,540.90	1,650.16	1,393.46	256.71	6.428 SF	
16,100.00	8,523.00	8,511.71	8,511.01	91.22	166.75	-90.59	884.03	7,540.90	1,657.24	1,399.97	257.27	6.442	
16,200.00	8,523.00	8,511.71	8,511.00	92.28	166.75	-90.59	884.03	7,540.90	1,670.28	1,412.73	257.55	6.485	
16,300.00	8,523.00	8,511.70	8,511.00	93.34	166.75	-90.59	884.03	7,540.90	1,689.15	1,431.60	257.55	6.558	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
16,400.00	8,523.00	8,511.69	8,510.99	94.41	166.75	-90.59	884.03	7,540.90	1,713.66	1,456.37	257.30	6.660		
16,500.00	8,523.00	8,511.68	8,510.98	95.47	166.75	-90.59	884.03	7,540.90	1,743.57	1,486.76	256.81	6.789		
16,600.00	8,523.00	8,511.68	8,510.97	96.54	166.75	-90.59	884.03	7,540.90	1,778.61	1,522.49	256.12	6.944		
16,700.00	8,523.00	8,511.67	8,510.97	97.60	166.75	-90.59	884.03	7,540.90	1,818.47	1,563.22	255.26	7.124		
16,800.00	8,523.00	8,511.66	8,510.96	98.67	166.75	-90.59	884.03	7,540.90	1,862.86	1,608.61	254.25	7.327		
16,900.00	8,523.00	8,511.65	8,510.95	99.74	166.75	-90.59	884.03	7,540.90	1,911.45	1,658.32	253.14	7.551		
17,000.00	8,523.00	8,511.65	8,510.94	100.81	166.75	-90.59	884.03	7,540.90	1,963.94	1,712.00	251.94	7.795		
17,100.00	8,523.00	8,511.64	8,510.94	101.88	166.75	-90.59	884.03	7,540.90	2,020.01	1,769.33	250.68	8.058		
17,200.00	8,523.00	8,511.63	8,510.93	102.96	166.75	-90.59	884.03	7,540.90	2,079.39	1,829.99	249.39	8.338		
17,300.00	8,523.00	8,511.62	8,510.92	104.03	166.75	-90.59	884.03	7,540.90	2,141.79	1,893.70	248.09	8.633		
17,400.00	8,523.00	8,511.62	8,510.91	105.11	166.75	-90.59	884.03	7,540.90	2,206.96	1,960.17	246.78	8.943		
17,500.00	8,523.00	8,511.61	8,510.91	106.18	166.75	-90.59	884.03	7,540.90	2,274.66	2,029.17	245.49	9.266		
17,600.00	8,523.00	8,511.60	8,510.90	107.26	166.75	-90.59	884.03	7,540.90	2,344.67	2,100.45	244.21	9.601		
17,700.00	8,523.00	8,511.59	8,510.89	108.34	166.75	-90.59	884.03	7,540.90	2,416.79	2,173.82	242.97	9.947		
17,800.00	8,523.00	8,511.58	8,510.88	109.41	166.75	-90.59	884.03	7,540.90	2,490.84	2,249.08	241.76	10.303		
17,900.00	8,523.00	8,511.58	8,510.88	110.49	166.75	-90.59	884.03	7,540.90	2,566.64	2,326.06	240.59	10.668		
18,000.00	8,523.00	8,511.57	8,510.87	111.57	166.75	-90.59	884.03	7,540.90	2,644.06	2,404.60	239.46	11.042		
18,100.00	8,523.00	8,511.56	8,510.86	112.66	166.75	-90.59	884.03	7,540.90	2,722.95	2,484.58	238.37	11.423		
18,200.00	8,523.00	8,511.55	8,510.85	113.74	166.75	-90.59	884.03	7,540.90	2,803.19	2,565.86	237.33	11.811		
18,300.00	8,523.00	8,511.55	8,510.85	114.82	166.75	-90.59	884.03	7,540.90	2,884.66	2,648.33	236.33	12.206		
18,400.00	8,523.00	8,511.54	8,510.84	115.90	166.75	-90.59	884.03	7,540.90	2,967.27	2,731.89	235.38	12.606		
18,500.00	8,523.00	8,511.53	8,510.83	116.99	166.75	-90.58	884.03	7,540.90	3,050.91	2,816.44	234.47	13.012		
18,600.00	8,523.00	8,511.52	8,510.82	118.07	166.75	-90.58	884.03	7,540.90	3,135.52	2,901.92	233.60	13.422		
18,700.00	8,523.00	8,511.52	8,510.81	119.16	166.75	-90.58	884.03	7,540.90	3,221.00	2,988.23	232.78	13.837		
18,800.00	8,523.00	8,511.51	8,510.81	120.24	166.75	-90.58	884.03	7,540.90	3,307.31	3,075.32	231.99	14.256		
18,900.00	8,523.00	8,511.50	8,510.80	121.33	166.75	-90.58	884.03	7,540.90	3,394.36	3,163.12	231.24	14.679		
19,000.00	8,523.00	8,511.49	8,510.79	122.42	166.75	-90.58	884.03	7,540.90	3,482.11	3,251.58	230.53	15.105		
19,100.00	8,523.00	8,511.49	8,510.78	123.51	166.75	-90.58	884.03	7,540.90	3,570.50	3,340.65	229.85	15.534		
19,200.00	8,523.00	8,511.48	8,510.78	124.59	166.75	-90.58	884.03	7,540.90	3,659.49	3,430.29	229.20	15.966		
19,235.87	8,523.00	8,511.48	8,510.77	124.99	166.75	-90.58	884.03	7,540.90	3,691.55	3,462.57	228.98	16.122		



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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				Rule Assigned:								Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Minimum Separation (usft)	Separation Factor
12,800.00	8,523.00	6,554.00	6,551.42	57.56	165.57	-65.67	3,530.38	6,258.55	5,078.95	4,874.96	203.99	24.898	
12,900.00	8,523.00	6,554.00	6,551.42	58.52	165.57	-65.67	3,530.38	6,258.55	5,043.03	4,838.20	204.83	24.621	
13,000.00	8,523.00	6,554.00	6,551.42	59.48	165.57	-65.67	3,530.38	6,258.55	5,008.84	4,803.16	205.68	24.353	
13,100.00	8,523.00	6,554.00	6,551.42	60.46	165.57	-65.67	3,530.38	6,258.55	4,976.43	4,769.88	206.54	24.094	
13,200.00	8,523.00	6,554.00	6,551.42	61.43	165.57	-65.67	3,530.38	6,258.55	4,945.82	4,738.40	207.42	23.844	
13,300.00	8,523.00	6,554.00	6,551.42	62.41	165.57	-65.67	3,530.38	6,258.55	4,917.07	4,708.75	208.32	23.604	
13,400.00	8,523.00	6,554.00	6,551.42	63.40	165.57	-65.67	3,530.38	6,258.55	4,890.18	4,680.96	209.22	23.373	
13,500.00	8,523.00	6,554.00	6,551.42	64.39	165.57	-65.67	3,530.38	6,258.55	4,865.21	4,655.07	210.14	23.152	
13,600.00	8,523.00	6,554.00	6,551.42	65.39	165.57	-65.67	3,530.38	6,258.55	4,842.17	4,631.11	211.06	22.942	
13,700.00	8,523.00	6,554.00	6,551.42	66.39	165.57	-65.67	3,530.38	6,258.55	4,821.10	4,609.10	212.00	22.741	
13,800.00	8,523.00	6,554.00	6,551.42	67.39	165.57	-65.67	3,530.38	6,258.55	4,802.01	4,589.07	212.94	22.551	
13,900.00	8,523.00	6,554.00	6,551.42	68.39	165.57	-65.67	3,530.38	6,258.55	4,784.94	4,571.06	213.88	22.372	
14,000.00	8,523.00	6,554.00	6,551.42	69.40	165.57	-65.67	3,530.38	6,258.55	4,769.91	4,555.08	214.83	22.203	
14,100.00	8,523.00	6,554.00	6,551.42	70.42	165.57	-65.67	3,530.38	6,258.55	4,756.93	4,541.15	215.78	22.045	
14,200.00	8,523.00	6,554.00	6,551.42	71.43	165.57	-65.67	3,530.38	6,258.55	4,746.02	4,529.30	216.73	21.899	
14,300.00	8,523.00	6,554.00	6,551.42	72.45	165.57	-65.67	3,530.38	6,258.55	4,737.20	4,519.53	217.67	21.763	
14,400.00	8,523.00	6,554.00	6,551.42	73.48	165.57	-65.67	3,530.38	6,258.55	4,730.48	4,511.86	218.62	21.638	
14,500.00	8,523.00	6,554.00	6,551.42	74.50	165.57	-65.67	3,530.38	6,258.55	4,725.87	4,506.31	219.56	21.524	
14,600.00	8,523.00	6,554.00	6,551.42	75.53	165.57	-65.67	3,530.38	6,258.55	4,723.36	4,502.87	220.49	21.422	
14,668.22	8,523.00	6,554.00	6,551.42	76.23	165.57	-65.67	3,530.38	6,258.55	4,722.87	4,501.75	221.12	21.358 CC	
14,700.00	8,523.00	6,554.00	6,551.42	76.56	165.57	-65.67	3,530.38	6,258.55	4,722.98	4,501.56	221.42	21.331 ES	
14,800.00	8,523.00	6,554.00	6,551.42	77.60	165.57	-65.67	3,530.38	6,258.55	4,724.71	4,502.38	222.33	21.251	
14,900.00	8,523.00	6,554.00	6,551.42	78.63	165.57	-65.67	3,530.38	6,258.55	4,728.56	4,505.32	223.24	21.182	
15,000.00	8,523.00	6,554.00	6,551.42	79.67	165.57	-65.67	3,530.38	6,258.55	4,734.51	4,510.38	224.13	21.124	
15,100.00	8,523.00	6,554.00	6,551.42	80.71	165.57	-65.67	3,530.38	6,258.55	4,742.57	4,517.56	225.01	21.077	
15,200.00	8,523.00	6,554.00	6,551.42	81.75	165.57	-65.67	3,530.38	6,258.55	4,752.72	4,526.84	225.87	21.041	
15,300.00	8,523.00	6,554.00	6,551.42	82.80	165.57	-65.67	3,530.38	6,258.55	4,764.94	4,538.22	226.72	21.017	
15,400.00	8,523.00	6,554.00	6,551.42	83.84	165.57	-65.67	3,530.38	6,258.55	4,779.23	4,551.68	227.55	21.003	
15,500.00	8,523.00	6,554.00	6,551.42	84.89	165.57	-65.67	3,530.38	6,258.55	4,795.56	4,567.19	228.36	21.000 SF	
15,600.00	8,523.00	6,554.00	6,551.42	85.94	165.57	-65.67	3,530.38	6,258.55	4,813.91	4,584.75	229.16	21.007	
15,700.00	8,523.00	6,554.00	6,551.42	87.00	165.57	-65.67	3,530.38	6,258.55	4,834.26	4,604.33	229.93	21.025	
15,800.00	8,523.00	6,554.00	6,551.42	88.05	165.57	-65.67	3,530.38	6,258.55	4,856.59	4,625.91	230.68	21.053	
15,900.00	8,523.00	6,554.00	6,551.42	89.11	165.57	-65.67	3,530.38	6,258.55	4,880.86	4,649.45	231.41	21.092	
16,000.00	8,523.00	6,554.00	6,551.42	90.16	165.57	-65.67	3,530.38	6,258.55	4,907.05	4,674.94	232.12	21.141	
16,100.00	8,523.00	6,554.00	6,551.42	91.22	165.57	-65.67	3,530.38	6,258.55	4,935.13	4,702.33	232.80	21.199	
16,200.00	8,523.00	6,554.00	6,551.42	92.28	165.57	-65.67	3,530.38	6,258.55	4,965.06	4,731.60	233.46	21.267	
16,300.00	8,523.00	6,554.00	6,551.42	93.34	165.57	-65.67	3,530.38	6,258.55	4,996.82	4,762.72	234.10	21.345	
16,400.00	8,523.00	6,554.00	6,551.42	94.41	165.57	-65.67	3,530.38	6,258.55	5,030.37	4,795.65	234.71	21.432	
16,500.00	8,523.00	6,554.00	6,551.42	95.47	165.57	-65.67	3,530.38	6,258.55	5,065.66	4,830.36	235.30	21.528	
16,600.00	8,523.00	6,554.00	6,551.42	96.54	165.57	-65.67	3,530.38	6,258.55	5,102.67	4,866.80	235.87	21.633	
16,700.00	8,523.00	6,554.00	6,551.42	97.60	165.57	-65.67	3,530.38	6,258.55	5,141.37	4,904.95	236.41	21.747	
16,800.00	8,523.00	6,554.00	6,551.42	98.67	165.57	-65.67	3,530.38	6,258.55	5,181.70	4,944.77	236.93	21.870	
16,900.00	8,523.00	6,554.00	6,551.42	99.74	165.57	-65.67	3,530.38	6,258.55	5,223.63	4,986.21	237.43	22.001	
17,000.00	8,523.00	6,554.00	6,551.42	100.81	165.57	-65.67	3,530.38	6,258.55	5,267.13	5,029.23	237.90	22.140	
17,100.00	8,523.00	6,554.00	6,551.42	101.88	165.57	-65.67	3,530.38	6,258.55	5,312.16	5,073.81	238.35	22.287	
17,200.00	8,523.00	6,554.00	6,551.42	102.96	165.57	-65.67	3,530.38	6,258.55	5,358.68	5,119.90	238.78	22.442	
17,300.00	8,523.00	6,554.00	6,551.42	104.03	165.57	-65.67	3,530.38	6,258.55	5,406.64	5,167.45	239.19	22.604	
17,400.00	8,523.00	6,554.00	6,551.42	105.11	165.57	-65.67	3,530.38	6,258.55	5,456.02	5,216.44	239.58	22.774	
17,500.00	8,523.00	6,554.00	6,551.42	106.18	165.57	-65.67	3,530.38	6,258.55	5,506.77	5,266.83	239.94	22.951	
17,600.00	8,523.00	6,554.00	6,551.42	107.26	165.57	-65.67	3,530.38	6,258.55	5,558.85	5,318.57	240.29	23.134	
17,700.00	8,523.00	6,554.00	6,551.42	108.34	165.57	-65.67	3,530.38	6,258.55	5,612.24	5,371.63	240.61	23.325	
17,800.00	8,523.00	6,554.00	6,551.42	109.41	165.57	-65.67	3,530.38	6,258.55	5,666.88	5,425.96	240.92	23.522	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
17,900.00	8,523.00	6,554.00	6,551.42	110.49	165.57	-65.67	3,530.38	6,258.55	5,722.75	5,481.55	241.21	23.725		
18,000.00	8,523.00	6,554.00	6,551.42	111.57	165.57	-65.67	3,530.38	6,258.55	5,779.82	5,538.34	241.48	23.935		
18,100.00	8,523.00	6,554.00	6,551.42	112.66	165.57	-65.67	3,530.38	6,258.55	5,838.03	5,596.30	241.73	24.151		
18,200.00	8,523.00	6,554.00	6,551.42	113.74	165.57	-65.67	3,530.38	6,258.55	5,897.37	5,655.40	241.97	24.372		
18,300.00	8,523.00	6,554.00	6,551.42	114.82	165.57	-65.67	3,530.38	6,258.55	5,957.80	5,715.60	242.19	24.599		
18,400.00	8,523.00	6,554.00	6,551.42	115.90	165.57	-65.67	3,530.38	6,258.55	6,019.28	5,776.88	242.40	24.832		



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Distance Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
13,200.00	8,523.00	6,590.00	6,586.51	61.43	178.10	-66.14	3,540.75	7,579.04	5,471.59	5,252.52	219.07	24.976			
13,300.00	8,523.00	6,590.00	6,586.51	62.41	178.10	-66.14	3,540.75	7,579.04	5,421.30	5,201.40	219.91	24.653			
13,400.00	8,523.00	6,590.00	6,586.51	63.40	178.10	-66.14	3,540.75	7,579.04	5,372.41	5,151.65	220.76	24.336			
13,500.00	8,523.00	6,590.00	6,586.51	64.39	178.10	-66.14	3,540.75	7,579.04	5,324.95	5,103.31	221.63	24.026			
13,600.00	8,523.00	6,590.00	6,586.51	65.39	178.10	-66.14	3,540.75	7,579.04	5,278.95	5,056.42	222.53	23.723			
13,700.00	8,523.00	6,590.00	6,586.51	66.39	178.10	-66.14	3,540.75	7,579.04	5,234.46	5,011.02	223.43	23.427			
13,800.00	8,523.00	6,590.00	6,586.51	67.39	178.10	-66.14	3,540.75	7,579.04	5,191.51	4,967.15	224.36	23.139			
13,900.00	8,523.00	6,590.00	6,586.51	68.39	178.10	-66.14	3,540.75	7,579.04	5,150.15	4,924.85	225.30	22.859			
14,000.00	8,523.00	6,590.00	6,586.51	69.40	178.10	-66.14	3,540.75	7,579.04	5,110.41	4,884.16	226.25	22.587			
14,100.00	8,523.00	6,590.00	6,586.51	70.42	178.10	-66.14	3,540.75	7,579.04	5,072.33	4,845.11	227.22	22.324			
14,200.00	8,523.00	6,590.00	6,586.51	71.43	178.10	-66.14	3,540.75	7,579.04	5,035.95	4,807.75	228.20	22.068			
14,300.00	8,523.00	6,590.00	6,586.51	72.45	178.10	-66.14	3,540.75	7,579.04	5,001.30	4,772.12	229.19	21.822			
14,400.00	8,523.00	6,590.00	6,586.51	73.48	178.10	-66.14	3,540.75	7,579.04	4,968.43	4,738.24	230.19	21.584			
14,500.00	8,523.00	6,590.00	6,586.51	74.50	178.10	-66.14	3,540.75	7,579.04	4,937.36	4,706.16	231.20	21.356			
14,600.00	8,523.00	6,590.00	6,586.51	75.53	178.10	-66.14	3,540.75	7,579.04	4,908.14	4,675.92	232.21	21.136			
14,700.00	8,523.00	6,590.00	6,586.51	76.56	178.10	-66.14	3,540.75	7,579.04	4,880.78	4,647.55	233.24	20.926			
14,800.00	8,523.00	6,590.00	6,586.51	77.60	178.10	-66.14	3,540.75	7,579.04	4,855.34	4,621.07	234.26	20.726			
14,900.00	8,523.00	6,590.00	6,586.51	78.63	178.10	-66.14	3,540.75	7,579.04	4,831.83	4,596.53	235.29	20.535			
15,000.00	8,523.00	6,590.00	6,586.51	79.67	178.10	-66.14	3,540.75	7,579.04	4,810.28	4,573.96	236.32	20.355			
15,100.00	8,523.00	6,590.00	6,586.51	80.71	178.10	-66.14	3,540.75	7,579.04	4,790.72	4,553.37	237.35	20.184			
15,200.00	8,523.00	6,590.00	6,586.51	81.75	178.10	-66.14	3,540.75	7,579.04	4,773.18	4,534.80	238.38	20.023			
15,300.00	8,523.00	6,590.00	6,586.51	82.80	178.10	-66.14	3,540.75	7,579.04	4,757.68	4,518.27	239.41	19.873			
15,400.00	8,523.00	6,590.00	6,586.51	83.84	178.10	-66.14	3,540.75	7,579.04	4,744.24	4,503.81	240.43	19.732			
15,500.00	8,523.00	6,590.00	6,586.51	84.89	178.10	-66.14	3,540.75	7,579.04	4,732.87	4,491.43	241.44	19.602			
15,600.00	8,523.00	6,590.00	6,586.51	85.94	178.10	-66.14	3,540.75	7,579.04	4,723.59	4,481.14	242.45	19.483			
15,700.00	8,523.00	6,590.00	6,586.51	87.00	178.10	-66.14	3,540.75	7,579.04	4,716.41	4,472.97	243.44	19.374			
15,800.00	8,523.00	6,590.00	6,586.51	88.05	178.10	-66.14	3,540.75	7,579.04	4,711.35	4,466.92	244.43	19.275			
15,900.00	8,523.00	6,590.00	6,586.51	89.11	178.10	-66.14	3,540.75	7,579.04	4,708.40	4,463.00	245.40	19.187			
15,988.75	8,523.00	6,590.00	6,586.51	90.04	178.10	-66.14	3,540.75	7,579.04	4,707.56	4,461.32	246.24	19.117	CC		
16,000.00	8,523.00	6,590.00	6,586.51	90.16	178.10	-66.14	3,540.75	7,579.04	4,707.58	4,461.23	246.35	19.109	ES		
16,100.00	8,523.00	6,590.00	6,586.51	91.22	178.10	-66.14	3,540.75	7,579.04	4,708.88	4,461.59	247.29	19.042			
16,200.00	8,523.00	6,590.00	6,586.51	92.28	178.10	-66.14	3,540.75	7,579.04	4,712.30	4,464.09	248.21	18.985			
16,300.00	8,523.00	6,590.00	6,586.51	93.34	178.10	-66.14	3,540.75	7,579.04	4,717.84	4,468.73	249.11	18.938			
16,400.00	8,523.00	6,590.00	6,586.51	94.41	178.10	-66.14	3,540.75	7,579.04	4,725.49	4,475.50	250.00	18.902			
16,500.00	8,523.00	6,590.00	6,586.51	95.47	178.10	-66.14	3,540.75	7,579.04	4,735.24	4,484.39	250.86	18.876			
16,600.00	8,523.00	6,590.00	6,586.51	96.54	178.10	-66.14	3,540.75	7,579.04	4,747.08	4,495.39	251.70	18.860			
16,700.00	8,523.00	6,590.00	6,586.51	97.60	178.10	-66.14	3,540.75	7,579.04	4,760.99	4,508.48	252.51	18.855	SF		
16,800.00	8,523.00	6,590.00	6,586.51	98.67	178.10	-66.14	3,540.75	7,579.04	4,776.95	4,523.65	253.30	18.859			
16,900.00	8,523.00	6,590.00	6,586.51	99.74	178.10	-66.14	3,540.75	7,579.04	4,794.95	4,540.88	254.07	18.873			
17,000.00	8,523.00	6,590.00	6,586.51	100.81	178.10	-66.14	3,540.75	7,579.04	4,814.95	4,560.15	254.80	18.897			
17,100.00	8,523.00	6,590.00	6,586.51	101.88	178.10	-66.14	3,540.75	7,579.04	4,836.95	4,581.43	255.52	18.930			
17,200.00	8,523.00	6,590.00	6,586.51	102.96	178.10	-66.14	3,540.75	7,579.04	4,860.89	4,604.69	256.20	18.973			
17,300.00	8,523.00	6,590.00	6,586.51	104.03	178.10	-66.14	3,540.75	7,579.04	4,886.77	4,629.91	256.86	19.025			
17,400.00	8,523.00	6,590.00	6,586.51	105.11	178.10	-66.14	3,540.75	7,579.04	4,914.55	4,657.06	257.49	19.086			
17,500.00	8,523.00	6,590.00	6,586.51	106.18	178.10	-66.14	3,540.75	7,579.04	4,944.19	4,686.10	258.09	19.156			
17,600.00	8,523.00	6,590.00	6,586.51	107.26	178.10	-66.14	3,540.75	7,579.04	4,975.67	4,717.00	258.67	19.236			
17,700.00	8,523.00	6,590.00	6,586.51	108.34	178.10	-66.14	3,540.75	7,579.04	5,008.95	4,749.73	259.22	19.323			
17,800.00	8,523.00	6,590.00	6,586.51	109.41	178.10	-66.14	3,540.75	7,579.04	5,043.99	4,784.25	259.74	19.419			
17,900.00	8,523.00	6,590.00	6,586.51	110.49	178.10	-66.14	3,540.75	7,579.04	5,080.75	4,820.52	260.23	19.524			
18,000.00	8,523.00	6,590.00	6,586.51	111.57	178.10	-66.14	3,540.75	7,579.04	5,119.21	4,858.51	260.70	19.636			
18,100.00	8,523.00	6,590.00	6,586.51	112.66	178.10	-66.14	3,540.75	7,579.04	5,159.32	4,898.18	261.14	19.757			
18,200.00	8,523.00	6,590.00	6,586.51	113.74	178.10	-66.14	3,540.75	7,579.04	5,201.04	4,939.48	261.55	19.885			

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
18,300.00	8,523.00	6,590.00	6,586.51	114.82	178.10	-66.14	3,540.75	7,579.04	5,244.33	4,982.39	261.94	20.021	
18,400.00	8,523.00	6,590.00	6,586.51	115.90	178.10	-66.14	3,540.75	7,579.04	5,289.17	5,026.86	262.31	20.164	
18,500.00	8,523.00	6,590.00	6,586.51	116.99	178.10	-66.14	3,540.75	7,579.04	5,335.50	5,072.85	262.65	20.314	
18,600.00	8,523.00	6,590.00	6,586.51	118.07	178.10	-66.14	3,540.75	7,579.04	5,383.29	5,120.32	262.96	20.472	
18,700.00	8,523.00	6,590.00	6,586.51	119.16	178.10	-66.14	3,540.75	7,579.04	5,432.50	5,169.24	263.26	20.636	
18,800.00	8,523.00	6,590.00	6,586.51	120.24	178.10	-66.14	3,540.75	7,579.04	5,483.09	5,219.56	263.53	20.806	
18,900.00	8,523.00	6,590.00	6,586.51	121.33	178.10	-66.14	3,540.75	7,579.04	5,535.03	5,271.25	263.78	20.984	
19,000.00	8,523.00	6,590.00	6,586.51	122.42	178.10	-66.14	3,540.75	7,579.04	5,588.27	5,324.26	264.01	21.167	
19,100.00	8,523.00	6,590.00	6,586.51	123.51	178.10	-66.14	3,540.75	7,579.04	5,642.79	5,378.57	264.22	21.356	
19,200.00	8,523.00	6,590.00	6,586.51	124.59	178.10	-66.14	3,540.75	7,579.04	5,698.53	5,434.12	264.41	21.552	
19,235.87	8,523.00	6,590.00	6,586.51	124.99	178.10	-66.14	3,540.75	7,579.04	5,718.82	5,454.35	264.48	21.623	

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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	
14,800.00	8,523.00	6,630.00	6,627.95	77.60	154.10	-65.85	3,401.32	8,925.63	5,213.12	5,003.82	24.908
14,900.00	8,523.00	6,630.00	6,627.95	78.63	154.10	-65.85	3,401.32	8,925.63	5,165.24	4,954.88	24.554
15,000.00	8,523.00	6,630.00	6,627.95	79.67	154.10	-65.85	3,401.32	8,925.63	5,118.87	4,907.42	24.209
15,100.00	8,523.00	6,630.00	6,627.95	80.71	154.10	-65.85	3,401.32	8,925.63	5,074.05	4,861.51	23.873
15,200.00	8,523.00	6,630.00	6,627.95	81.75	154.10	-65.85	3,401.32	8,925.63	5,030.81	4,817.16	23.547
15,300.00	8,523.00	6,630.00	6,627.95	82.80	154.10	-65.85	3,401.32	8,925.63	4,989.21	4,774.44	23.231
15,400.00	8,523.00	6,630.00	6,627.95	83.84	154.10	-65.85	3,401.32	8,925.63	4,949.27	4,733.38	22.925
15,500.00	8,523.00	6,630.00	6,627.95	84.89	154.10	-65.85	3,401.32	8,925.63	4,911.05	4,694.02	22.629
15,600.00	8,523.00	6,630.00	6,627.95	85.94	154.10	-65.85	3,401.32	8,925.63	4,874.58	4,656.41	22.343
15,700.00	8,523.00	6,630.00	6,627.95	87.00	154.10	-65.85	3,401.32	8,925.63	4,839.90	4,620.58	22.068
15,800.00	8,523.00	6,630.00	6,627.95	88.05	154.10	-65.85	3,401.32	8,925.63	4,807.06	4,586.58	21.803
15,900.00	8,523.00	6,630.00	6,627.95	89.11	154.10	-65.85	3,401.32	8,925.63	4,776.08	4,554.45	21.550
16,000.00	8,523.00	6,630.00	6,627.95	90.16	154.10	-65.85	3,401.32	8,925.63	4,747.00	4,524.22	21.308
16,100.00	8,523.00	6,630.00	6,627.95	91.22	154.10	-65.85	3,401.32	8,925.63	4,719.87	4,495.94	21.077
16,200.00	8,523.00	6,630.00	6,627.95	92.28	154.10	-65.85	3,401.32	8,925.63	4,694.71	4,469.63	20.858
16,300.00	8,523.00	6,630.00	6,627.95	93.34	154.10	-65.85	3,401.32	8,925.63	4,671.55	4,445.33	20.650
16,400.00	8,523.00	6,630.00	6,627.95	94.41	154.10	-65.85	3,401.32	8,925.63	4,650.43	4,423.07	20.454
16,500.00	8,523.00	6,630.00	6,627.95	95.47	154.10	-65.85	3,401.32	8,925.63	4,631.38	4,402.89	20.270
16,600.00	8,523.00	6,630.00	6,627.95	96.54	154.10	-65.85	3,401.32	8,925.63	4,614.41	4,384.81	20.097
16,700.00	8,523.00	6,630.00	6,627.95	97.60	154.10	-65.85	3,401.32	8,925.63	4,599.55	4,368.85	19.937
16,800.00	8,523.00	6,630.00	6,627.95	98.67	154.10	-65.85	3,401.32	8,925.63	4,586.83	4,355.04	19.789
16,900.00	8,523.00	6,630.00	6,627.95	99.74	154.10	-65.85	3,401.32	8,925.63	4,576.26	4,343.40	19.652
17,000.00	8,523.00	6,630.00	6,627.95	100.81	154.10	-65.85	3,401.32	8,925.63	4,567.85	4,333.94	19.528
17,100.00	8,523.00	6,630.00	6,627.95	101.88	154.10	-65.85	3,401.32	8,925.63	4,561.62	4,326.68	19.416
17,200.00	8,523.00	6,630.00	6,627.95	102.96	154.10	-65.85	3,401.32	8,925.63	4,557.58	4,321.63	19.316
17,300.00	8,523.00	6,630.00	6,627.95	104.03	154.10	-65.85	3,401.32	8,925.63	4,555.72	4,318.79	19.228
17,334.40	8,523.00	6,630.00	6,627.95	104.40	154.10	-65.85	3,401.32	8,925.63	4,555.59	4,318.33	19.201 CC
17,400.00	8,523.00	6,630.00	6,627.95	105.11	154.10	-65.85	3,401.32	8,925.63	4,556.07	4,318.18	19.152 ES
17,500.00	8,523.00	6,630.00	6,627.95	106.18	154.10	-65.85	3,401.32	8,925.63	4,558.60	4,319.79	19.088
17,600.00	8,523.00	6,630.00	6,627.95	107.26	154.10	-65.85	3,401.32	8,925.63	4,563.33	4,323.61	19.036
17,700.00	8,523.00	6,630.00	6,627.95	108.34	154.10	-65.85	3,401.32	8,925.63	4,570.24	4,329.65	18.996
17,800.00	8,523.00	6,630.00	6,627.95	109.41	154.10	-65.85	3,401.32	8,925.63	4,579.32	4,337.90	18.968
17,900.00	8,523.00	6,630.00	6,627.95	110.49	154.10	-65.85	3,401.32	8,925.63	4,590.57	4,348.34	18.951
18,000.00	8,523.00	6,630.00	6,627.95	111.57	154.10	-65.85	3,401.32	8,925.63	4,603.96	4,360.95	18.946 SF
18,100.00	8,523.00	6,630.00	6,627.95	112.66	154.10	-65.85	3,401.32	8,925.63	4,619.48	4,375.73	18.952
18,200.00	8,523.00	6,630.00	6,627.95	113.74	154.10	-65.85	3,401.32	8,925.63	4,637.10	4,392.64	18.969
18,300.00	8,523.00	6,630.00	6,627.95	114.82	154.10	-65.85	3,401.32	8,925.63	4,656.80	4,411.68	18.997
18,400.00	8,523.00	6,630.00	6,627.95	115.90	154.10	-65.85	3,401.32	8,925.63	4,678.56	4,432.80	19.037
18,500.00	8,523.00	6,630.00	6,627.95	116.99	154.10	-65.85	3,401.32	8,925.63	4,702.35	4,455.98	19.087
18,600.00	8,523.00	6,630.00	6,627.95	118.07	154.10	-65.85	3,401.32	8,925.63	4,728.13	4,481.19	19.147
18,700.00	8,523.00	6,630.00	6,627.95	119.16	154.10	-65.85	3,401.32	8,925.63	4,755.87	4,508.41	19.218
18,800.00	8,523.00	6,630.00	6,627.95	120.24	154.10	-65.85	3,401.32	8,925.63	4,785.54	4,537.58	19.299
18,900.00	8,523.00	6,630.00	6,627.95	121.33	154.10	-65.85	3,401.32	8,925.63	4,817.11	4,568.68	19.391
19,000.00	8,523.00	6,630.00	6,627.95	122.42	154.10	-65.85	3,401.32	8,925.63	4,850.53	4,601.68	19.491
19,100.00	8,523.00	6,630.00	6,627.95	123.51	154.10	-65.85	3,401.32	8,925.63	4,885.77	4,636.52	19.602
19,200.00	8,523.00	6,630.00	6,627.95	124.59	154.10	-65.85	3,401.32	8,925.63	4,922.79	4,673.18	19.722
19,235.87	8,523.00	6,630.00	6,627.95	124.99	154.10	-65.85	3,401.32	8,925.63	4,936.50	4,686.76	19.767

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

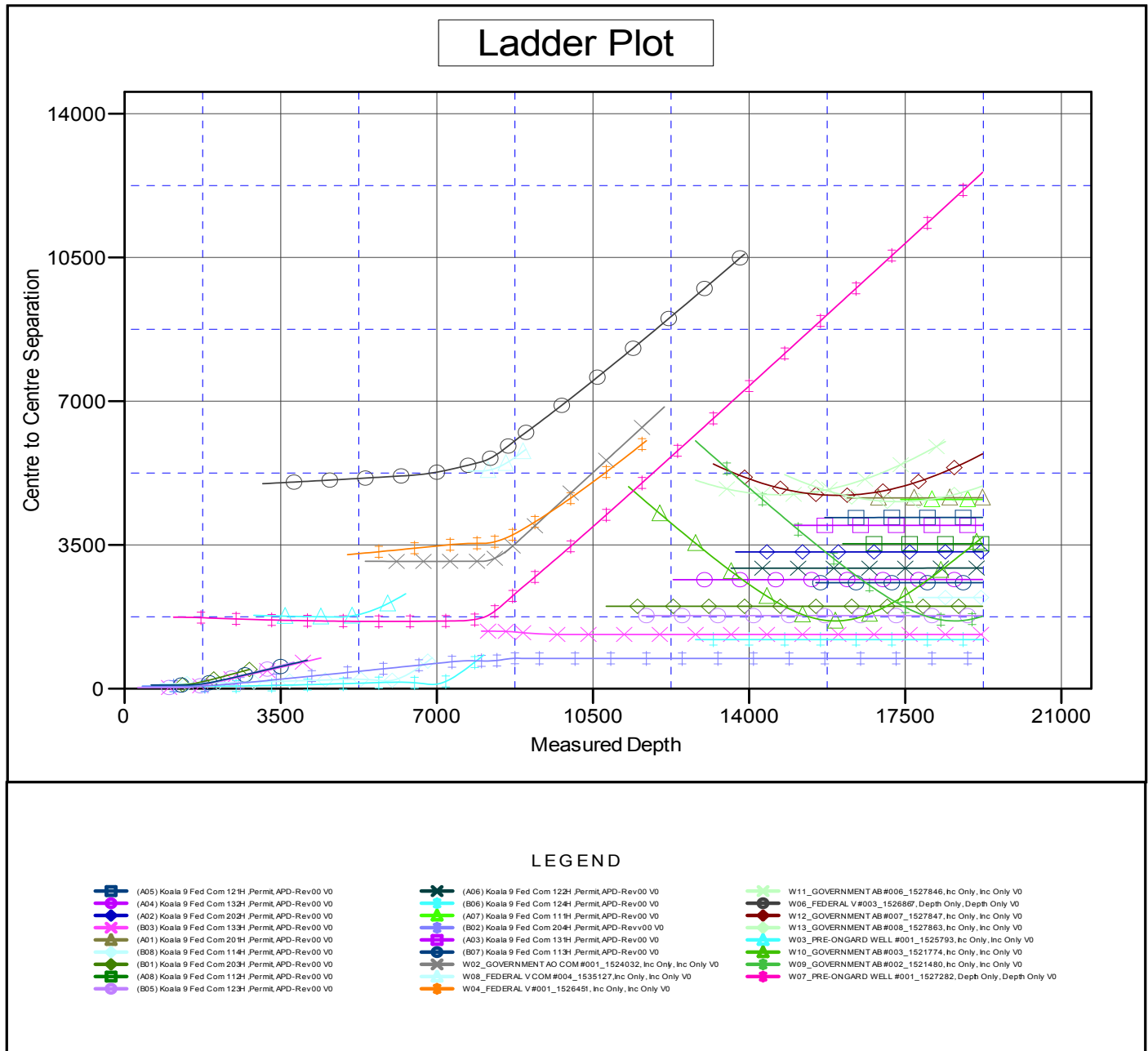


Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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: (B04) Koala 9 Fed Com 134H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.08°



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



Anticollision Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well (B04) Koala 9 Fed Com 134H
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:	(B04) Koala 9 Fed Com 134H	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

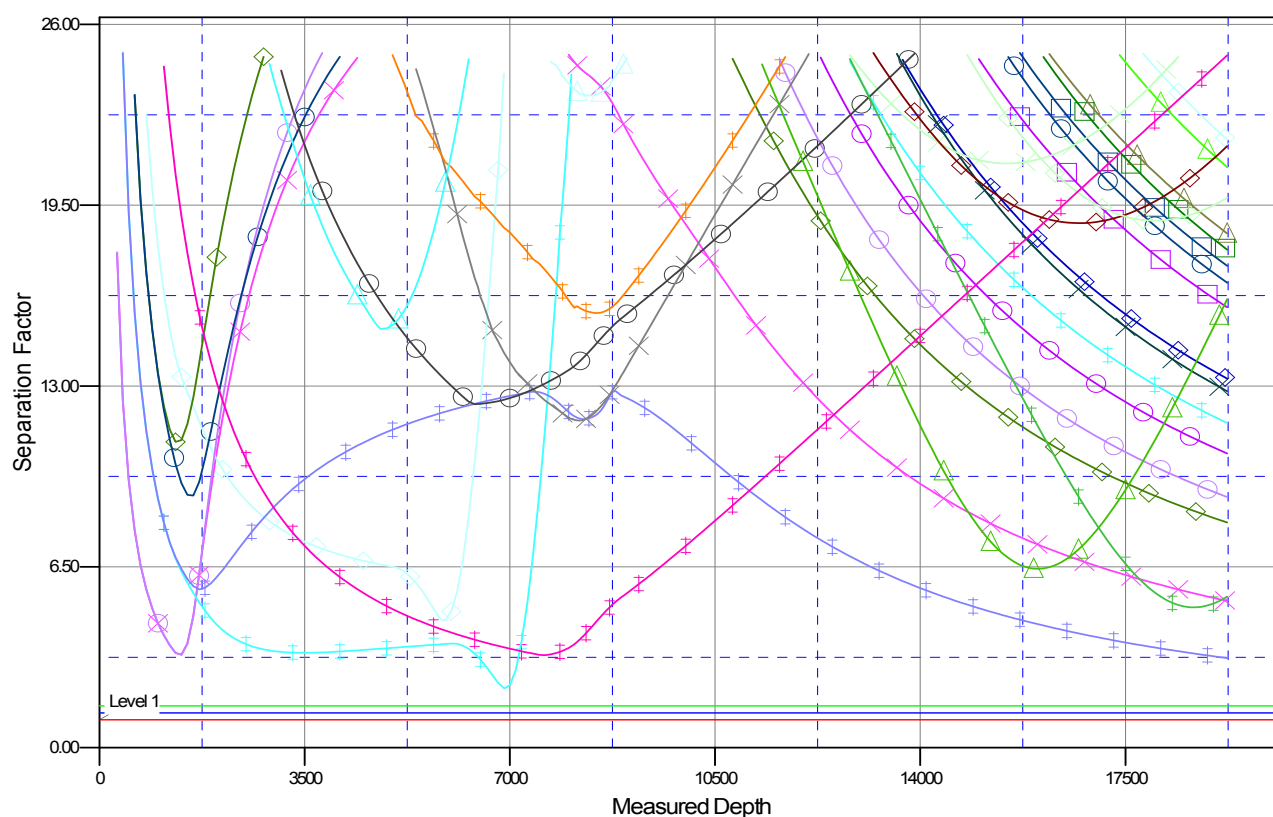
Central Meridian is -104.33333334

Coordinates are relative to: (B04) Koala 9 Fed Com 134H

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	(A06) Koala 9 Fed Com 122H_Permit,APD-Rev00 V0	W11_GOVERNMENT AB #006_1527846, Inc Only, Inc Only V0
(A04) Koala 9 Fed Com 132H_Permit,APD-Rev00 V0	(B06) Koala 9 Fed Com 124H_Permit,APD-Rev00 V0	W06_FEDERAL V #003_1526807, Depth Only, Depth Only V0
(A02) Koala 9 Fed Com 202H_Permit,APD-Rev00 V0	(A07) Koala 9 Fed Com 111H_Permit,APD-Rev00 V0	W12_GOVERNMENT AB #007_1527847, Inc Only, Inc Only V0
(B03) Koala 9 Fed Com 133H_Permit,APD-Rev00 V0	(B02) Koala 9 Fed Com 204H_Permit,APD-Rev00 V0	W13_GOVERNMENT AB #008_1527863, Inc Only, Inc Only V0
(A01) Koala 9 Fed Com 201H_Permit,APD-Rev00 V0	(A03) Koala 9 Fed Com 131H_Permit,APD-Rev00 V0	W03_PRE-ONGARD WELL #001_1525793, Inc Only, Inc Only V0
(B08) Koala 9 Fed Com 114H_Permit,APD-Rev00 V0	(B07) Koala 9 Fed Com 113H_Permit,APD-Rev00 V0	W10_GOVERNMENT AB #003_1521774, Inc Only, Inc Only V0
(B01) Koala 9 Fed Com 203H_Permit,APD-Rev00 V0	W02_GOVERNMENT AD COM #001_1524032, Inc Only, Inc Only V0	W09_GOVERNMENT AB #002_1521480, Inc Only, Inc Only V0
(A08) Koala 9 Fed Com 112H_Permit,APD-Rev00 V0	W08_FEDERAL V COM #004_1535127, Inc Only, Inc Only V0	W07_PRE-ONGARD WELL #001_1527282, Depth Only, Depth Only V0
(B05) Koala 9 Fed Com 123H_Permit,APD-Rev00 V0	W04_FEDERAL V #001_1526491, Inc Only, Inc Only V0	

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

Permian Resources - Koala 9 Fed Com 132H

1. Geologic Formations

Formation	Elevation	TVD	Target
Rustler	-3077	241	No
Top of Salt	-2936	382	No
Capitan	NP	NP	No
Tansill	-2550	768	No
Yates	-2475	843	No
Seven Rivers	-2100	1218	No
Queen	-1509	1809	No
Grayburg	-1300	2018	No
San Andres	-900	2418	No
Delaware Mountain Group	-325	2993	No
Bone Spring Lime	1250	4568	No
1st Bone Spring Sand	2800	6118	No
2nd Bone Spring Sand	3875	7193	No
3rd Bone Spring Sand	4950	8268	Yes

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 Attachment: 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	266	0	266	266	J55	54.5	BTC	8.60	4.02	Dry	7.94	Dry	7.45
Intermediate	12.25	9.625	0	2943	0	2943	2943	J55	36	BTC	2.69	1.60	Dry	3.10	Dry	2.74
Production	8.75	5.5	0	8974	0	8494	8974	P110RY	17	GeoConn	1.69	1.77	Dry	2.23	Dry	2.23
Production	7.875	5.5	8974	19509	8494	8494	10535	P110RY	17	GeoConn	1.69	1.77	Dry	2.23	Dry	2.23
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	Quantity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	266	210	1.34	14.8	280	50%	Class C	Accelerator
Intermediate	Lead	0	2350	520	2.08	12.7	1080	50%	Class C	Salt, Extender, and LCM
Intermediate	Tail	2350	2943	210	1.34	14.8	280	50%	Class C	Accelerator
Production	Lead	2443	8069	810	2.41	11.5	1950	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	8069	19509	1490	1.73	12.5	2570	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 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.

Cuttings Volume: 8720 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	266	Water Based Mud	8.6	9.5
266	2943	Salt Saturated	10	10
2943	8974	Brine	9	10
8974	19509	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	4420	psi
Anticipated Surface Pressure	2548.2	psi
Anticipated Bottom Hole Temperature	142	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

8. Other Information

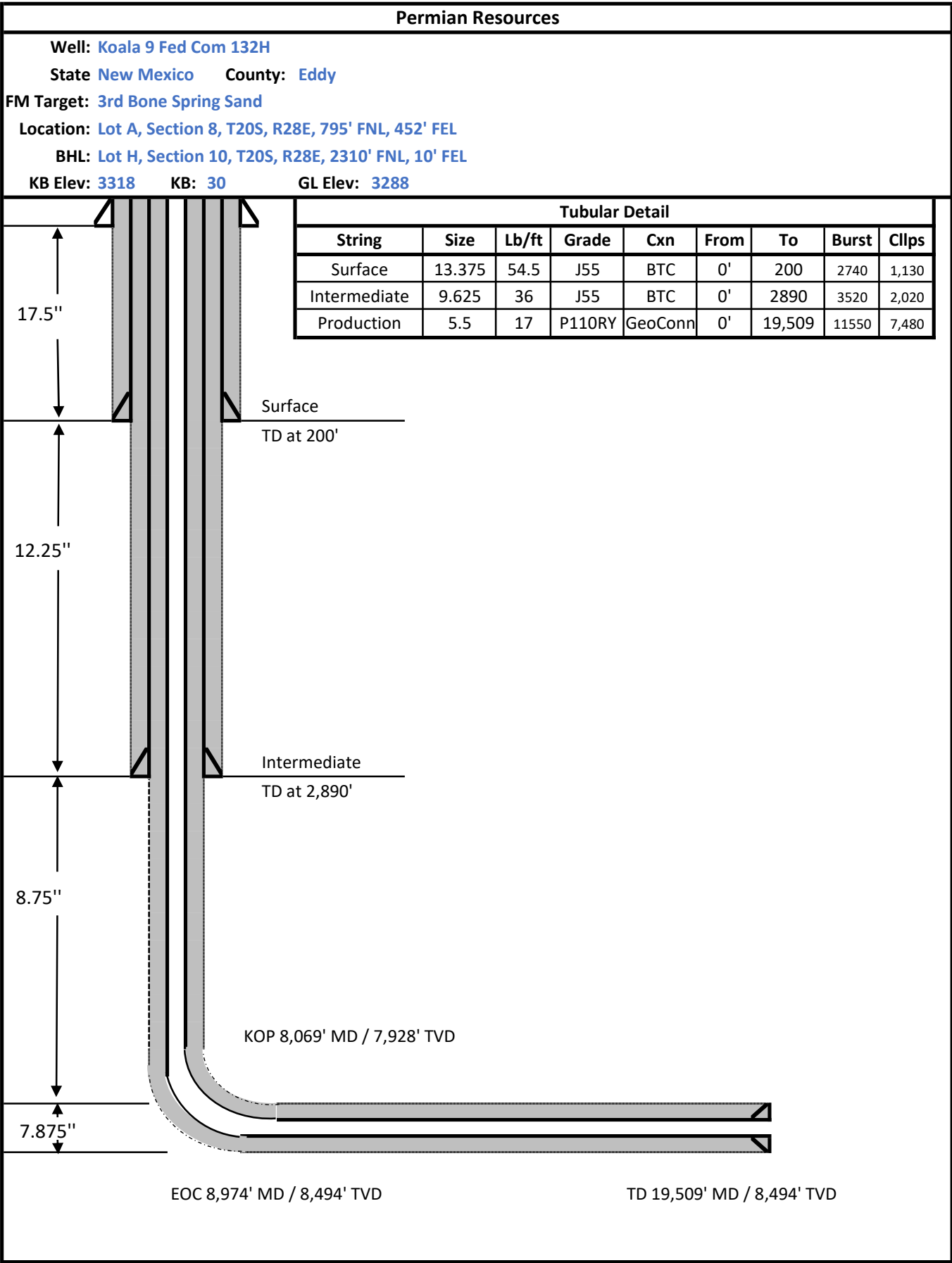
Well Plan and AC Report: attached

Batching Drilling Procedure: attached

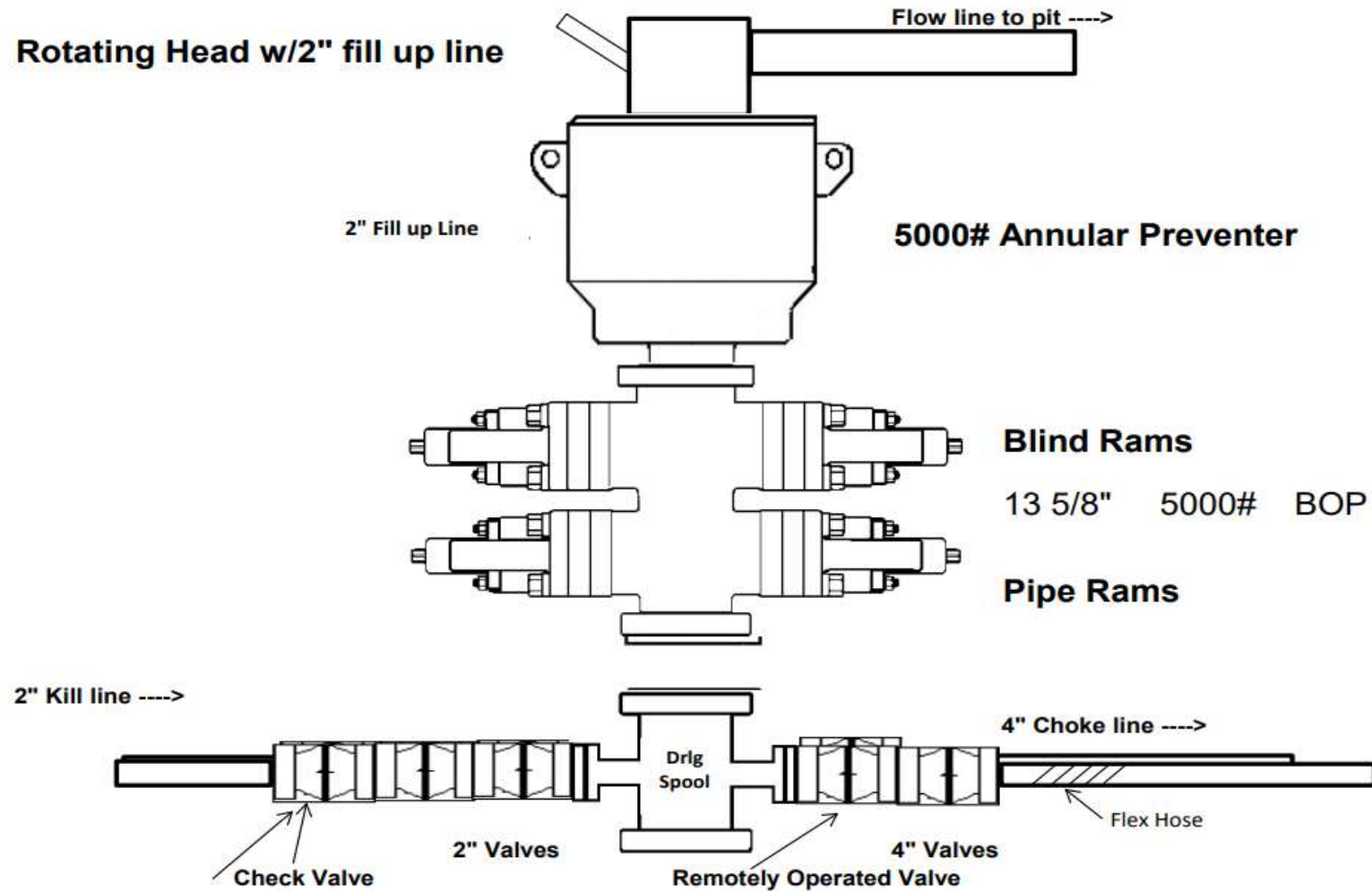
WBD: attached

Flex Hose Specs: attached

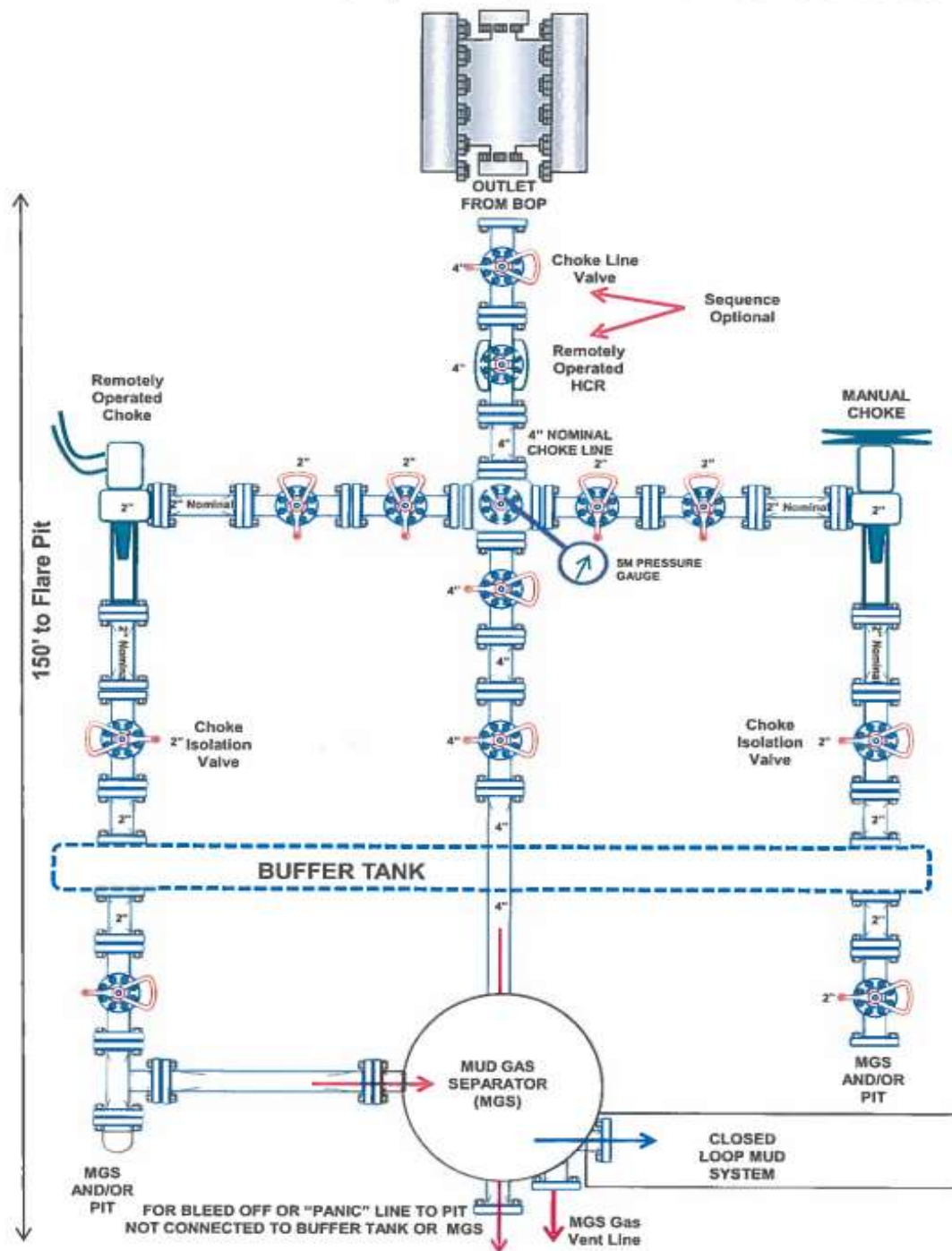
Offline Cementing Procedure Attached:



5,000 psi BOP Schematic



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





ContiTech

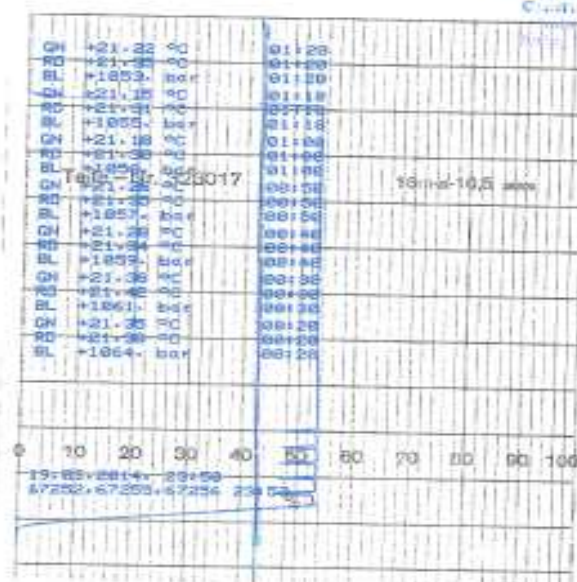
CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 9 / 113

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE		CERT. N°: 504	
PURCHASER: ContiTech Oil & Marine Corp.		P.O. N°: 4500408659	
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 temperature 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	
All metal parts are flawless		Temperature rate:"B"	
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.		ContiTech Rubber Industrial Kft. Quality Control Dept.  	

ContiTech Rubber Industrial Kft. : Budapest 1150, H-8728 Szigetud [H 4701 P.O.Box 322 Szigetud, Hungary]
 Phone: +36 82 584 722 / Fax: +36 82 584 728 / e-mail: info@bud.contitech.hu / info@hu.contitech.hu / www.contitech.hu
 The Court of Company Law of Hungary (Registry Court No. Cg.99-09-00252) / EU VAT No: HU11507208
 Belföldi Adószám: 14020101-20830003

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

Page: 1 / 1





CONTITECH RUBBER
Industrial Kft.

No:QC-DB- 210/ 2014

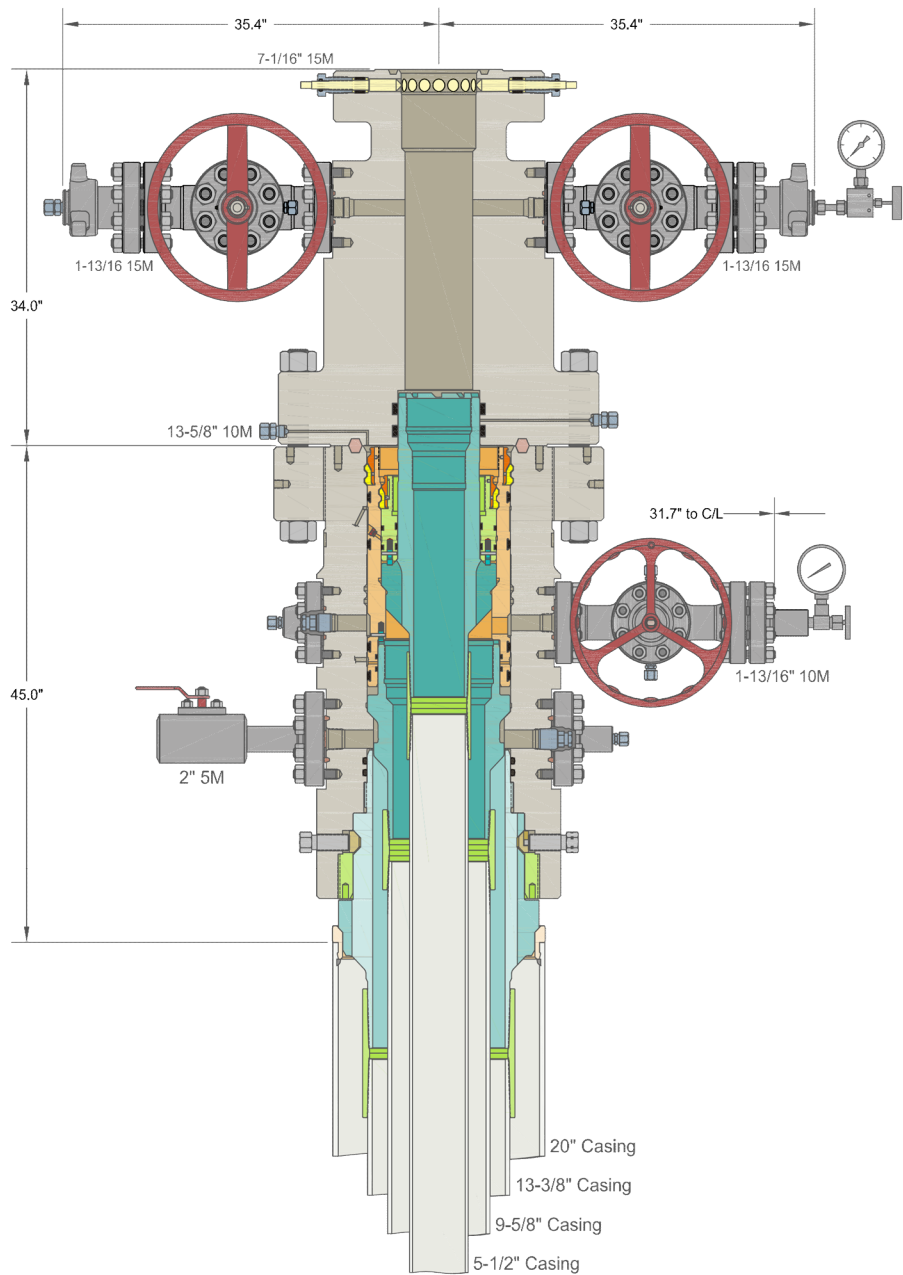
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ContiTech

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

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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	CENTENNIAL RESOURCE DEVELOPMENT LEE CO, NM		
	DRAWN APPRV	DLE	10JUN20
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		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.

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.

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

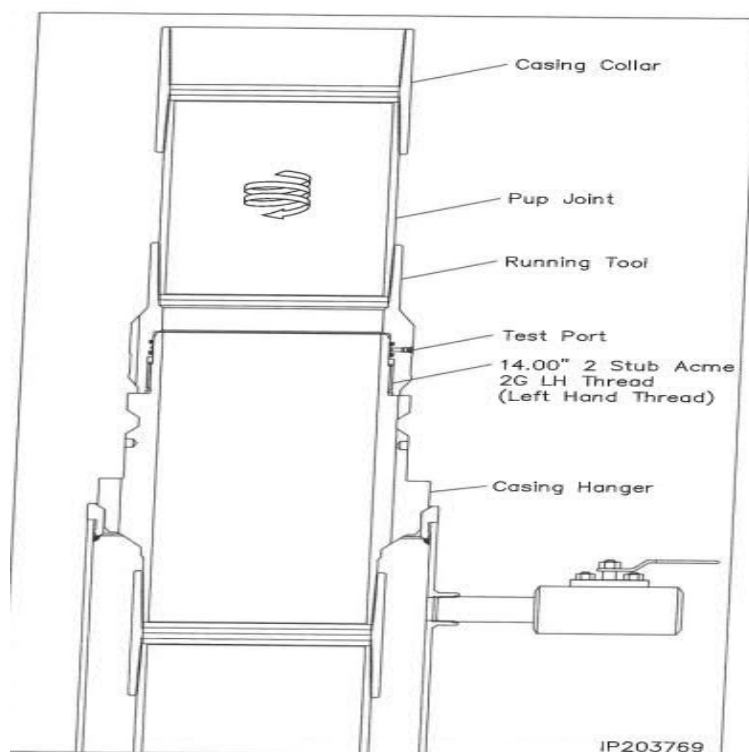


Illustration 1-1

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.

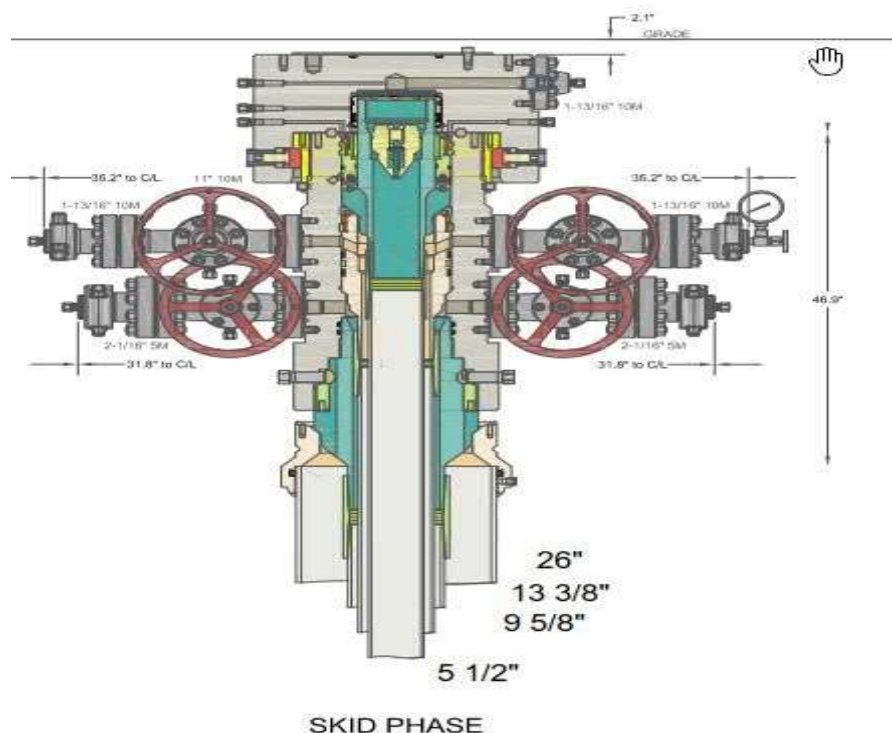


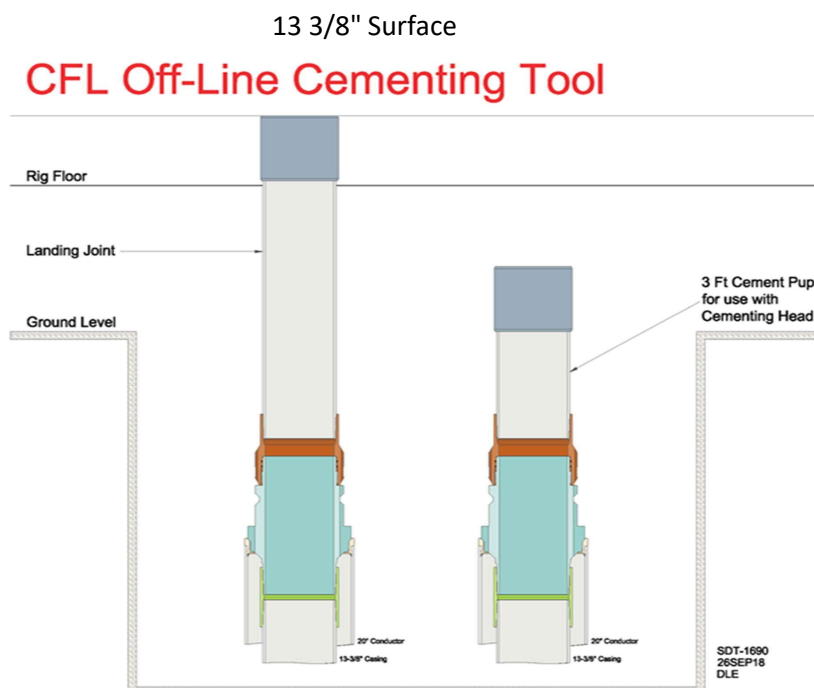
Illustration 2-2

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.

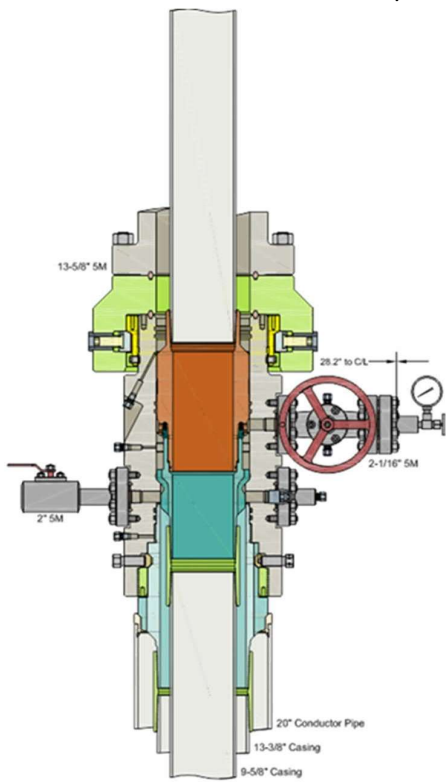
1. Big Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run 5 1/2" 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

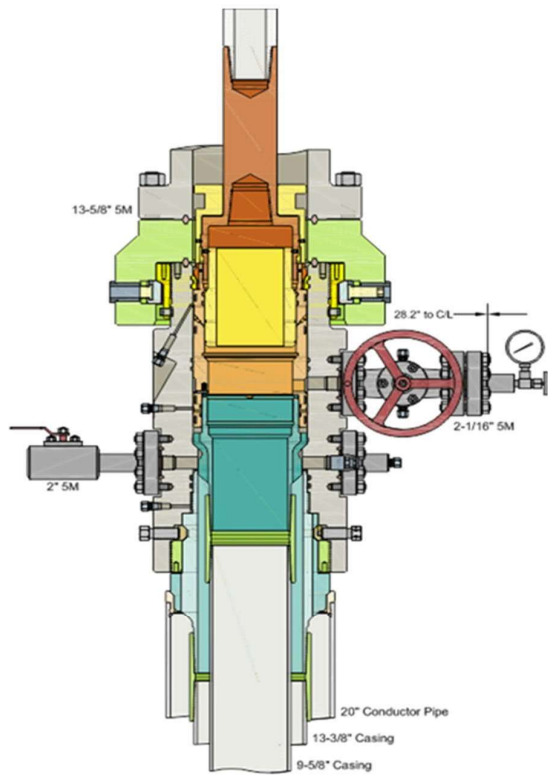
1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and 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.



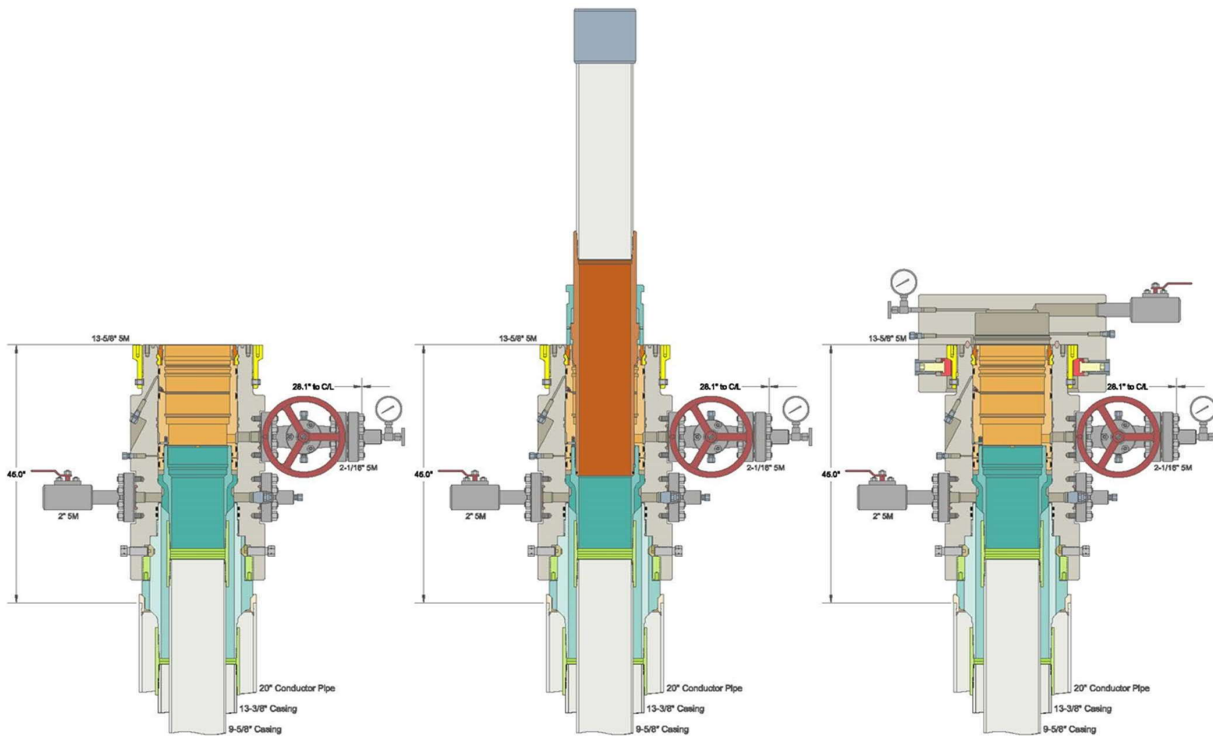
9 5/8" Intermediate



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

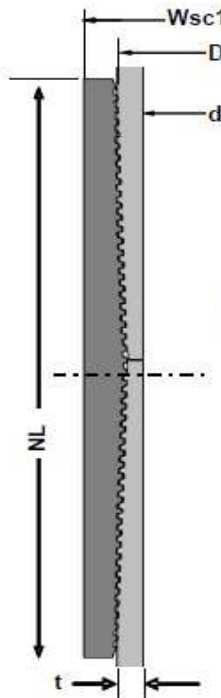


Run 13-5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



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



Geometry		Imperial		S.I.	
Pipe Body					
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		Imperial		S.I.	
Performance Properties for Pipe Body					
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					

Legal Notice

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Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.mto.co.jp/mto-con/ Images/top/WebsiteTerms_Active_20333287_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.



CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 15 / 113
	ContiTech

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

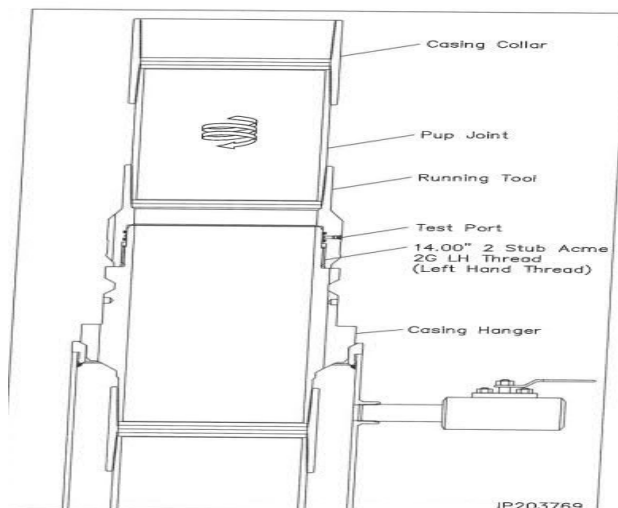
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Permian Resources

Multi-Well Pad Batch Drilling & Off Line Cement Procedure

20" Surface Casing - PR intends to Batch set and offline cement all 20" casing to a depth approved in the APD. 24" Surface Holes will be batch drilled by a big 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 24" Surface hole to Approved Depth with Surface Preset Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run casing with Cactus Multibowl system, with 32" baseplate supported by both 30" Conductor.
3. Circulate 1.5 csg capacity.
4. Flow test – Confirm well is static.
5. Install cap flange.
6. Skid rig to next well on pad
7. 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
8. Install offline cement tool.
9. Rig up cementers.
10. Circulate bottoms up with cement truck
11. Commence planned cement job, take returns through the annulus wellhead valve
12. After plug is bumped confirm floats hold and well is static
13. Perform green cement casing test.
 - a) Test Surface casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
14. Rig down cementers and equipment
15. Install night cap with pressure gauge to monitor.

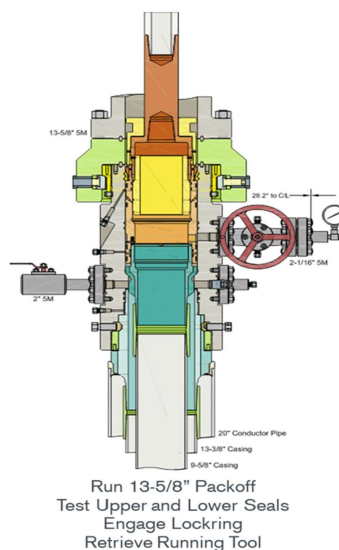
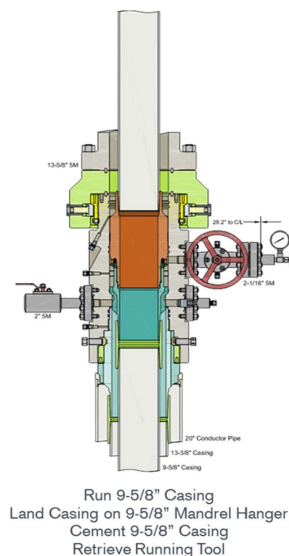


Intermediate 1 Casing – PR intends to Batch set all intermediate 1 casing strings to a depth approved in the APD, typically set into end of salts. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

Rig will remove the nightcap and install and test BOPE (testing will be performed on the first intermediate 1 as per requested break testing variance).

Install wear bushing then drill out 20" shoe-track.

1. Drill 17.5" Intermediate 1 hole to approved casing point. Trip out of hole with BHA to run Casing.
2. Remove wear bushing then run and land Intermediate 13 3/8" 54.5# J-55 BTC casing with mandrel hanger in wellhead.
3. Flow test – Confirm well is static.
4. Set Annular packoff and pressure test. Test to 5k.
5. Install BPV, Nipple down BOP and install cap flange.
6. Skid rig to next well on pad
7. 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
8. Install offline cement tool.
9. Rig up cementers.
10. Circulate bottoms up with cement truck
11. Commence planned cement job, take returns through the annulus wellhead valve
12. After plug is bumped confirm floats hold and well is static
13. Perform green cement casing test.
 - a) Test casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
14. Rig down cementers and equipment
15. Install night cap with pressure gauge to monitor.



Intermediate 2 Casing – PR intends to Batch set all intermediate 2 casing strings to a depth approved in the APD, typically set into Captain past losses. 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 (testing will be performed on the first intermediate 2 as per requested break testing variance).
2. Install wear bushing then drill out 13-3/8" shoe-track.
3. Drill Intermediate 12.25" hole to approved casing point. Trip out of hole with BHA to run Casing.
4. Remove wear bushing then run and land Intermediate 9.625" 40# J-55 BTC casing with mandrel hanger in wellhead.
5. Flow test – Confirm well is static.
6. Set Annular packoff and pressure test. Test to 5k.
7. Install BPV, 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. Perform green cement casing test.
 - a) Test casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
16. Rig down cementers and equipment
17. Install night cap with pressure gauge to monitor.

Production Casing – PR intends to Batch set all Production casings. 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. Install wear bushing then drill Intermediate shoe-track.
3. 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 5-1/2" 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 to surface with floats holding.



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

Bond Info Data

08/29/2023

APD ID: 10400085980

Submission Date: 06/09/2022

Operator Name: COLGATE OPERATING LLC

Well Name: KOALA 9 FED COM

Well Number: 132H

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 258484

CONDITIONS

Operator: Permian Resources Operating, LLC 1001 17th Street, Suite 1800 Denver, CO 80202	OGRID: 372165
	Action Number: 258484
	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	8/31/2023
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	8/31/2023
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	8/31/2023
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	8/31/2023
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	8/31/2023