Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM67102

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.
IRONHORSE 35 FED COM
132H

2. Name of Operator
Colgate Operating LLC

9. API Well No.
30-015-55610

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
300 N MARIENFELD ST SUITE 1000, MIDLAND, TX 797(	(432) 695-4222	Parkway/Bone Spring

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SENE / 1356 FNL / 199 FEL / LAT 32.6206883 / LONG -104.0547843
At proposed prod. zone SENE / 1650 FNL / 100 FEL / LAT 32.6196586 / LONG -104.0201491

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 34/T19S/R29E/NMP

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

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
199 feet		640.0

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
33 feet	9194 feet / 19847 feet	FED: NMB001841

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3314 feet	06/30/2024	30 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	KANICIA SCHLICHTING / Ph: (432) 695-4222	01/05/2024

Title
Regulatory Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	CODY LAYTON / Ph: (575) 234-5959	09/26/2024

Title	Office
Assistant Field Manager Lands & Minerals	Carlsbad Field Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 09/26/2024

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

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

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

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

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

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

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

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

(Continued on page 3)

Additional Operator Remarks

Location of Well

0. SHL: SENE / 1356 FNL / 199 FEL / TWSP: 19S / RANGE: 29E / SECTION: 34 / LAT: 32.6206883 / LONG: -104.0547843 (TVD: 0 feet, MD: 0 feet)

PPP: SWNW / 1650 FNL / 100 FWL / TWSP: 19S / RANGE: 29E / SECTION: 35 / LAT: 32.619875 / LONG: -104.0538165 (TVD: 9184 feet, MD: 9381 feet)

PPP: SWNW / 1650 FNL / 0 FWL / TWSP: 19S / RANGE: 29E / SECTION: 36 / LAT: 32.6197668 / LONG: -104.0369991 (TVD: 9194 feet, MD: 14660 feet)

PPP: SWNE / 1650 FNL / 2644 FEL / TWSP: 19S / RANGE: 29E / SECTION: 36 / LAT: 32.619712 / LONG: -104.0284116 (TVD: 9194 feet, MD: 17304 feet)

PPP: SENE / 1650 FNL / 1318 FEL / TWSP: 19S / RANGE: 29E / SECTION: 35 / LAT: 32.6197946 / LONG: -104.041279 (TVD: 9194 feet, MD: 13342 feet)

BHL: SENE / 1650 FNL / 100 FEL / TWSP: 19S / RANGE: 29E / SECTION: 36 / LAT: 32.6196586 / LONG: -104.0201491 (TVD: 9194 feet, MD: 19847 feet)

BLM Point of Contact

Name: JANET D ESTES
Title: ADJUDICATOR
Phone: (575) 234-6233
Email: JESTES@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.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazon Road, Artec, NM 87410
District IV
1220 S. St Francis Dr., NM 87505
Phone: (505) 476-3460 Fax (505) 476-3462

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-55610		

[4] Property Code	[5] Property Name	[6] Well Number
336450	IRONHORSE 35-36 FED STATE COM	#132H

[7] OGRID No.	[8] Operator Name	[9] Elevation
	COLGATE OPERATING, LLC	3,314'

[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
H	34	19 S	29 E		1,356'	NORTH	199'	EAST	EDDY

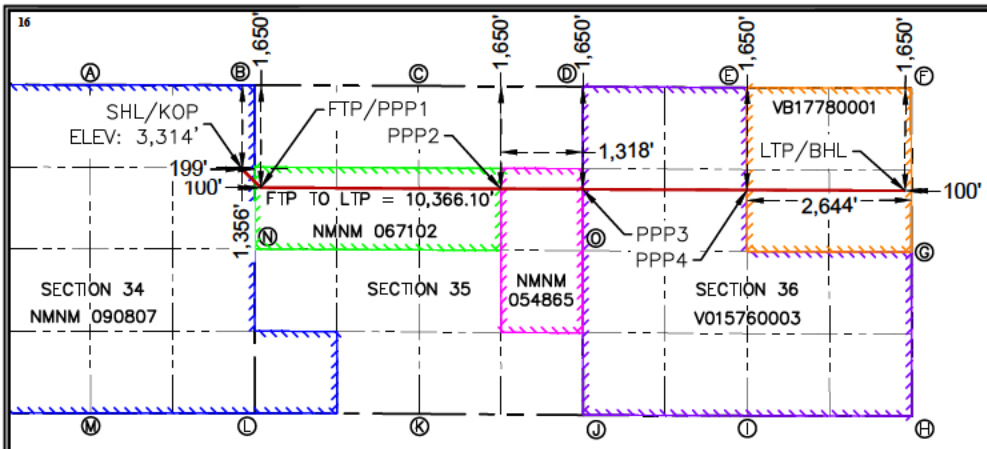
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	36	19 S	29 E		1,650'	NORTH	100'	EAST	EDDY

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

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

[16]



SURFACE HOLE LOCATION & KICK-OFF POINT	FIRST TAKE POINT & PENETRATION POINT 1	PENETRATION POINT 2	PENETRATION POINT 3
1,356' FNL & 199' FEL	1,650' FNL & 100' FWL	1,650' FNL & 1,318' FEL	1,650' FNL & 0' FWL
NM EAST-NAD 83	NM EAST-NAD 83	NM EAST-NAD 83	NM EAST-NAD 83
NORTH:589,649.60'	NORTH:589,354.51'	NORTH:589,335.62'	NORTH:589,329.17'
EAST:627,097.76'	EAST:627,396.50'	EAST:631,256.71'	EAST:631,574.45'
LAT:32.62068831	LAT:32.61987506	LAT:32.61979460	LAT:32.61976685
LONG:-104.05478434	LONG:-104.05381659	LONG:-104.04127906	LONG:-104.03699919
NM EAST-NAD 27	NM EAST-NAD 27	NM EAST-NAD 27	NM EAST-NAD 27
NORTH:589,587.56'	NORTH:589,292.48'	NORTH:589,273.56'	NORTH:589,267.10'
EAST:585,917.72'	EAST:586,216.45'	EAST:590,076.65'	EAST:591,394.39'
LAT:32.62055994	LAT:32.61975667	LAT:32.61967608	LAT:32.61964829
LONG:-104.05427934	LONG:-104.05331164	LONG:-104.04077442	LONG:-104.03649466

PENETRATION POINT 4	LAST TAKE POINT & BOTTOM HOLE LOCATION
1,650' FNL & 2,644' FEL	1,650' FNL & 100' FEL
NM EAST-NAD 83	NM EAST-NAD 83
NORTH:589,316.69'	NORTH:589,304.69'
EAST:635,218.48'	EAST:637,762.47'
LAT:32.61971200	LAT:32.61965866
LONG:-104.02841168	LONG:-104.02014912
NM EAST-NAD 27	NM EAST-NAD 27
NORTH:589,254.60'	NORTH:589,242.58'
EAST:594,038.42'	EAST:596,582.41'
LAT:32.61959334	LAT:32.61953992
LONG:-104.02790736	LONG:-104.01964501

CORNER COORDINATES NEW MEXICO EAST - NAD 83	
A-CALCULATED CORNER	H-FOUND IRON PIPE
N:591,009.51' E:624,651.10'	N:585,677.60' E:637,869.26'
B-FOUND IRON ROD	I-FOUND IRON PIPE
N:591,005.03' E:627,295.65'	N:585,685.41' E:635,223.20'
C-FOUND NAIL	J-FOUND IRON PIPE
N:590,992.09' E:629,932.85'	N:585,696.70' E:632,580.53'
D-FOUND IRON ROD	K-FOUND IRON ROD
N:590,979.17' E:632,572.41'	N:585,715.65' E:629,950.81'
E-FOUND IRON ROD	L-FOUND IRON PIPE
N:590,963.34' E:635,216.34'	N:585,728.26' E:627,298.35'
F-FOUND IRON PIPE	M-FOUND IRON PIPE
N:590,954.37' E:637,859.25'	N:585,726.61' E:624,659.03'
G-FOUND IRON PIPE	N-CALCULATED CORNER
N:588,317.17' E:637,864.40'	N:588,366.64' E:627,297.00'
	O-FOUND IRON ROD
	N:588,339.27' E:632,575.67'

[17] OPERATOR CERTIFICATION

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

Signature Date

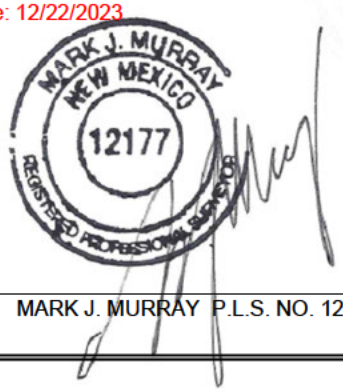
Printed Name Date

Email Address Date

[18] SURVEYOR CERTIFICATION

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

Date: 12/22/2023



MARK J. MURRAY P.L.S. NO. 12177

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description
Effective May 25, 2021

I. Operator: Colgate Operating LLC **OGRID:** 371449 **Date:** 9/30/24

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
[redacted]						

IV. Central Delivery Point Name: Black Diamond CTB [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Ironhorse 35 Fed Com 131H	TBD	**1/5/25**	**TBD**	**TBD**	**TBD**	**TBD**
Ironhorse 35 Fed Com 132H	TBD	**1/5/25**	**TBD**	**TBD**	**TBD**	**TBD**
Ironhorse 35 Fed Com 171H	TBD	**1/5/25**	**TBD**	**TBD**	**TBD**	**TBD**
Ironhorse 35 Fed Com 172H	TBD	**1/5/25**	**TBD**	**TBD**	**TBD**	**TBD**
Ironhorse 35 Fed Com 200H	TBD	**1/5/25**	**TBD**	**TBD**	**TBD**	**TBD**
Ironhorse 35 Fed Com 201H	TBD	**1/5/25**	**TBD**	**TBD**	**TBD**	**TBD**

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF
[redacted]		[redacted]	[redacted]

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☒ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☒ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☒ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☒ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☒ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☐ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☒ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

Well Shut-In. ☒ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: Jessica Dooling
Printed Name: Jessica Dooling
Title: Regulatory Specialist
E-mail Address: Jessica.dooling@permianres.com
Date: 9/30/24
Phone: 432-999-3072

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

Colgate Operating, LLC (371449)

Natural Gas Management Plan Descriptions

VI. Separation Equipment:

Colgate utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations. Our goal is to maintain 5 minutes of retention time in the test vessel and 20 minutes in the heater treater at peak production rates. The gas produced is routed from the separator to the gas sales line.

VII. Operational Practices:

Drilling

During Colgate's drilling operations it is uncommon for venting or flaring to occur. If flaring is needed due to safety concerns, gas will be routed to a flare and volumes will be estimated.

Flowback

During completion/recompletion flowback operations, after separation flowback begins and as soon as it is technically feasible, Colgate routes gas though a permanent separator and the controlled facility where the gas is either sold or flared through a high-pressure flare if needed.

Production

Per 19.15.27.8.D, Colgate's facilities are designed to minimize waste. Our produced gas will only be vented or flared in an emergency or malfunction situation, except as allowed for normal operations noted in 19.15.27.8.D(2) & (4). All gas that is flared is metered. All gas that may be vented will be estimated.

Performance Standards

Colgate utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations.

All of Permian's permanent storage tanks associated with production operations which are routed to a flare or control device are equipped with an automatic gauging system.

All of Permian's flare stacks, both currently installed and for future installation, are:

1) Appropriately sized and designed to ensure proper combustion efficiency.
2) Equipped with an automatic ignitor or continuous pilot.
3) Anchored and located at least 100 feet from the well and storage tanks.

Colgate's field operations and HSE teams have implemented an AVO inspection schedule that adheres to the requirements of 19.15.27.8.E(5).

All of our operations and facilities are designed to minimize waste. We routinely employ the following methods and practices:

- Closed-loop systems
- Enclosed and properly sized tanks

- Vapor recovery units to maximize recovery of low-pressure gas streams and potential unauthorized emissions
- Low-emitting or electric engines whenever practical
- Combustors and flare stacks in the event of a malfunction or emergency
- Routine facility inspections to identify leaking components, functioning control devices, such as flares and combustors, and repair / replacement of malfunctioning components where applicable

Measurement or estimation

Colgate measures or estimates the volumes of natural gas vented, flared and/or beneficially used for all of our drilling, completing and producing wells. We utilize accepted industry standards and methodology which can be independently verified. Annual GOR testing is completed on our wells and will be submitted as required by the OCD. None of our equipment is designed to allow diversion around metering elements except during inspec-tion, maintenance and repair operations.

VIII. Best Management Practices:

Colgate utilizes the following BMPs to minimize venting during active and planned maintenance activities:

- Use a closed-loop process wherever possible during planned maintenance activities, such as blowdowns, liquid removal, and work over operations.
- Employ low-emitting or electric engines for equipment, such as compressors
- Adhere to a strict preventative maintenance program which includes routine facility inspections, identification of component malfunctions, and repairing or replacing components such as hatches, seals, valves, etc. where applicable
- Utilize vapor recovery units (VRU's) to maximize recovery of volumes of low-pressure gas streams and potential unauthorized emissions
- Route low pressure gas and emissions streams to a combustion device to prevent venting where necessary

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

Drilling Plan Data Report
09/30/2024

APD ID: 10400096596
Submission Date: 01/05/2024
Operator Name: COLGATE OPERATING LLC
Well Name: IRONHORSE 35 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 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
14220641	RUSTLER	3182	162	162	SANDSTONE	USEABLE WATER	N
14220642	TOP SALT	2293	889	889	SALT	NONE	N
14220643	TANSILL	1928	1254	1254	ANHYDRITE, SHALE	NONE	N
14220644	YATES	1778	1404	1404	ANHYDRITE, SHALE	NONE	N
14220645	SEVEN RIVERS	1572	1610	1610	LIMESTONE	NONE	N
14220646	CAPITAN REEF	408	2774	2774	LIMESTONE	NONE	N
14220647	CHERRY CANYON	-228	3410	3410	SANDSTONE	NATURAL GAS, OIL	N
14220648	BRUSHY CANYON	-388	3570	3570	SANDSTONE	NATURAL GAS, OIL	N
14220649	BONE SPRING LIME	-2526	5708	5708	LIMESTONE	NATURAL GAS, OIL	N
14220650	BONE SPRING 1ST	-3923	7105	7105	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
14220651	BONE SPRING 2ND	-4692	7874	7874	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
14220652	BONE SPRING 3RD	-5612	8794	8794	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M
Rating Depth: 9194

Equipment: BOPE will meet all requirements for above listed system per 43 CFR 3172. 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 of the components installed will be functional, tested, and will meet all requirements per 43 CFR 3172. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing of the surface x intermediate annulus without breaking the connection between the BOP & wellhead. A variance is requested to utilize a flexible choke line (flexhose)

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM **Well Number:** 132H

from the BOP to choke manifold.

Requesting Variance? YES

Variance request: Multibowl Wellhead, Flexhose, Breaktesting, Offline Cementing Variances. Attachments in Section 8.

Testing Procedure: Operator requests to ONLY test broken pressure seals per API Standard 53 and the attachments in Section 8. 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 21-day intervals. Testing of the ram type preventer(s) and annual type preventer(s) shall be tested per 43 CFR 3172. The BOPE configuration, choke manifold layout, and accumulator system will be in compliance with 43 CFR 3172. Bleed lines will discharge 100' from wellhead in non-H2S scenarios and 150' from wellhead in H2S scenarios.

Choke Diagram Attachment:

Ironhorse_35_Fed_5MCM_20240729043540.pdf

BOP Diagram Attachment:

Ironhorse_35_Fed_5MBOP_20240729043543.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	26	20.0	NEW	API	N	0	187	0	187	3314	3127	187	J-55	94	ST&C	5.63	2.85	DRY	4.94	DRY	9.16
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	1279	0	1279	3314	2035	1279	J-55	40	BUTT	5.12	3.23	DRY	5.64	DRY	6.01
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3360	0	3360	3314	-46	3360	J-55	40	BUTT	3.33	1.72	DRY	3.05	DRY	2.69
4	PRODUCTION	8.75	5.5	NEW	API	N	0	9481	0	9194	3314	-5880	9481	P-110	17	OTHER - GEOCONN	1.56	1.63	DRY	2.13	DRY	2.13
5	PRODUCTION	7.875	5.5	NEW	API	N	9481	19847	9194	9194	-5880	-5880	10366	P-110	17	OTHER - GEOCONN	1.56	1.63	DRY	2.13	DRY	2.13

Casing Attachments

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM **Well Number:** 132H

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_132H_Csg_Assump_20240729043620.pdf

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_132H_Csg_Assump_20240729043602.pdf

Casing ID: 3 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_132H_Csg_Assump_20240729043613.pdf

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM **Well Number:** 132H

Casing Attachments

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_132H_Csg_Assump_20240729043636.pdf

Casing ID: 5 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ironhorse_35_Fed_132H_Csg_Assump_20240729043629.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	187	330	1.34	14.8	430	50	Class C	Accelerator
INTERMEDIATE	Lead		0	1020	570	1.88	12.9	1060	50	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
INTERMEDIATE	Tail		1020	1279	210	1.34	14.8	270	50	Class C	Retarder
INTERMEDIATE	Lead		0	2680	610	1.88	12.9	1130	50	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 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
INTERMEDIATE	Tail		2680	3360	210	1.33	14.8	270	25	Class C	Salt
PRODUCTION	Lead		2860	8731	850	2.41	11.5	2030	40	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
PRODUCTION	Tail		8731	19847	1440	1.73	12.5	2490	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

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	187	SPUD MUD	8.6	9.5							
187	1279	SALT SATURATED	10	10							
1279	9481	WATER-BASED MUD	9	10							
9481	19847	OIL-BASED MUD	9	10							

Operator Name: COLGATE OPERATING LLC

Well Name: IRONHORSE 35 FED COM **Well Number:** 132H

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: 4790 **Anticipated Surface Pressure:** 2767

Anticipated Bottom Hole Temperature(F): 148

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

Black_Diamond_Ironhorse_H2S_Plan_20240105083527.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

IRONHORSE_35_FED_132H_PWP0_SVY_RPT_20240105111737.pdf
IRONHORSE_35_FED_132H_PWP0_AC_RPT_20240105111737.pdf

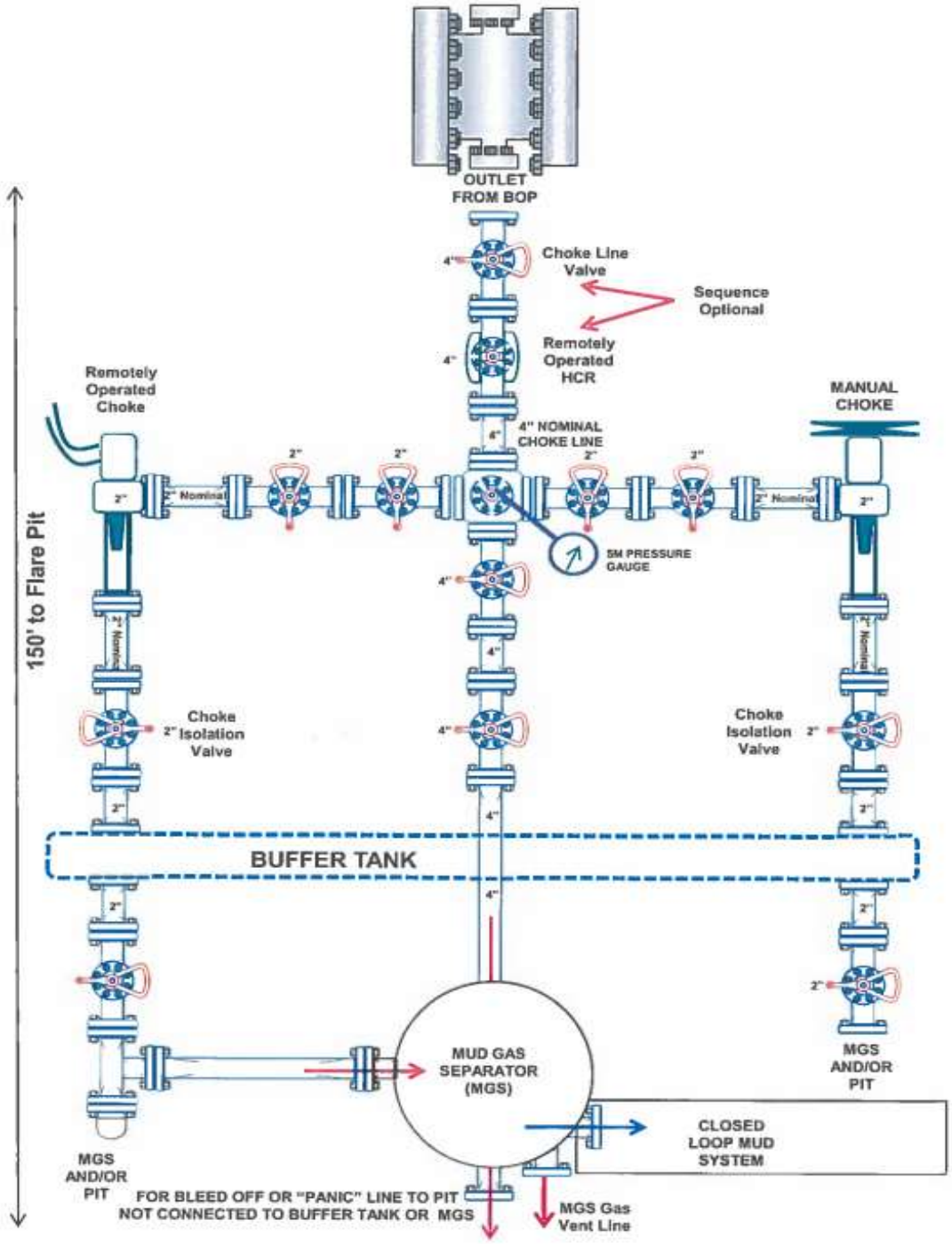
Other proposed operations facets description:

Other proposed operations facets attachment:

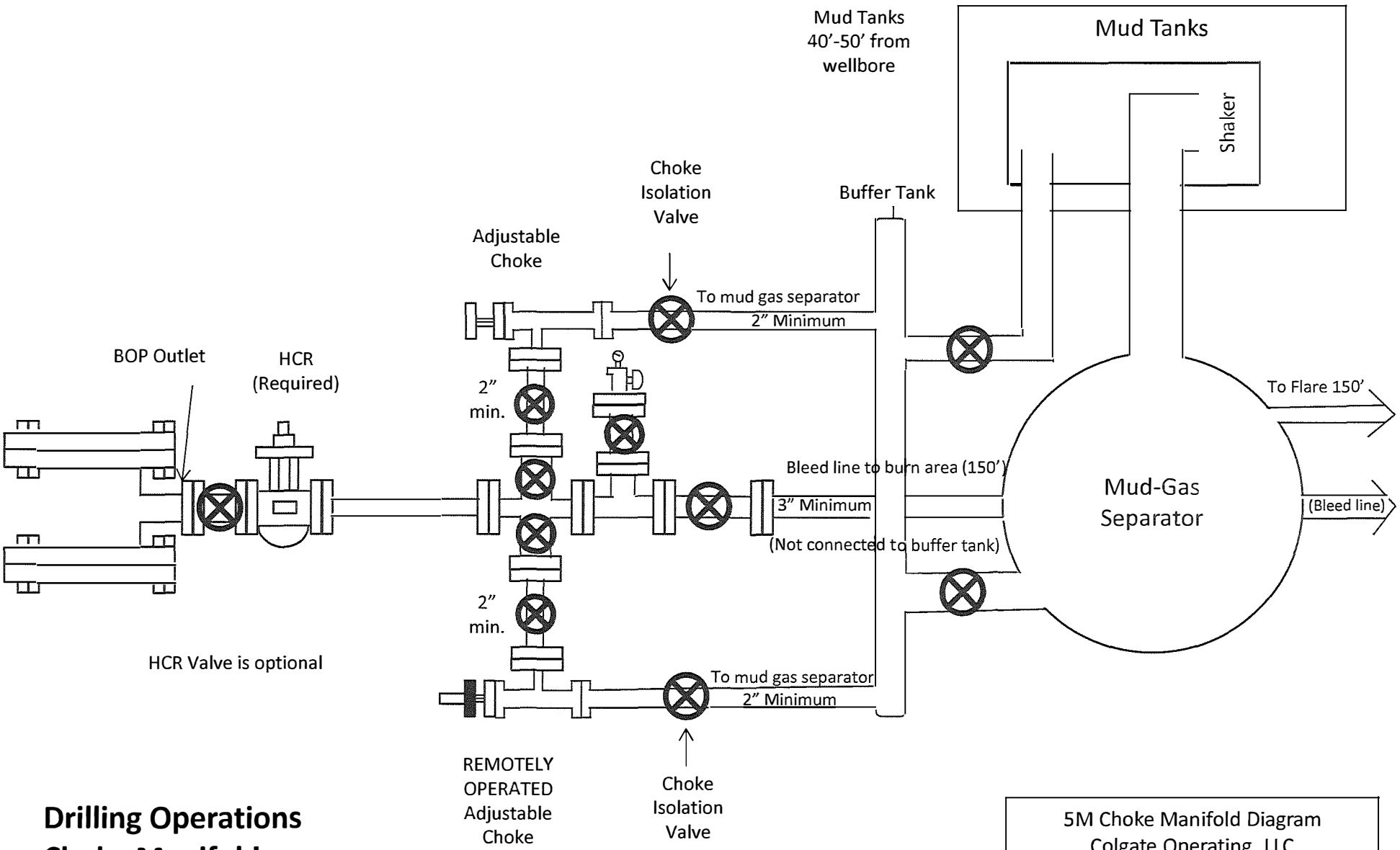
Other Variance attachment:

Ironhorse_35_Fed_MBS_20240729043716.pdf
Ironhorse_35_Fed_Break_20240729043716.pdf
Ironhorse_35_Fed_Batch_20240729043716.pdf
Ironhorse_35_Fed_FH_20240729043716.pdf
Ironhorse_35_Fed_OLCV_20240729043716.pdf

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



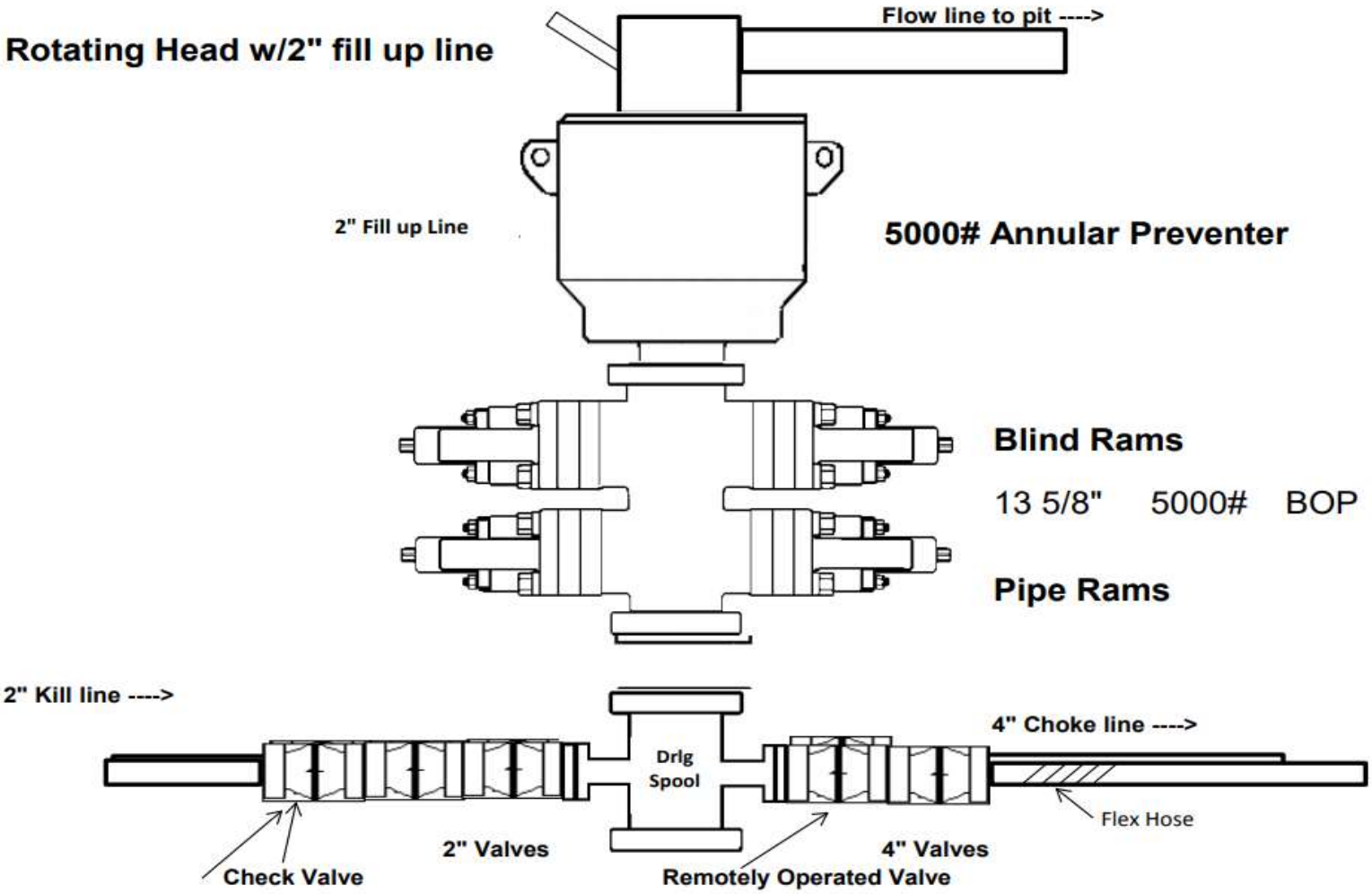
Bleed lines will discharge 100’ from WH in non-H2S scenarios and 150’ from WH in H2S scenarios.

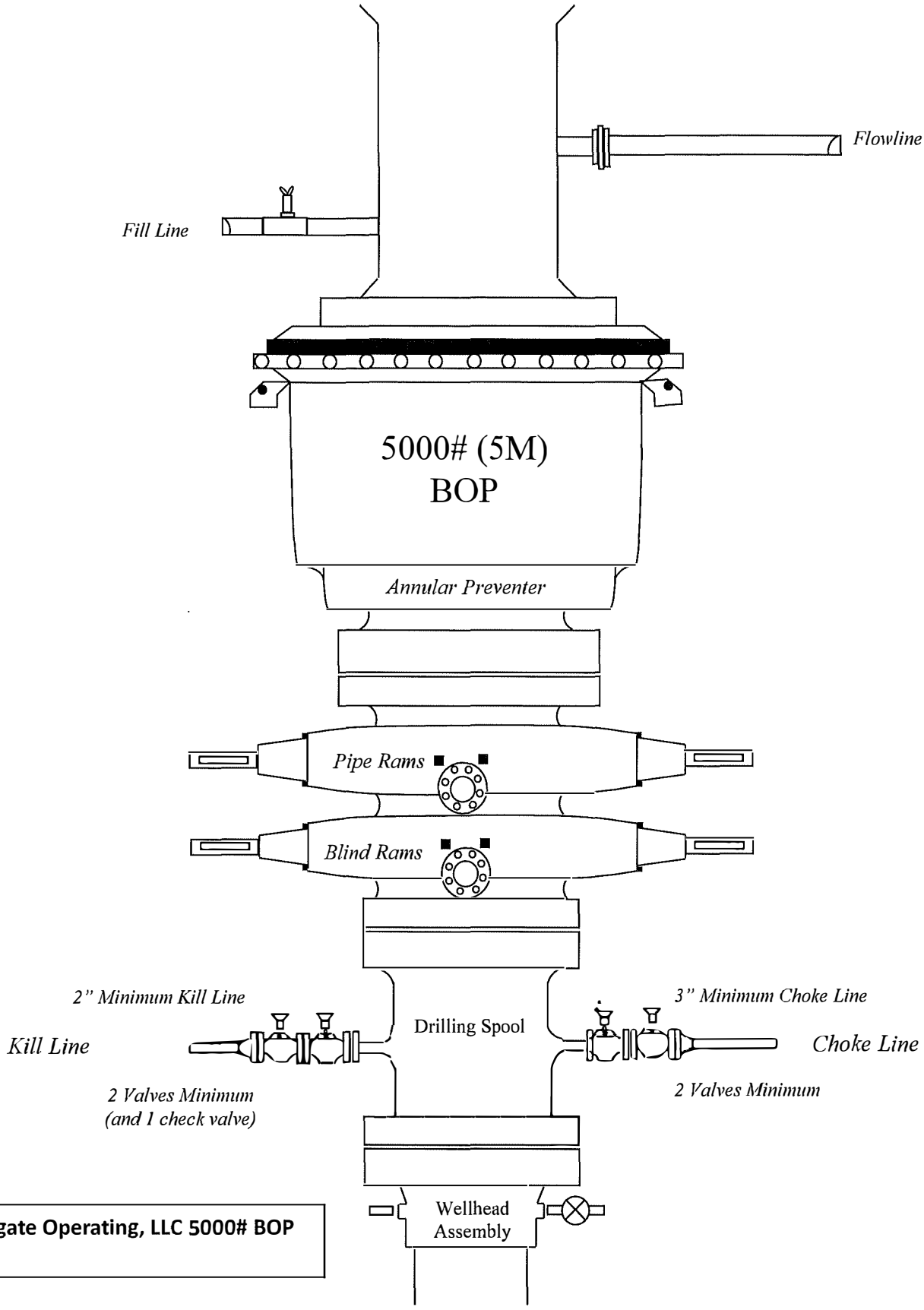


Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
Colgate Operating, LLC

5,000 psi BOP Schematic





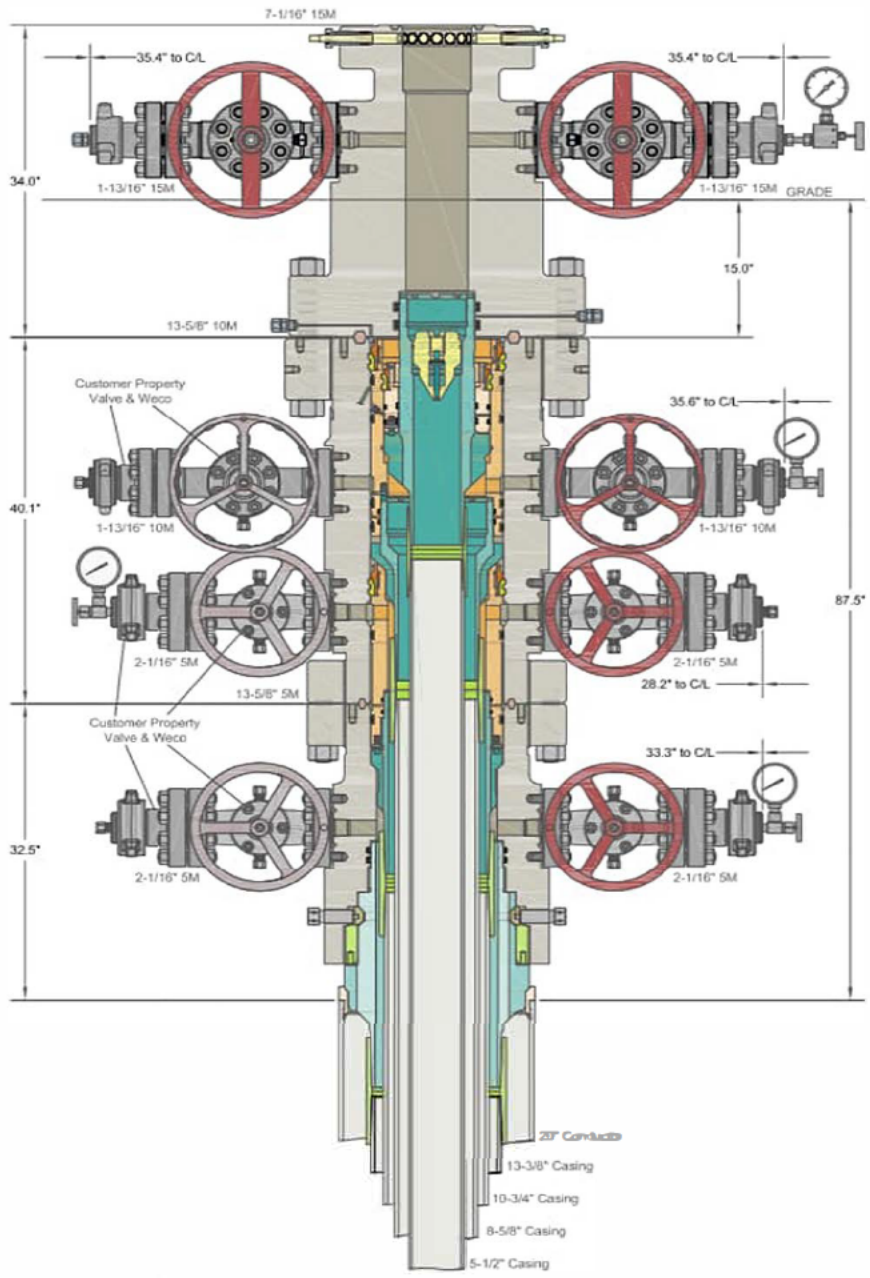
Colgate Operating, LLC 5000# BOP

Bleed lines will discharge 100' from WH in non-H2S scenarios and 150' from WH in H2S scenarios.

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	26	20	0	187	0	187	187	J55	94	STC	5.63	2.85	Dry	4.94	Dry	9.16
Intermediate 1	17.5	13.375	0	1279	0	1279	1279	J55	40	BTC	5.12	3.23	Dry	5.64	Dry	6.01
Intermediate 2	12.25	9.625	0	3360	0	3360	3360	J55	40	BTC	3.33	1.72	Dry	3.05	Dry	2.69
Production	8.75	5.5	0	9481	0	9194	9481	P110RY	17	GeoConn	1.56	1.63	Dry	2.13	Dry	2.13
Production	7.875	5.5	9481	19847	9194	9194	10366	P110RY	17	GeoConn	1.56	1.63	Dry	2.13	Dry	2.13
								BLM Min Safety Factor			1.125	1		1.6		1.6

Non API casing spec sheets and casing design assumptions attached.



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	Colgate Operating LLC NEW MEXICO		
20" x 13-3/8" x 10-3/4" x 8-5/8" x 5-1/2" MBU-4T-CFL-R-DBLO Sys. With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head And 10-3/4" & 7-5/8" & 5-1/2" Fluted Mandrel Casing Hangers	DRAWN	DLE	26OCT23
	APPRV		
	DRAWING NO.	HBE0001038	

Colgate Operating LLC

BOP Break Testing Variance Procedure

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE). Colgate Operating (Colgate) requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

Background

Title 43 CFR 3172, Drilling Operations, Sections 6.b.9.iv states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. 43 CFR 3172.13, Variances from minimum standards states, "An operator may request the authorized officer to approve a variance from any of the minimum standards prescribed in §§ 3172.6 through 3172.12. All such requests shall be submitted in writing to the appropriate authorized officer and provide information as to the circumstances which warrant approval of the variance(s) requested and the proposed alternative methods by which the related minimum standard(s) are to be satisfied. The authorized officer, after considering all relevant factors, if appropriate, may approve the requested variance(s) if it is determined that the proposed alternative(s) meet or exceed the objectives of the applicable minimum standard(s).". Colgate Operating feels the break testing the BOPE is such a situation. Therefore, as per 43 CFR 3172.13, Colgate submits this request for the variance.

Supporting Documentation

The language used in 43 CFR 3172 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time, there have been significant changes in drilling technology. The BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since 43 CFR 3172 was originally released. The Colgate drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

Figure 1: Winch System attached to BOP Stack

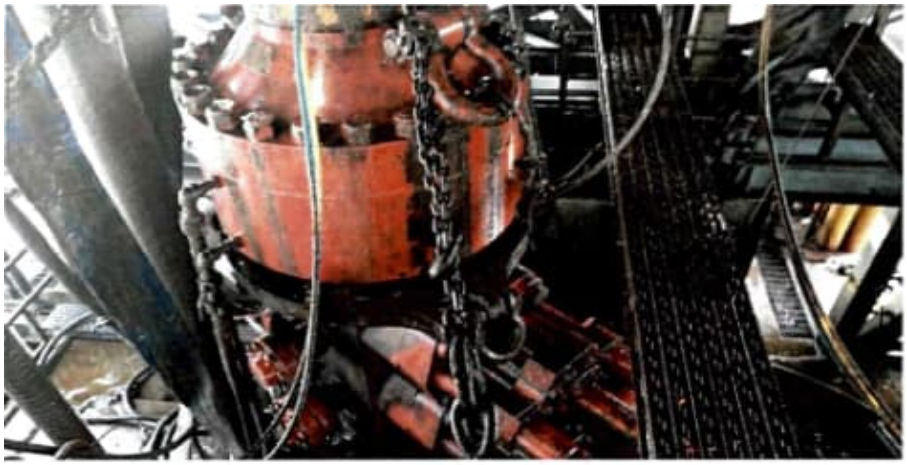


Figure 2: BOP Winch System

American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. 43 CFR 3172 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component." See Table C.4 below for reference.

62 API STANDARD 53

Table C.4—Initial Pressure Testing, Surface BOP Stacks

Component to be Pressure Tested	Pressure Test—Low Pressure[a][c] psig (MPa)	Pressure Test—High Pressure[a][c]	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer[b]	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers[a][c]	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes[e]	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes[e]	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	

[a] Pressure test evaluation periods shall be a minimum of five minutes.
No visible leaks.
The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure.

[b] Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

[c] For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

[d] For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually.

[e] Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

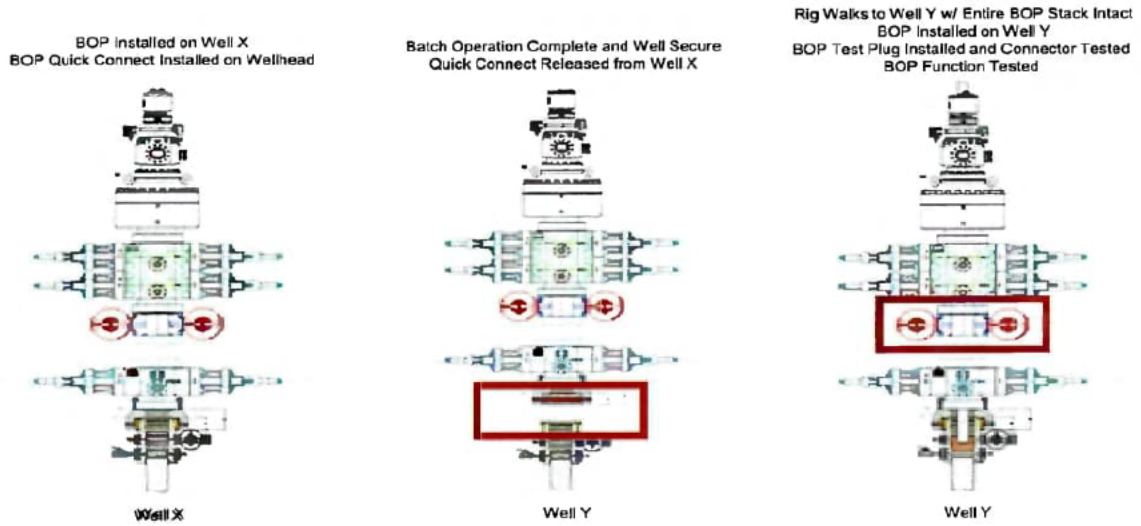
Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

Colgate feels break testing and our current procedures meet the intent of 43 CFR 3172 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. Colgate internal standards require complete BOPE tests more often than that of 43 CFR 3172 (every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, Colgate performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of 43 CFR 3172.

Procedures

1) Colgate will use this document for our break testing plan for New Mexico Delaware Basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
2) Colgate will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
   a)A full BOP test will be conducted on the first well on the pad.
   b)The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same formation depth or shallower.
   c) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
   d) A full BOP test will be required prior to drilling any production hole.
3) After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
   a) Between the HCV valve and choke line connection
   b) Between the BOP quick connect and the wellhead
4) The BOP is then lifted and removed from the wellhead by a hydraulic system.
5) After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
6) The connections mentioned in 3a and 3b will then be reconnected.
7) Install test plug into the wellhead using test joint or drill pipe.
8) A shell test is performed against the upper pipe rams testing the two breaks.
9) The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
10) Function tests will be performed on the following components: lower pipe rams, blind rams, and annular.
11) For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
12) A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

Note: Picture below highlights BOP components that will be tested during batch operations



Summary

A variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operations, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

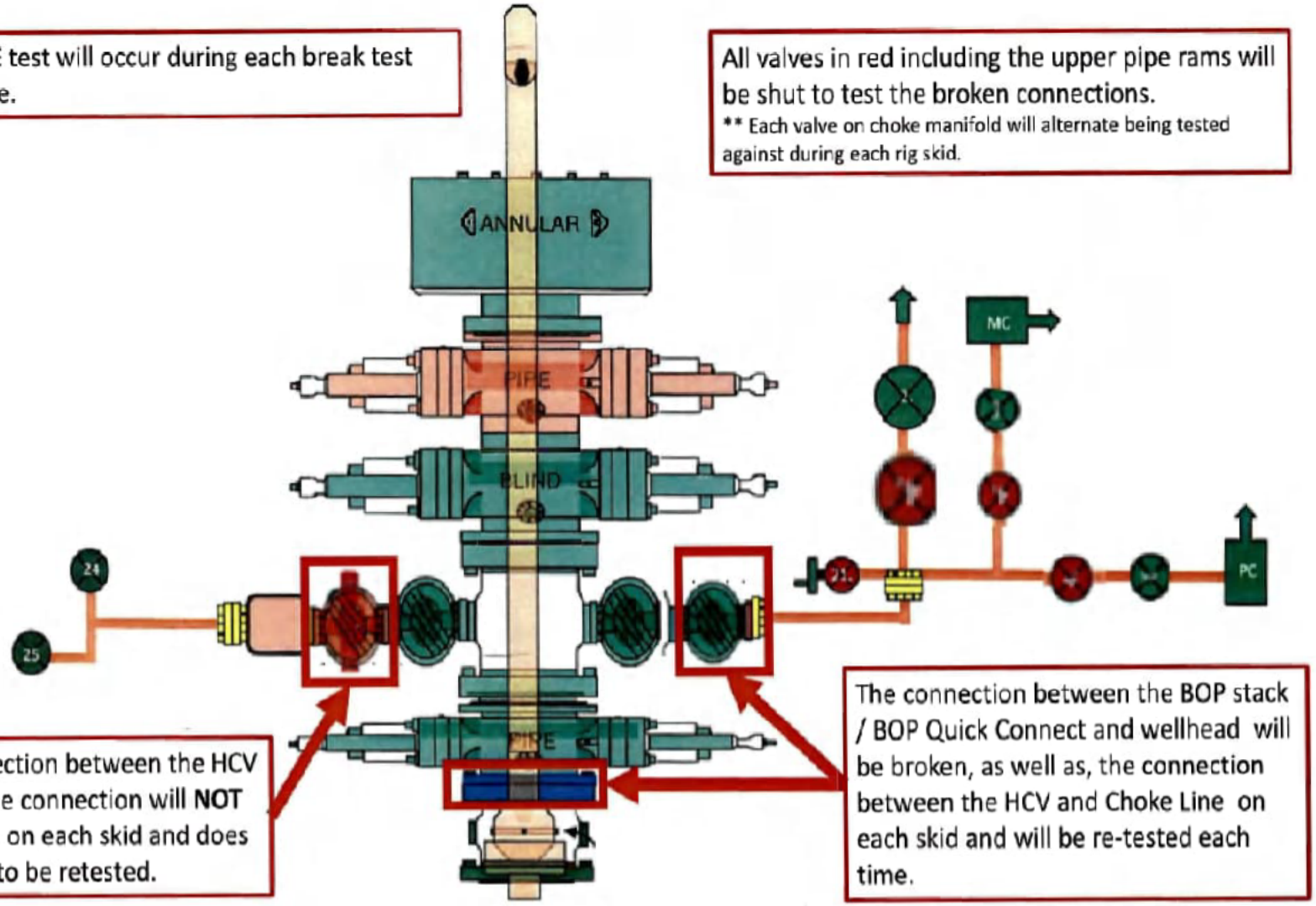
The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

Based on public data and the supporting documentation submitted herein to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

1) After a full BOP test is conducted on the first well on the pad.
2) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same depth or shallower.
3) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
4) A full BOP test will be required prior to drilling the production hole.

Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.
** Each valve on choke manifold will alternate being tested against during each rig skid.



The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.

Continental

ContiTech Fluid Technology

ContiTech Oil & Marine Corp. # 11535 Brittmoore Park Dr., Houston, TX 77041-6916 USA

CONSIGNEE / Ship-to address:

HELMERICH & PAYNE INT'L DRILLING CO
ATTN: FLEX RIG WHSE - B-BAY
210 MAGNOLIA DRIVE
GALENA PARK TX 77547

Buyer:

HELMERICH & PAYNE INT'L DRILLING CO
1437 SOUTH BOULDER
74119 TULSA

Conditions

Incoterms EXW Houston
Ex Works

Packing list / Delivery note

Document No.	**71461553**
Document Date	28.01.2022
Customer Number	11697
Customer VAT No.	
Supplier Number	
Purchase Order No.	740362040
Purchase Order Date	18.01.2022
Sales Order Number	1388153
Sales Order Date	18.01.2022
Unloading Point	
RAN-No.	

Page 1 of 2

Weights (Gross / Net)	
Total Gross Weight	2,507.000 LB
Total Net Weight	2,507.000 LB

Item	Material/Description	Quantity	Net Weight	Gross Weight
	Buyer: Jack Peebles *E-mail: Jackie.Peebles@hpinc.com* *Tel: 832-782-6000* *Rig/Whse: HOW*			
20	00RECERTIFY Recert of HP Hoses Serial# 67094 Commodity Code: 3" X 35 FT 10K Choke & Kill Hoses API 16C End 1: 4 - 1/16" 10Kpsi API Spec 6A Type 6BX Flange End 2: 4 - 1/16" 10Kpsi API Spec 6A Type 6BX Flange c/w BX155 ring groove each end Standard: API Spec 16C - Monogrammed Working Pressure: 10,000psi Test Pressure: 15,000psi Inspection & Certification includes: External inspection of the hose & couplings Internal boroscopic inspection of hose liner Hydrostatic pressure test of hose assembly Repair of any external damage to hose body and end connections (limited to minor repairs). Clean & protect end connections Inspection Report Disposal of hose assembly if hose fails inspection and recertification process. Please Flush Hoses before sending them to our Facility.	1 PC	2,507.000 LB	2,507.000 LB

880002 40
Y106-01-0101
2.9.22

Record Rotary Hose sleeve number on the CBC Made Hose List !

Hydrostatic Test Certificate

ContiTech

Certificate Number	COM Order Reference	Customer Name & Address
H100122	1388153	HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA
Customer Purchase Order No:	740362040	
Project:		

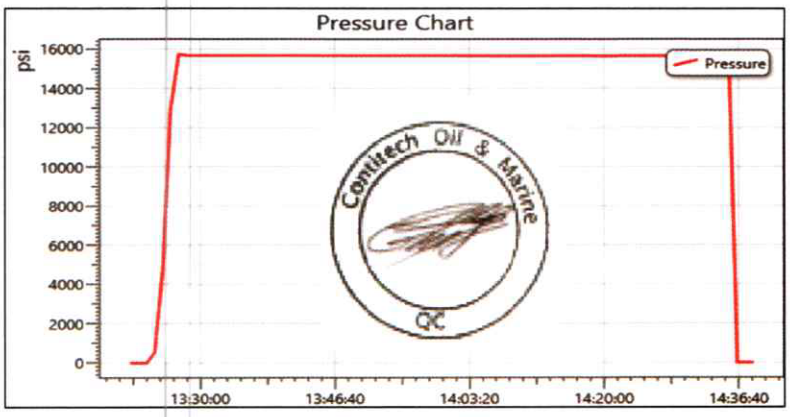
Test Center Address	Accepted by COM Inspection		Accepted by Client Inspection
ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Signed: Date:	Gerson Mejia-Lazo 02/09/22	

We certify that the goods detailed hereon have been inspected as described below by our Quality Management System, and to the best of our knowledge are found to conform the requirements of the above referenced purchase order as issued to ContiTech Oil & Marine Corporation.

Item	Part No.	Description	Qnty	Serial Number	Work. Press. (psi)	Test Press. (psi)	Test Time (minutes)
20	RECERTIFICATION	3" ID 10K Choke and Kill Hose x 35ft OAL	1	67094	10,000	15,000	60

Record Information	
Start Time	1/27/2022 13:21:21
End Time	1/27/2022 14:38:28
Interval	00:01:00
Number	78
MaxValue	15849
MinValue	-3
AvgValue	14240
RecordName	67094-sh
RecordNumber	199

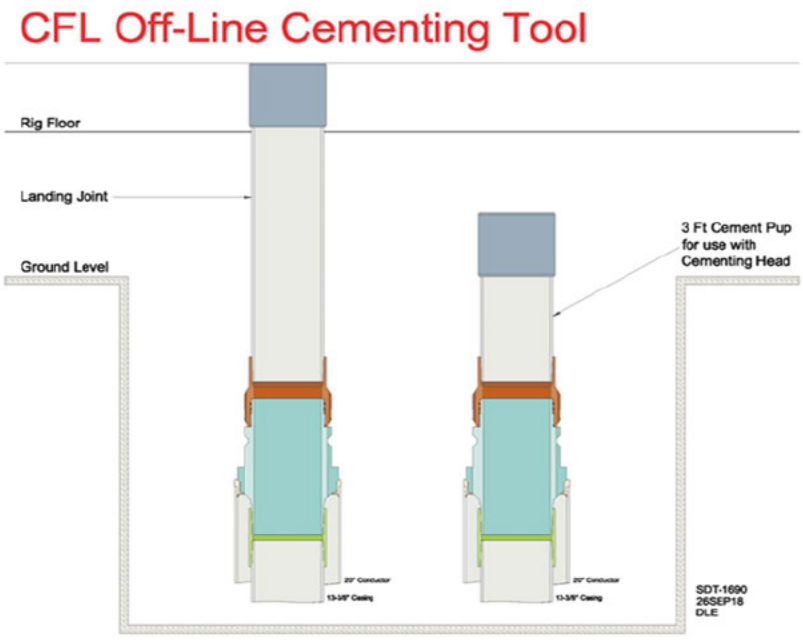
Gauge Information	
Model	ADT680
SN	21817380014
Range	(0-40000)psi
Unit	psi



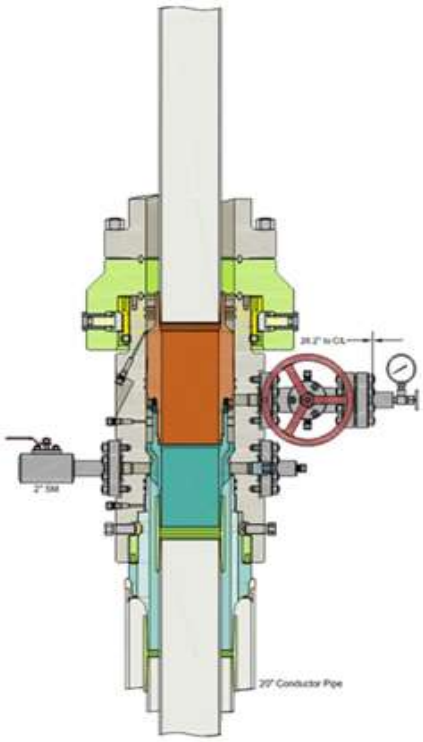
Colgate Operating Offline Cementing Procedure
Surface & Intermediate Casing

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

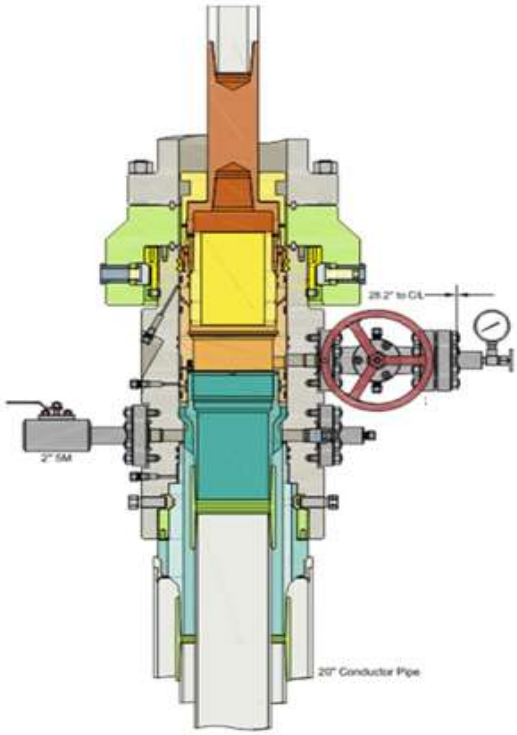
13 3/8" Surface



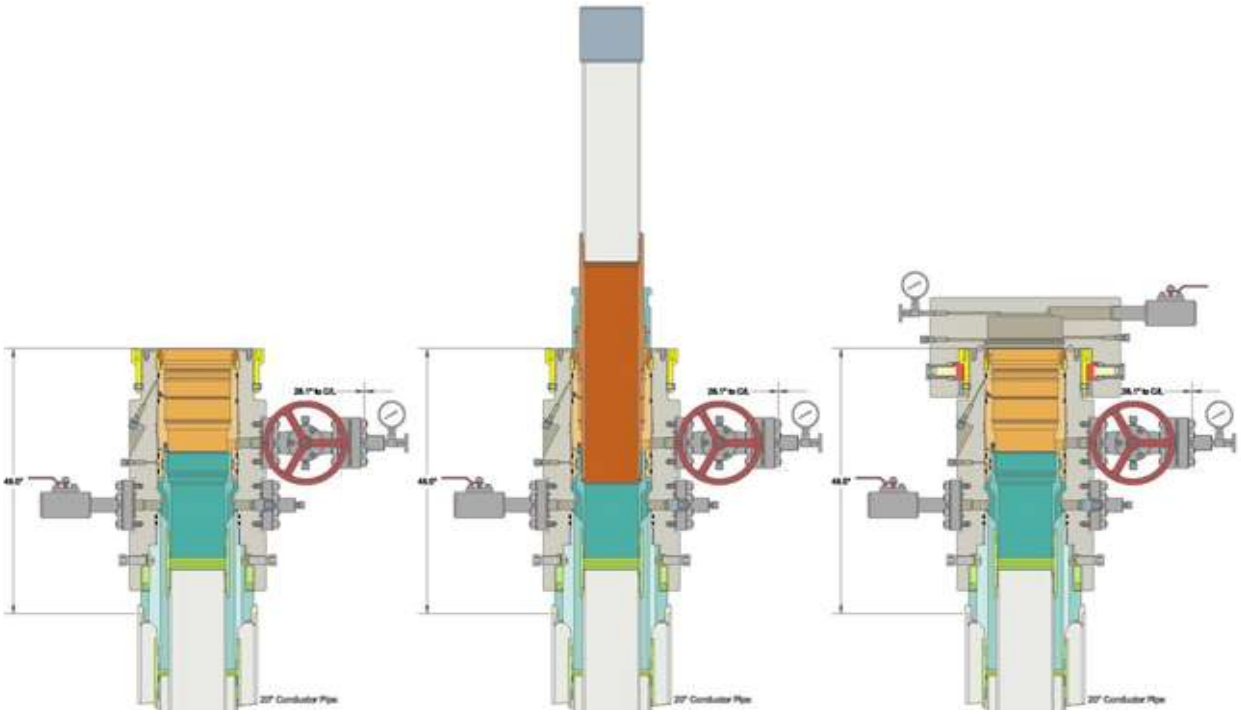
Intermediate



Run 7 5/8" Casing
Land Casing on 7 5/8" Mandrel Hanger
Cement 7 5/8" Casing
Retrieve Running Tool



Run 9 5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



Colgate Operating
Multi-Well Pad Batch Drilling Procedure

Surface Casing - Colgate intends to Batch set all surface casing to a depth approved in the APD. 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 Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land planned surface 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 greater - not to exceed 70% casing burst.

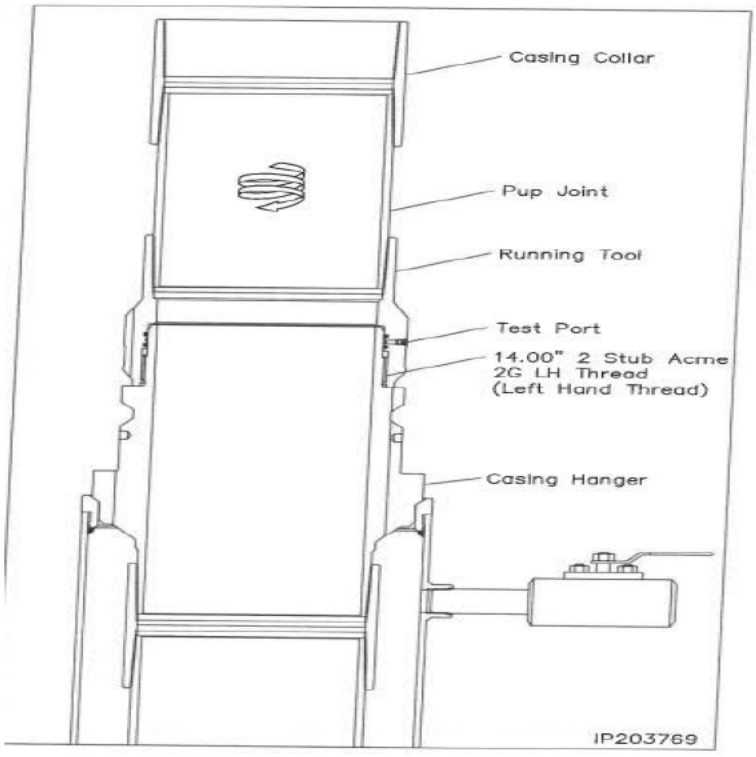
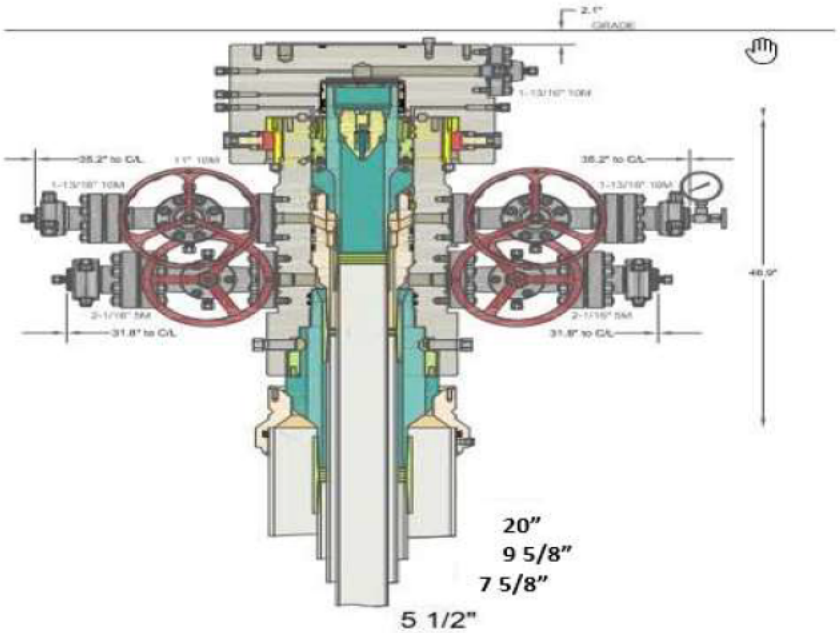


Illustration 1-1

Intermediate Casing – Colgate intends to Batch set all intermediate casing strings to a depth approved in the APD. Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior to 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 surface casing 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.



SKID PHASE

Illustration 2-2

Production Casing – Colgate 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. Drilling 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 Production Casing.
6. Remove wear bushing then run Production casing to TD landing casing mandrel in wellhead.
7. Cement 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 Production mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000 psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Colgate Operating LLC
WELL NAME & NO.:	Ironhorse 35 Fed Com 132H
LOCATION:	Sec 34-19S-29E-NMP
COUNTY:	Eddy County, New Mexico

COA

H_2S	○ No		◉ Yes	
Potash / WIPP	◉ None	○ Secretary	○ R-111-Q	☐ Open Annulus ☐ WIPP
Cave / Karst	○ Low	○ Medium	◉ High	○ Critical
Wellhead	○ Conventional	◉ Multibowl	○ Both	○ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☑ Capitan Reef	☐ Water Disposal	☑ COM	☐ Unit
Waste Prev.	○ Self-Certification	○ Waste Min. Plan	◉ APD Submitted prior to 06/10/2024	
Additional Language	☑ Flex Hose ☑ Four-String	☐ Casing Clearance ☑ Offline Cementing	☐ Pilot Hole ☑ Fluid-Filled	☑ Break Testing

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Cherry Canyon and Brushy Canyon** 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 **20** inch surface casing shall be set at approximately **232** 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. ***Set depth adjusted per BLM geologist.***

   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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **13-3/8** 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, or potash.**

❖ 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:** Ensure freshwater based mud is utilized across the Capitan interval.

3. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

- Cement should tie-back at least **50 feet** on top of Capitan Reef top or **200 feet** into the previous casing, whichever is greater. 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, or potash.**

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

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

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

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-361-2822 Eddy County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing
Contact the BLM prior to the commencement of any offline cementing procedure.

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)

Contact Eddy County Petroleum Engineering Inspection Staff:
Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220;
BLM_NM_CFO_DrillingNotifications@BLM.GOV; (575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
    a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
    b. When the operator proposes to set surface casing with Spudder Rig
        i. Notify the BLM when moving in and removing the Spudder Rig.
        ii. 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.
        iii. BOP/BOPE test to be conducted per **43 CFR 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. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

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 of both lead and tail cement, 2) until cement has been in place at least 8 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-Q 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 3172**.
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:
    i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    ii. 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.
    iii. Manufacturer representative shall install the test plug for the initial BOP test.
    iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
    v. 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.
    i. 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).
    ii. 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.)
    iii. 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 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 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

iv. 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.

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

vi. 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.

vii. 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.

viii. 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 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.

NEW MEXICO

(SP) EDDY
IRONHORSE 35-36 FED STATE
IRONHORSE 35 FED 132H

OWB

Plan: PWP0

Standard Planning Report - Geographic

03 October, 2023

Colgate Operating
Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Company:	NEW MEXICO	**TVD Reference:**	KB=30' @ 3344.0usft
Project:	(SP) EDDY	**MD Reference:**	KB=30' @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	**North Reference:**	Grid
Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project	(SP) EDDY		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	IRONHORSE 35-36 FED STATE				
Site Position:		**Northing:**	589,616.60 usft	**Latitude:**	32° 37' 14.151 N
From:	Map	**Easting:**	627,097.69 usft	**Longitude:**	104° 3' 17.225 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.15 °

Well	IRONHORSE 35 FED 132H				
Well Position	**+N/-S**	0.0 usft	**Northing:**	589,649.60 usft	**Latitude:**	32° 37' 14.478 N
	+E/-W	0.0 usft	**Easting:**	627,097.76 usft	**Longitude:**	104° 3' 17.224 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,314.0 usft

Wellbore OWB

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	12/31/2009	8.00	60.52	48,978.47881301

Design PWP0

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	9,194.0	0.0	0.0	91.85

Plan Survey Tool Program **Date** 10/3/2023

	Depth From (usft)	**Depth To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Remarks**
1	0.0	19,847.1	PWP0 (OWB)	MWD OWSG_Rev2_ MWD - Star	

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**
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,050.0	5.00	211.45	3,049.7	-9.3	-5.7	2.00	2.00	0.00	211.45	
6,727.2	5.00	211.45	6,712.9	-282.7	-172.9	0.00	0.00	0.00	0.00	
6,977.2	0.00	0.00	6,962.5	-292.0	-178.6	2.00	-2.00	0.00	180.00	
8,731.1	0.00	0.00	8,716.5	-292.0	-178.6	0.00	0.00	0.00	0.00	
9,481.1	90.00	90.28	9,194.0	-294.3	298.9	12.00	12.00	12.04	90.28	
19,847.1	90.00	90.28	9,194.0	-344.9	10,664.7	0.00	0.00	0.00	0.00	LTP/BHL-IRONHOI

Colgate Operating

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Company:	NEW MEXICO	**TVD Reference:**	KB=30' @ 3344.0usft
Project:	(SP) EDDY	**MD Reference:**	KB=30' @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	**North Reference:**	Grid
Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
100.0	0.00	0.00	100.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
162.0	0.00	0.00	162.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
Rustler									
200.0	0.00	0.00	200.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
300.0	0.00	0.00	300.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
400.0	0.00	0.00	400.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
500.0	0.00	0.00	500.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
600.0	0.00	0.00	600.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
700.0	0.00	0.00	700.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
800.0	0.00	0.00	800.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
889.0	0.00	0.00	889.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
Salado									
900.0	0.00	0.00	900.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,254.0	0.00	0.00	1,254.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
Tansill									
1,300.0	0.00	0.00	1,300.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,404.0	0.00	0.00	1,404.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
Yates									
1,500.0	0.00	0.00	1,500.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,610.0	0.00	0.00	1,610.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
Seven Rivers									
1,700.0	0.00	0.00	1,700.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,572.0	0.00	0.00	2,572.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
Queen									
2,600.0	0.00	0.00	2,600.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,774.0	0.00	0.00	2,774.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
Capitan									
2,800.0	0.00	0.00	2,800.0	0.0	0.0	589,649.60	627,097.76	32° 37' 14.478 N	104° 3' 17.224 W
2,900.0	2.00	211.45	2,900.0	-1.5	-0.9	589,648.11	627,096.85	32° 37' 14.463 N	104° 3' 17.234 W
3,000.0	4.00	211.45	2,999.8	-6.0	-3.6	589,643.65	627,094.12	32° 37' 14.419 N	104° 3' 17.266 W
3,050.0	5.00	211.45	3,049.7	-9.3	-5.7	589,640.30	627,092.08	32° 37' 14.386 N	104° 3' 17.290 W
3,100.0	5.00	211.45	3,099.5	-13.0	-8.0	589,636.59	627,089.80	32° 37' 14.349 N	104° 3' 17.317 W
3,200.0	5.00	211.45	3,199.1	-20.5	-12.5	589,629.15	627,085.25	32° 37' 14.276 N	104° 3' 17.371 W
3,300.0	5.00	211.45	3,298.7	-27.9	-17.1	589,621.72	627,080.71	32° 37' 14.202 N	104° 3' 17.424 W
3,400.0	5.00	211.45	3,398.4	-35.3	-21.6	589,614.28	627,076.16	32° 37' 14.129 N	104° 3' 17.477 W
3,411.7	5.00	211.45	3,410.0	-36.2	-22.1	589,613.41	627,075.63	32° 37' 14.120 N	104° 3' 17.484 W
Delaware Sands									
3,500.0	5.00	211.45	3,498.0	-42.8	-26.2	589,606.85	627,071.61	32° 37' 14.056 N	104° 3' 17.531 W
3,600.0	5.00	211.45	3,597.6	-50.2	-30.7	589,599.41	627,067.06	32° 37' 13.982 N	104° 3' 17.584 W

Colgate Operating

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Company:	NEW MEXICO	**TVD Reference:**	KB=30' @ 3344.0usft
Project:	(SP) EDDY	**MD Reference:**	KB=30' @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	**North Reference:**	Grid
Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,700.0	5.00	211.45	3,697.2	-57.6	-35.2	589,591.98	627,062.52	32° 37' 13.909 N	104° 3' 17.638 W
3,800.0	5.00	211.45	3,796.8	-65.1	-39.8	589,584.54	627,057.97	32° 37' 13.835 N	104° 3' 17.691 W
3,900.0	5.00	211.45	3,896.4	-72.5	-44.3	589,577.11	627,053.42	32° 37' 13.762 N	104° 3' 17.744 W
3,917.6	5.00	211.45	3,914.0	-73.8	-45.1	589,575.80	627,052.62	32° 37' 13.749 N	104° 3' 17.754 W
BYCN									
4,000.0	5.00	211.45	3,996.1	-79.9	-48.9	589,569.67	627,048.87	32° 37' 13.688 N	104° 3' 17.798 W
4,100.0	5.00	211.45	4,095.7	-87.4	-53.4	589,562.24	627,044.33	32° 37' 13.615 N	104° 3' 17.851 W
4,200.0	5.00	211.45	4,195.3	-94.8	-58.0	589,554.80	627,039.78	32° 37' 13.541 N	104° 3' 17.905 W
4,300.0	5.00	211.45	4,294.9	-102.2	-62.5	589,547.36	627,035.23	32° 37' 13.468 N	104° 3' 17.958 W
4,400.0	5.00	211.45	4,394.5	-109.7	-67.1	589,539.93	627,030.68	32° 37' 13.394 N	104° 3' 18.011 W
4,500.0	5.00	211.45	4,494.2	-117.1	-71.6	589,532.49	627,026.14	32° 37' 13.321 N	104° 3' 18.065 W
4,600.0	5.00	211.45	4,593.8	-124.5	-76.2	589,525.06	627,021.59	32° 37' 13.248 N	104° 3' 18.118 W
4,700.0	5.00	211.45	4,693.4	-132.0	-80.7	589,517.62	627,017.04	32° 37' 13.174 N	104° 3' 18.172 W
4,800.0	5.00	211.45	4,793.0	-139.4	-85.3	589,510.19	627,012.49	32° 37' 13.101 N	104° 3' 18.225 W
4,900.0	5.00	211.45	4,892.6	-146.8	-89.8	589,502.75	627,007.94	32° 37' 13.027 N	104° 3' 18.278 W
5,000.0	5.00	211.45	4,992.3	-154.3	-94.4	589,495.32	627,003.40	32° 37' 12.954 N	104° 3' 18.332 W
5,100.0	5.00	211.45	5,091.9	-161.7	-98.9	589,487.88	626,998.85	32° 37' 12.880 N	104° 3' 18.385 W
5,200.0	5.00	211.45	5,191.5	-169.2	-103.5	589,480.45	626,994.30	32° 37' 12.807 N	104° 3' 18.439 W
5,300.0	5.00	211.45	5,291.1	-176.6	-108.0	589,473.01	626,989.75	32° 37' 12.733 N	104° 3' 18.492 W
5,400.0	5.00	211.45	5,390.7	-184.0	-112.6	589,465.58	626,985.21	32° 37' 12.660 N	104° 3' 18.545 W
5,500.0	5.00	211.45	5,490.4	-191.5	-117.1	589,458.14	626,980.66	32° 37' 12.586 N	104° 3' 18.599 W
5,600.0	5.00	211.45	5,590.0	-198.9	-121.7	589,450.71	626,976.11	32° 37' 12.513 N	104° 3' 18.652 W
5,700.0	5.00	211.45	5,689.6	-206.3	-126.2	589,443.27	626,971.56	32° 37' 12.440 N	104° 3' 18.706 W
5,718.5	5.00	211.45	5,708.0	-207.7	-127.0	589,441.90	626,970.72	32° 37' 12.426 N	104° 3' 18.715 W
Bone Spring									
5,800.0	5.00	211.45	5,789.2	-213.8	-130.7	589,435.84	626,967.02	32° 37' 12.366 N	104° 3' 18.759 W
5,900.0	5.00	211.45	5,888.8	-221.2	-135.3	589,428.40	626,962.47	32° 37' 12.293 N	104° 3' 18.812 W
6,000.0	5.00	211.45	5,988.5	-228.6	-139.8	589,420.97	626,957.92	32° 37' 12.219 N	104° 3' 18.866 W
6,100.0	5.00	211.45	6,088.1	-236.1	-144.4	589,413.53	626,953.37	32° 37' 12.146 N	104° 3' 18.919 W
6,200.0	5.00	211.45	6,187.7	-243.5	-148.9	589,406.10	626,948.83	32° 37' 12.072 N	104° 3' 18.973 W
6,300.0	5.00	211.45	6,287.3	-250.9	-153.5	589,398.66	626,944.28	32° 37' 11.999 N	104° 3' 19.026 W
6,400.0	5.00	211.45	6,386.9	-258.4	-158.0	589,391.23	626,939.73	32° 37' 11.925 N	104° 3' 19.079 W
6,500.0	5.00	211.45	6,486.6	-265.8	-162.6	589,383.79	626,935.18	32° 37' 11.852 N	104° 3' 19.133 W
6,600.0	5.00	211.45	6,586.2	-273.2	-167.1	589,376.36	626,930.64	32° 37' 11.778 N	104° 3' 19.186 W
6,700.0	5.00	211.45	6,685.8	-280.7	-171.7	589,368.92	626,926.09	32° 37' 11.705 N	104° 3' 19.240 W
6,727.2	5.00	211.45	6,712.9	-282.7	-172.9	589,366.90	626,924.85	32° 37' 11.685 N	104° 3' 19.254 W
6,800.0	3.54	211.45	6,785.5	-287.3	-175.7	589,362.28	626,922.02	32° 37' 11.639 N	104° 3' 19.287 W
6,900.0	1.54	211.45	6,885.4	-291.1	-178.1	589,358.49	626,919.71	32° 37' 11.602 N	104° 3' 19.315 W
6,977.2	0.00	0.00	6,962.5	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,000.0	0.00	0.00	6,985.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,100.0	0.00	0.00	7,085.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,119.6	0.00	0.00	7,105.0	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
FBSG									
7,200.0	0.00	0.00	7,185.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,300.0	0.00	0.00	7,285.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,400.0	0.00	0.00	7,385.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,500.0	0.00	0.00	7,485.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,600.0	0.00	0.00	7,585.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,700.0	0.00	0.00	7,685.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,800.0	0.00	0.00	7,785.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
7,888.6	0.00	0.00	7,874.0	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
SBSG									
7,900.0	0.00	0.00	7,885.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,000.0	0.00	0.00	7,985.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W

Colgate Operating

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Company:	NEW MEXICO	**TVD Reference:**	KB=30' @ 3344.0usft
Project:	(SP) EDDY	**MD Reference:**	KB=30' @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	**North Reference:**	Grid
Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,100.0	0.00	0.00	8,085.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,200.0	0.00	0.00	8,185.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,300.0	0.00	0.00	8,285.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,400.0	0.00	0.00	8,385.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,500.0	0.00	0.00	8,485.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,600.0	0.00	0.00	8,585.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,700.0	0.00	0.00	8,685.4	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,731.1	0.00	0.00	8,716.5	-292.0	-178.6	589,357.60	626,919.16	32° 37' 11.593 N	104° 3' 19.321 W
8,800.0	8.26	90.28	8,785.1	-292.0	-173.6	589,357.58	626,924.12	32° 37' 11.593 N	104° 3' 19.263 W
8,809.0	9.34	90.28	8,794.0	-292.0	-172.3	589,357.57	626,925.50	32° 37' 11.593 N	104° 3' 19.247 W
TBSG									
8,900.0	20.26	90.28	8,881.9	-292.1	-149.0	589,357.46	626,948.72	32° 37' 11.591 N	104° 3' 18.975 W
9,000.0	32.26	90.28	8,971.4	-292.4	-104.9	589,357.24	626,992.89	32° 37' 11.588 N	104° 3' 18.459 W
9,100.0	44.26	90.28	9,049.8	-292.7	-43.1	589,356.94	627,054.70	32° 37' 11.583 N	104° 3' 17.736 W
9,200.0	56.26	90.28	9,113.6	-293.0	33.7	589,356.57	627,131.46	32° 37' 11.577 N	104° 3' 16.839 W
9,300.0	68.26	90.28	9,160.0	-293.5	122.0	589,356.14	627,219.81	32° 37' 11.571 N	104° 3' 15.806 W
9,400.0	80.26	90.28	9,187.1	-293.9	218.1	589,355.67	627,315.89	32° 37' 11.564 N	104° 3' 14.682 W
9,481.1	90.00	90.28	9,194.0	-294.3	298.9	589,355.27	627,396.62	32° 37' 11.558 N	104° 3' 13.738 W
9,500.0	90.00	90.28	9,194.0	-294.4	317.7	589,355.18	627,415.50	32° 37' 11.556 N	104° 3' 13.518 W
9,600.0	90.00	90.28	9,194.0	-294.9	417.7	589,354.69	627,515.49	32° 37' 11.549 N	104° 3' 12.348 W
9,700.0	90.00	90.28	9,194.0	-295.4	517.7	589,354.21	627,615.49	32° 37' 11.541 N	104° 3' 11.179 W
9,800.0	90.00	90.28	9,194.0	-295.9	617.7	589,353.72	627,715.49	32° 37' 11.534 N	104° 3' 10.010 W
9,900.0	90.00	90.28	9,194.0	-296.4	717.7	589,353.23	627,815.49	32° 37' 11.527 N	104° 3' 8.841 W
10,000.0	90.00	90.28	9,194.0	-296.9	817.7	589,352.74	627,915.49	32° 37' 11.519 N	104° 3' 7.671 W
10,100.0	90.00	90.28	9,194.0	-297.3	917.7	589,352.25	628,015.49	32° 37' 11.512 N	104° 3' 6.502 W
10,200.0	90.00	90.28	9,194.0	-297.8	1,017.7	589,351.77	628,115.49	32° 37' 11.504 N	104° 3' 5.333 W
10,300.0	90.00	90.28	9,194.0	-298.3	1,117.7	589,351.28	628,215.49	32° 37' 11.497 N	104° 3' 4.164 W
10,400.0	90.00	90.28	9,194.0	-298.8	1,217.7	589,350.79	628,315.49	32° 37' 11.489 N	104° 3' 2.995 W
10,500.0	90.00	90.28	9,194.0	-299.3	1,317.7	589,350.30	628,415.48	32° 37' 11.482 N	104° 3' 1.825 W
10,600.0	90.00	90.28	9,194.0	-299.8	1,417.7	589,349.81	628,515.48	32° 37' 11.474 N	104° 3' 0.656 W
10,700.0	90.00	90.28	9,194.0	-300.3	1,517.7	589,349.33	628,615.48	32° 37' 11.467 N	104° 2' 59.487 W
10,800.0	90.00	90.28	9,194.0	-300.8	1,617.7	589,348.84	628,715.48	32° 37' 11.459 N	104° 2' 58.318 W
10,900.0	90.00	90.28	9,194.0	-301.3	1,717.7	589,348.35	628,815.48	32° 37' 11.452 N	104° 2' 57.148 W
11,000.0	90.00	90.28	9,194.0	-301.7	1,817.7	589,347.86	628,915.48	32° 37' 11.444 N	104° 2' 55.979 W
11,100.0	90.00	90.28	9,194.0	-302.2	1,917.7	589,347.37	629,015.48	32° 37' 11.437 N	104° 2' 54.810 W
11,200.0	90.00	90.28	9,194.0	-302.7	2,017.7	589,346.89	629,115.48	32° 37' 11.430 N	104° 2' 53.641 W
11,300.0	90.00	90.28	9,194.0	-303.2	2,117.7	589,346.40	629,215.47	32° 37' 11.422 N	104° 2' 52.472 W
11,400.0	90.00	90.28	9,194.0	-303.7	2,217.7	589,345.91	629,315.47	32° 37' 11.415 N	104° 2' 51.302 W
11,500.0	90.00	90.28	9,194.0	-304.2	2,317.7	589,345.42	629,415.47	32° 37' 11.407 N	104° 2' 50.133 W
11,600.0	90.00	90.28	9,194.0	-304.7	2,417.7	589,344.93	629,515.47	32° 37' 11.400 N	104° 2' 48.964 W
11,700.0	90.00	90.28	9,194.0	-305.2	2,517.7	589,344.45	629,615.47	32° 37' 11.392 N	104° 2' 47.795 W
11,800.0	90.00	90.28	9,194.0	-305.6	2,617.7	589,343.96	629,715.47	32° 37' 11.385 N	104° 2' 46.625 W
11,900.0	90.00	90.28	9,194.0	-306.1	2,717.7	589,343.47	629,815.47	32° 37' 11.377 N	104° 2' 45.456 W
12,000.0	90.00	90.28	9,194.0	-306.6	2,817.7	589,342.98	629,915.47	32° 37' 11.370 N	104° 2' 44.287 W
12,100.0	90.00	90.28	9,194.0	-307.1	2,917.7	589,342.49	630,015.46	32° 37' 11.362 N	104° 2' 43.118 W
12,200.0	90.00	90.28	9,194.0	-307.6	3,017.7	589,342.01	630,115.46	32° 37' 11.355 N	104° 2' 41.948 W
12,300.0	90.00	90.28	9,194.0	-308.1	3,117.7	589,341.52	630,215.46	32° 37' 11.347 N	104° 2' 40.779 W
12,400.0	90.00	90.28	9,194.0	-308.6	3,217.7	589,341.03	630,315.46	32° 37' 11.340 N	104° 2' 39.610 W
12,500.0	90.00	90.28	9,194.0	-309.1	3,317.7	589,340.54	630,415.46	32° 37' 11.332 N	104° 2' 38.441 W
12,600.0	90.00	90.28	9,194.0	-309.5	3,417.7	589,340.06	630,515.46	32° 37' 11.324 N	104° 2' 37.272 W
12,700.0	90.00	90.28	9,194.0	-310.0	3,517.7	589,339.57	630,615.46	32° 37' 11.317 N	104° 2' 36.102 W
12,800.0	90.00	90.28	9,194.0	-310.5	3,617.7	589,339.08	630,715.46	32° 37' 11.309 N	104° 2' 34.933 W
12,900.0	90.00	90.28	9,194.0	-311.0	3,717.7	589,338.59	630,815.46	32° 37' 11.302 N	104° 2' 33.764 W
13,000.0	90.00	90.28	9,194.0	-311.5	3,817.7	589,338.10	630,915.45	32° 37' 11.294 N	104° 2' 32.595 W

Colgate Operating

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Company:	NEW MEXICO	**TVD Reference:**	KB=30' @ 3344.0usft
Project:	(SP) EDDY	**MD Reference:**	KB=30' @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	**North Reference:**	Grid
Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,100.0	90.00	90.28	9,194.0	-312.0	3,917.7	589,337.62	631,015.45	32° 37' 11.287 N	104° 2' 31.425 W
13,200.0	90.00	90.28	9,194.0	-312.5	4,017.7	589,337.13	631,115.45	32° 37' 11.279 N	104° 2' 30.256 W
13,300.0	90.00	90.28	9,194.0	-313.0	4,117.7	589,336.64	631,215.45	32° 37' 11.272 N	104° 2' 29.087 W
13,400.0	90.00	90.28	9,194.0	-313.5	4,217.7	589,336.15	631,315.45	32° 37' 11.264 N	104° 2' 27.918 W
13,500.0	90.00	90.28	9,194.0	-313.9	4,317.7	589,335.66	631,415.45	32° 37' 11.257 N	104° 2' 26.749 W
13,600.0	90.00	90.28	9,194.0	-314.4	4,417.7	589,335.18	631,515.45	32° 37' 11.249 N	104° 2' 25.579 W
13,700.0	90.00	90.28	9,194.0	-314.9	4,517.7	589,334.69	631,615.45	32° 37' 11.242 N	104° 2' 24.410 W
13,800.0	90.00	90.28	9,194.0	-315.4	4,617.7	589,334.20	631,715.44	32° 37' 11.234 N	104° 2' 23.241 W
13,900.0	90.00	90.28	9,194.0	-315.9	4,717.7	589,333.71	631,815.44	32° 37' 11.226 N	104° 2' 22.072 W
14,000.0	90.00	90.28	9,194.0	-316.4	4,817.7	589,333.22	631,915.44	32° 37' 11.219 N	104° 2' 20.902 W
14,100.0	90.00	90.28	9,194.0	-316.9	4,917.7	589,332.74	632,015.44	32° 37' 11.211 N	104° 2' 19.733 W
14,200.0	90.00	90.28	9,194.0	-317.4	5,017.7	589,332.25	632,115.44	32° 37' 11.204 N	104° 2' 18.564 W
14,300.0	90.00	90.28	9,194.0	-317.8	5,117.7	589,331.76	632,215.44	32° 37' 11.196 N	104° 2' 17.395 W
14,400.0	90.00	90.28	9,194.0	-318.3	5,217.7	589,331.27	632,315.44	32° 37' 11.189 N	104° 2' 16.226 W
14,500.0	90.00	90.28	9,194.0	-318.8	5,317.7	589,330.78	632,415.44	32° 37' 11.181 N	104° 2' 15.056 W
14,600.0	90.00	90.28	9,194.0	-319.3	5,417.7	589,330.30	632,515.44	32° 37' 11.173 N	104° 2' 13.887 W
14,700.0	90.00	90.28	9,194.0	-319.8	5,517.7	589,329.81	632,615.43	32° 37' 11.166 N	104° 2' 12.718 W
14,800.0	90.00	90.28	9,194.0	-320.3	5,617.7	589,329.32	632,715.43	32° 37' 11.158 N	104° 2' 11.549 W
14,900.0	90.00	90.28	9,194.0	-320.8	5,717.7	589,328.83	632,815.43	32° 37' 11.151 N	104° 2' 10.379 W
15,000.0	90.00	90.28	9,194.0	-321.3	5,817.7	589,328.34	632,915.43	32° 37' 11.143 N	104° 2' 9.210 W
15,100.0	90.00	90.28	9,194.0	-321.7	5,917.7	589,327.86	633,015.43	32° 37' 11.135 N	104° 2' 8.041 W
15,200.0	90.00	90.28	9,194.0	-322.2	6,017.7	589,327.37	633,115.43	32° 37' 11.128 N	104° 2' 6.872 W
15,300.0	90.00	90.28	9,194.0	-322.7	6,117.7	589,326.88	633,215.43	32° 37' 11.120 N	104° 2' 5.703 W
15,400.0	90.00	90.28	9,194.0	-323.2	6,217.7	589,326.39	633,315.43	32° 37' 11.113 N	104° 2' 4.533 W
15,500.0	90.00	90.28	9,194.0	-323.7	6,317.7	589,325.90	633,415.42	32° 37' 11.105 N	104° 2' 3.364 W
15,600.0	90.00	90.28	9,194.0	-324.2	6,417.7	589,325.42	633,515.42	32° 37' 11.097 N	104° 2' 2.195 W
15,700.0	90.00	90.28	9,194.0	-324.7	6,517.7	589,324.93	633,615.42	32° 37' 11.090 N	104° 2' 1.026 W
15,800.0	90.00	90.28	9,194.0	-325.2	6,617.7	589,324.44	633,715.42	32° 37' 11.082 N	104° 1' 59.856 W
15,900.0	90.00	90.28	9,194.0	-325.7	6,717.7	589,323.95	633,815.42	32° 37' 11.075 N	104° 1' 58.687 W
16,000.0	90.00	90.28	9,194.0	-326.1	6,817.7	589,323.46	633,915.42	32° 37' 11.067 N	104° 1' 57.518 W
16,100.0	90.00	90.28	9,194.0	-326.6	6,917.7	589,322.98	634,015.42	32° 37' 11.059 N	104° 1' 56.349 W
16,200.0	90.00	90.28	9,194.0	-327.1	7,017.7	589,322.49	634,115.42	32° 37' 11.052 N	104° 1' 55.180 W
16,300.0	90.00	90.28	9,194.0	-327.6	7,117.7	589,322.00	634,215.42	32° 37' 11.044 N	104° 1' 54.010 W
16,400.0	90.00	90.28	9,194.0	-328.1	7,217.6	589,321.51	634,315.41	32° 37' 11.036 N	104° 1' 52.841 W
16,500.0	90.00	90.28	9,194.0	-328.6	7,317.6	589,321.03	634,415.41	32° 37' 11.029 N	104° 1' 51.672 W
16,600.0	90.00	90.28	9,194.0	-329.1	7,417.6	589,320.54	634,515.41	32° 37' 11.021 N	104° 1' 50.503 W
16,700.0	90.00	90.28	9,194.0	-329.6	7,517.6	589,320.05	634,615.41	32° 37' 11.013 N	104° 1' 49.333 W
16,800.0	90.00	90.28	9,194.0	-330.0	7,617.6	589,319.56	634,715.41	32° 37' 11.006 N	104° 1' 48.164 W
16,900.0	90.00	90.28	9,194.0	-330.5	7,717.6	589,319.07	634,815.41	32° 37' 10.998 N	104° 1' 46.995 W
17,000.0	90.00	90.28	9,194.0	-331.0	7,817.6	589,318.59	634,915.41	32° 37' 10.990 N	104° 1' 45.826 W
17,100.0	90.00	90.28	9,194.0	-331.5	7,917.6	589,318.10	635,015.41	32° 37' 10.983 N	104° 1' 44.657 W
17,200.0	90.00	90.28	9,194.0	-332.0	8,017.6	589,317.61	635,115.40	32° 37' 10.975 N	104° 1' 43.487 W
17,300.0	90.00	90.28	9,194.0	-332.5	8,117.6	589,317.12	635,215.40	32° 37' 10.967 N	104° 1' 42.318 W
17,400.0	90.00	90.28	9,194.0	-333.0	8,217.6	589,316.63	635,315.40	32° 37' 10.960 N	104° 1' 41.149 W
17,500.0	90.00	90.28	9,194.0	-333.5	8,317.6	589,316.15	635,415.40	32° 37' 10.952 N	104° 1' 39.980 W
17,600.0	90.00	90.28	9,194.0	-333.9	8,417.6	589,315.66	635,515.40	32° 37' 10.944 N	104° 1' 38.810 W
17,700.0	90.00	90.28	9,194.0	-334.4	8,517.6	589,315.17	635,615.40	32° 37' 10.937 N	104° 1' 37.641 W
17,800.0	90.00	90.28	9,194.0	-334.9	8,617.6	589,314.68	635,715.40	32° 37' 10.929 N	104° 1' 36.472 W
17,900.0	90.00	90.28	9,194.0	-335.4	8,717.6	589,314.19	635,815.40	32° 37' 10.921 N	104° 1' 35.303 W
18,000.0	90.00	90.28	9,194.0	-335.9	8,817.6	589,313.71	635,915.39	32° 37' 10.914 N	104° 1' 34.134 W
18,100.0	90.00	90.28	9,194.0	-336.4	8,917.6	589,313.22	636,015.39	32° 37' 10.906 N	104° 1' 32.964 W
18,200.0	90.00	90.28	9,194.0	-336.9	9,017.6	589,312.73	636,115.39	32° 37' 10.898 N	104° 1' 31.795 W
18,300.0	90.00	90.28	9,194.0	-337.4	9,117.6	589,312.24	636,215.39	32° 37' 10.891 N	104° 1' 30.626 W
18,400.0	90.00	90.28	9,194.0	-337.8	9,217.6	589,311.75	636,315.39	32° 37' 10.883 N	104° 1' 29.457 W
18,500.0	90.00	90.28	9,194.0	-338.3	9,317.6	589,311.27	636,415.39	32° 37' 10.875 N	104° 1' 28.287 W

Colgate Operating

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Company:	NEW MEXICO	**TVD Reference:**	KB=30' @ 3344.0usft
Project:	(SP) EDDY	**MD Reference:**	KB=30' @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	**North Reference:**	Grid
Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
18,600.0	90.00	90.28	9,194.0	-338.8	9,417.6	589,310.78	636,515.39	32° 37' 10.868 N	104° 1' 27.118 W
18,700.0	90.00	90.28	9,194.0	-339.3	9,517.6	589,310.29	636,615.39	32° 37' 10.860 N	104° 1' 25.949 W
18,800.0	90.00	90.28	9,194.0	-339.8	9,617.6	589,309.80	636,715.39	32° 37' 10.852 N	104° 1' 24.780 W
18,900.0	90.00	90.28	9,194.0	-340.3	9,717.6	589,309.31	636,815.38	32° 37' 10.844 N	104° 1' 23.611 W
19,000.0	90.00	90.28	9,194.0	-340.8	9,817.6	589,308.83	636,915.38	32° 37' 10.837 N	104° 1' 22.441 W
19,100.0	90.00	90.28	9,194.0	-341.3	9,917.6	589,308.34	637,015.38	32° 37' 10.829 N	104° 1' 21.272 W
19,200.0	90.00	90.28	9,194.0	-341.8	10,017.6	589,307.85	637,115.38	32° 37' 10.821 N	104° 1' 20.103 W
19,300.0	90.00	90.28	9,194.0	-342.2	10,117.6	589,307.36	637,215.38	32° 37' 10.814 N	104° 1' 18.934 W
19,400.0	90.00	90.28	9,194.0	-342.7	10,217.6	589,306.87	637,315.38	32° 37' 10.806 N	104° 1' 17.764 W
19,500.0	90.00	90.28	9,194.0	-343.2	10,317.6	589,306.39	637,415.38	32° 37' 10.798 N	104° 1' 16.595 W
19,600.0	90.00	90.28	9,194.0	-343.7	10,417.6	589,305.90	637,515.38	32° 37' 10.790 N	104° 1' 15.426 W
19,700.0	90.00	90.28	9,194.0	-344.2	10,517.6	589,305.41	637,615.37	32° 37' 10.783 N	104° 1' 14.257 W
19,800.0	90.00	90.28	9,194.0	-344.7	10,617.6	589,304.92	637,715.37	32° 37' 10.775 N	104° 1' 13.088 W
19,847.1	90.00	90.28	9,194.0	-344.9	10,664.7	589,304.69	637,762.47	32° 37' 10.771 N	104° 1' 12.537 W
Formation 18									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LTP/BHL-IRONHORS - plan hits target center - Point	0.00	0.00	9,194.0	-344.9	10,664.7	589,304.69	637,762.47	32° 37' 10.771 N	104° 1' 12.537 W
FTP/PP-IRONHORSE - plan misses target center by 0.8usft at 9481.0usft MD (9194.0 TVD, -294.3 N, 298.7 E) - Point	0.00	0.01	9,194.0	-295.1	298.7	589,354.51	627,396.50	32° 37' 11.550 N	104° 3' 13.740 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
162.0	162.0	Rustler			
889.0	889.0	Salado			
1,254.0	1,254.0	Tansill			
1,404.0	1,404.0	Yates			
1,610.0	1,610.0	Seven Rivers			
2,572.0	2,572.0	Queen			
2,774.0	2,774.0	Capitan			
3,411.7	3,410.0	Delaware Sands			
3,917.6	3,914.0	BYCN		0.00	
5,718.5	5,708.0	Bone Spring			
7,119.6	7,105.0	FBSG			
7,888.6	7,874.0	SBSG			
8,809.0	8,794.0	TBSG			
19,847.1	9,194.0	Formation 18			

Colgate Operating

Planning Report - Geographic

Database:	Compass	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Company:	NEW MEXICO	**TVD Reference:**	KB=30' @ 3344.0usft
Project:	(SP) EDDY	**MD Reference:**	KB=30' @ 3344.0usft
Site:	IRONHORSE 35-36 FED STATE	**North Reference:**	Grid
Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
2,800.0	2,800.0	0.0	0.0	Start Build 2.00
3,050.0	3,049.7	-9.3	-5.7	Start 3677.2 hold at 3050.0 MD
6,727.2	6,712.9	-282.7	-172.9	Start Drop -2.00
6,977.2	6,962.5	-292.0	-178.6	Start 1754.0 hold at 6977.2 MD
8,731.1	8,716.5	-292.0	-178.6	Start DLS 12.00 TFO 90.28
9,481.1	9,194.0	-294.3	298.9	Start 10366.0 hold at 9481.1 MD
19,847.1	9,194.0	-344.9	10,664.7	TD at 19847.1

NEW MEXICO

(SP) EDDY
IRONHORSE 35-36 FED STATE
IRONHORSE 35 FED 132H

OWB
PWP0

Anticollision Report

03 October, 2023

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Reference	PWP0		
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 centre distance of 20,000.0usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 10/3/2023

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,847.1	PWP0 (OWB)	MWD	OWSG_Rev2_ MWD - Standard

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
IRONHORSE 35-36 FED STATE						
Black Diamond 34 Fed Com 122H - AWP - FINAL MWD	1,902.0	1,904.6	55.7	42.5	4.221	CC
Black Diamond 34 Fed Com 122H - AWP - FINAL MWD	2,200.0	2,202.4	56.7	41.4	3.708	ES
Black Diamond 34 Fed Com 122H - AWP - FINAL MWD	8,107.0	8,259.7	164.7	107.7	2.890	SF
Black Diamond 34 Fed Com 131H - AWP - FINAL MWD	1,148.9	1,150.7	99.7	91.9	12.675	CC
Black Diamond 34 Fed Com 131H - AWP - FINAL MWD	1,200.0	1,201.2	99.9	91.7	12.145	ES
Black Diamond 34 Fed Com 131H - AWP - FINAL MWD	2,400.0	2,395.5	152.3	135.6	9.093	SF
Black Diamond 34 Fed Com 132H - AWP - FINAL MWD	1,848.7	1,849.5	86.0	73.2	6.697	CC, ES
Black Diamond 34 Fed Com 132H - AWP - FINAL MWD	1,900.0	1,898.2	86.8	73.6	6.579	SF
IRONHORSE 35 FED 131H - OWB - PWP0	1,700.0	1,700.0	66.0	54.3	5.630	CC, ES
IRONHORSE 35 FED 131H - OWB - PWP0	19,847.1	19,818.1	1,320.0	798.4	2.531	SF
IRONHORSE 35 FED 172H - OWB - PWP0	2,000.0	2,000.0	99.0	85.1	7.136	CC, ES
IRONHORSE 35 FED 172H - OWB - PWP0	19,847.1	19,231.0	872.1	460.4	2.119	SF
IRONHORSE 35 FED 200H - OWB - PWP0	2,000.0	2,000.0	33.0	19.1	2.379	CC, ES
IRONHORSE 35 FED 200H - OWB - PWP0	19,847.1	20,068.8	689.6	186.5	1.371	Level 3, SF
IRONHORSE 35-36 FED 171H - OWB - PWP0	3,485.3	3,484.6	22.1	-2.2	0.908	Level 3, CC, ES, SF
IRONHORSE 35-36 FED 201H - OWB - PWP0	2,000.0	2,000.0	33.0	19.1	2.379	CC, ES
IRONHORSE 35-36 FED 201H - OWB - PWP0	19,847.1	20,093.1	689.6	187.0	1.372	Level 3, SF
Osage 34 Fed #1H - AWP - FINAL MWD	2,843.6	2,837.7	900.9	881.1	45.643	CC, ES
Osage 34 Fed #1H - AWP - FINAL MWD	7,900.0	7,816.0	1,184.0	1,129.4	21.677	SF
Parkway ST 36 #1 - AWP - INC ONLY	16,641.1	9,203.2	330.5	-81.0	0.803	Level 3, CC, ES, SF
xxIRONHORSE 35-36 FED STATE COM 174H - OWB - I	2,000.0	1,995.0	99.0	85.1	7.141	CC, ES
xxIRONHORSE 35-36 FED STATE COM 174H - OWB - I	19,847.1	20,708.5	1,045.6	690.4	2.944	SF

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-86.52	6.2	-101.4	101.6				
100.0	100.0	103.1	103.1	0.1	0.2	-86.31	6.5	-100.3	100.6	100.2	0.37	268.507	
200.0	200.0	204.9	204.8	0.5	0.6	-85.57	7.5	-97.1	97.5	96.4	1.10	88.864	
300.0	300.0	304.9	304.7	0.8	1.0	-84.29	9.3	-93.0	93.5	91.7	1.81	51.650	
400.0	400.0	405.1	404.8	1.2	1.3	-82.34	11.9	-88.5	89.4	86.9	2.53	35.390	
500.0	500.0	505.9	505.4	1.6	1.7	-79.29	15.7	-83.2	84.8	81.5	3.25	26.112	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
600.0	600.0	606.6	605.7	1.9	2.1	-74.98	20.5	-76.3	79.1	75.2	3.96	19.959	
700.0	700.0	704.3	703.1	2.3	2.4	-70.35	24.9	-69.8	74.2	69.5	4.67	15.874	
800.0	800.0	804.5	803.2	2.6	2.8	-67.55	27.1	-65.7	71.1	65.7	5.39	13.191	
900.0	900.0	902.7	901.4	3.0	3.1	-65.32	28.7	-62.4	68.6	62.5	6.10	11.251	
1,000.0	1,000.0	1,003.0	1,001.6	3.4	3.5	-65.58	28.1	-62.0	68.1	61.3	6.80	10.006	
1,100.0	1,100.0	1,103.4	1,102.0	3.7	3.8	-65.98	27.2	-61.1	66.8	59.3	7.51	8.901	
1,200.0	1,200.0	1,203.6	1,202.2	4.1	4.2	-66.53	25.9	-59.7	65.1	56.9	8.22	7.916	
1,300.0	1,300.0	1,303.6	1,302.2	4.4	4.5	-67.12	24.6	-58.2	63.2	54.2	8.93	7.073	
1,400.0	1,400.0	1,403.4	1,402.0	4.8	4.9	-66.87	24.1	-56.4	61.3	51.7	9.65	6.359	
1,500.0	1,500.0	1,503.3	1,501.8	5.1	5.2	-65.53	24.8	-54.5	59.9	49.5	10.36	5.780	
1,600.0	1,600.0	1,603.1	1,601.6	5.5	5.6	-64.07	25.7	-52.8	58.7	47.6	11.07	5.298	
1,700.0	1,700.0	1,703.4	1,701.8	5.9	5.9	-65.83	23.3	-51.9	56.9	45.2	11.78	4.833	
1,800.0	1,800.0	1,803.0	1,801.4	6.2	6.3	-69.31	19.8	-52.4	56.1	43.6	12.48	4.492	
1,900.0	1,900.0	1,902.7	1,901.0	6.6	6.6	-72.80	16.5	-53.2	55.7	42.5	13.18	4.225	
1,902.0	1,902.0	1,904.6	1,903.0	6.6	6.6	-72.87	16.4	-53.2	55.7	42.5	13.19	4.221	CC
2,000.0	2,000.0	2,002.5	2,000.8	6.9	6.9	-76.49	13.1	-54.3	55.9	42.0	13.88	4.027	
2,100.0	2,100.0	2,102.6	2,100.8	7.3	7.3	-79.70	10.1	-55.3	56.2	41.6	14.58	3.855	
2,200.0	2,200.0	2,202.4	2,200.6	7.7	7.6	-82.65	7.2	-56.2	56.7	41.4	15.28	3.708	ES
2,300.0	2,300.0	2,302.0	2,300.1	8.0	8.0	-86.33	3.7	-57.9	58.0	42.0	15.98	3.628	
2,400.0	2,400.0	2,401.0	2,398.8	8.4	8.3	-92.83	-3.0	-60.4	60.6	43.9	16.67	3.631	
2,500.0	2,500.0	2,500.7	2,498.3	8.7	8.7	-99.09	-10.2	-63.6	64.5	47.1	17.37	3.710	
2,600.0	2,600.0	2,600.3	2,597.5	9.1	9.0	-104.77	-17.6	-66.7	69.1	51.0	18.07	3.822	
2,700.0	2,700.0	2,699.6	2,696.5	9.4	9.4	-109.97	-25.4	-70.0	74.7	55.9	18.77	3.978	
2,800.0	2,800.0	2,799.1	2,795.5	9.8	9.7	-114.71	-33.8	-73.5	81.1	61.7	19.47	4.168	
2,900.0	2,900.0	2,898.4	2,894.4	10.1	10.1	29.91	-42.9	-76.9	86.8	66.6	20.14	4.307	
3,000.0	2,999.8	2,997.8	2,993.2	10.5	10.4	26.79	-53.1	-80.2	90.2	69.4	20.81	4.336	
3,050.0	3,049.7	3,048.4	3,043.4	10.6	10.6	24.97	-59.3	-81.3	90.9	69.8	21.16	4.299	
3,079.4	3,079.0	3,078.0	3,072.7	10.7	10.7	23.51	-63.4	-81.3	90.9	69.5	21.36	4.256	
3,100.0	3,099.5	3,098.3	3,092.8	10.8	10.8	22.42	-66.3	-81.2	91.0	69.5	21.49	4.232	
3,200.0	3,199.1	3,198.0	3,191.3	11.1	11.1	16.63	-81.5	-80.7	92.0	69.8	22.16	4.152	
3,300.0	3,298.7	3,300.4	3,292.5	11.5	11.5	9.28	-97.1	-76.7	91.7	68.8	22.88	4.007	
3,318.3	3,316.9	3,318.3	3,310.0	11.5	11.6	7.75	-100.0	-75.6	91.6	68.6	23.00	3.985	
3,400.0	3,398.4	3,398.0	3,388.5	11.8	11.9	0.65	-113.5	-70.7	93.0	69.4	23.50	3.955	
3,500.0	3,498.0	3,499.9	3,488.8	12.1	12.2	-7.76	-130.3	-64.5	96.1	71.9	24.23	3.968	
3,600.0	3,597.6	3,606.1	3,594.0	12.5	12.6	-15.84	-141.7	-56.3	95.1	70.1	25.01	3.801	
3,700.0	3,697.2	3,705.5	3,692.8	12.8	13.0	-23.51	-148.8	-47.9	92.2	66.5	25.71	3.586	
3,800.0	3,796.8	3,805.0	3,791.7	13.2	13.3	-31.47	-155.7	-39.6	90.9	64.5	26.40	3.442	
3,900.0	3,896.4	3,905.8	3,892.0	13.5	13.7	-39.33	-161.7	-31.9	90.3	63.2	27.12	3.329	
4,000.0	3,996.1	4,007.4	3,993.3	13.9	14.0	-46.73	-165.7	-25.4	89.0	61.1	27.85	3.195	
4,088.5	4,084.2	4,094.8	4,080.6	14.2	14.4	-52.76	-168.3	-20.8	88.0	59.5	28.48	3.090	
4,100.0	4,095.7	4,106.1	4,091.8	14.2	14.4	-53.52	-168.7	-20.3	88.0	59.5	28.56	3.082	
4,200.0	4,195.3	4,201.8	4,187.1	14.6	14.7	-59.53	-174.9	-14.6	91.5	62.3	29.21	3.132	
4,300.0	4,294.9	4,301.5	4,286.3	15.0	15.1	-65.11	-182.7	-8.2	97.6	67.6	29.94	3.258	
4,400.0	4,394.5	4,401.4	4,385.8	15.3	15.5	-70.28	-189.8	-1.7	103.9	73.3	30.67	3.388	
4,500.0	4,494.2	4,501.9	4,485.9	15.7	15.8	-75.49	-195.6	5.2	110.3	78.8	31.42	3.509	
4,600.0	4,593.8	4,601.7	4,585.4	16.0	16.2	-80.86	-199.6	12.6	116.7	84.5	32.15	3.629	
4,700.0	4,693.4	4,700.3	4,683.6	16.4	16.5	-86.29	-202.4	20.8	124.0	91.1	32.85	3.774	
4,800.0	4,793.0	4,795.7	4,778.5	16.8	16.9	-90.45	-206.6	29.2	133.6	100.1	33.50	3.989	
4,900.0	4,892.6	4,895.1	4,877.2	17.1	17.2	-93.12	-214.2	38.2	145.6	111.4	34.23	4.254	
5,000.0	4,992.3	4,996.4	4,977.8	17.5	17.6	-95.52	-221.4	46.8	157.1	122.1	34.99	4.490	
5,100.0	5,091.9	5,099.7	5,080.6	17.9	18.0	-96.86	-229.8	52.6	166.5	130.7	35.78	4.654	
5,200.0	5,191.5	5,201.3	5,181.7	18.2	18.4	-97.41	-239.1	55.8	174.3	137.8	36.53	4.771	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,300.0	5,291.1	5,301.9	5,282.0	18.6	18.7	-98.23	-247.1	58.8	181.4	144.1	37.27	4.867	
5,400.0	5,390.7	5,403.5	5,383.3	19.0	19.1	-99.19	-254.3	61.4	187.8	149.8	38.01	4.942	
5,500.0	5,490.4	5,503.1	5,482.5	19.3	19.5	-99.55	-262.8	62.7	193.7	154.9	38.74	5.000	
5,600.0	5,590.0	5,604.2	5,583.1	19.7	19.8	-99.47	-272.8	63.5	199.5	160.0	39.48	5.052	
5,700.0	5,689.6	5,704.1	5,682.7	20.1	20.2	-99.86	-280.9	64.4	204.8	164.6	40.21	5.093	
5,800.0	5,789.2	5,800.0	5,778.2	20.4	20.5	-99.97	-289.7	65.4	210.7	169.8	40.91	5.150	
5,900.0	5,888.8	5,897.8	5,875.2	20.8	20.9	-99.48	-301.5	67.4	218.5	176.9	41.62	5.249	
6,000.0	5,988.5	5,999.2	5,976.0	21.2	21.2	-99.42	-312.2	70.1	226.4	184.0	42.37	5.343	
6,100.0	6,088.1	6,102.1	6,078.5	21.6	21.6	-99.61	-321.7	72.1	233.1	189.9	43.13	5.403	
6,200.0	6,187.7	6,202.8	6,178.7	21.9	22.0	-99.80	-330.5	73.1	238.7	194.8	43.87	5.441	
6,300.0	6,287.3	6,299.1	6,274.4	22.3	22.3	-99.31	-342.0	73.9	245.4	200.8	44.58	5.504	
6,400.0	6,386.9	6,401.3	6,375.9	22.7	22.7	-98.86	-354.0	75.0	252.2	206.8	45.34	5.562	
6,500.0	6,486.6	6,504.0	6,478.1	23.1	23.1	-98.94	-363.4	75.5	257.5	211.4	46.09	5.586	
6,600.0	6,586.2	6,601.9	6,575.7	23.4	23.4	-99.54	-370.3	77.1	263.1	216.3	46.82	5.619	
6,700.0	6,685.8	6,704.1	6,677.8	23.8	23.8	-100.62	-375.0	78.9	267.8	220.3	47.56	5.631	
6,727.2	6,712.9	6,729.5	6,703.2	23.9	23.9	-100.84	-376.4	79.3	269.3	221.5	47.75	5.639	
6,800.0	6,785.5	6,797.1	6,770.6	24.2	24.1	-101.12	-381.3	81.0	273.9	225.7	48.24	5.677	
6,900.0	6,885.4	6,896.4	6,869.4	24.5	24.5	-100.60	-390.5	84.2	280.9	232.0	48.97	5.738	
6,977.2	6,962.5	6,973.0	6,945.7	24.8	24.8	111.80	-397.9	86.1	285.7	236.2	49.51	5.770	
7,000.0	6,985.4	6,994.0	6,966.5	24.9	24.9	112.11	-399.8	86.8	287.2	237.5	49.65	5.783	
7,100.0	7,085.4	7,088.0	7,060.0	25.2	25.2	113.26	-408.1	91.6	295.3	245.0	50.29	5.872	
7,200.0	7,185.4	7,188.6	7,160.2	25.6	25.6	114.17	-416.2	98.1	304.4	253.4	51.00	5.968	
7,300.0	7,285.4	7,292.8	7,263.9	25.9	26.0	114.88	-423.0	103.8	312.1	260.4	51.75	6.031	
7,400.0	7,385.4	7,393.4	7,364.2	26.2	26.3	115.60	-429.6	108.7	319.3	266.9	52.46	6.087	
7,500.0	7,485.4	7,525.9	7,496.5	26.6	26.8	116.24	-433.1	107.6	319.2	266.0	53.23	5.996	
7,534.5	7,519.8	7,550.3	7,520.8	26.7	26.9	116.15	-432.4	107.4	318.6	265.2	53.48	5.958	
7,600.0	7,585.4	7,597.4	7,567.9	26.9	27.0	115.92	-431.9	109.3	320.6	266.8	53.85	5.954	
7,700.0	7,685.4	7,671.1	7,641.2	27.3	27.3	115.93	-435.2	115.8	330.5	276.3	54.21	6.097	
7,800.0	7,785.4	8,011.7	7,955.9	27.6	28.3	130.53	-461.0	19.0	310.4	262.3	48.15	6.447	
7,900.0	7,885.4	8,138.8	8,042.1	27.9	28.5	147.55	-456.9	-73.7	249.9	203.9	46.00	5.432	
8,000.0	7,985.4	8,213.7	8,078.0	28.3	28.6	166.62	-457.1	-139.3	192.9	142.4	50.47	3.822	
8,100.0	8,085.4	8,257.8	8,092.8	28.6	28.7	-179.22	-456.7	-180.8	164.8	108.0	56.83	2.900	
8,107.0	8,092.3	8,259.7	8,093.3	28.6	28.7	-178.61	-456.6	-182.6	164.7	107.7	56.98	2.890 SF	
8,200.0	8,185.4	8,280.0	8,098.6	29.0	28.7	-171.81	-456.3	-202.3	187.8	134.5	53.30	3.523	
8,300.0	8,285.4	8,292.0	8,101.2	29.3	28.7	-167.85	-456.2	-214.0	250.0	204.6	45.39	5.509	
8,400.0	8,385.4	8,304.0	8,103.4	29.6	28.8	-163.99	-456.3	-225.8	330.6	290.6	40.01	8.263	
8,500.0	8,485.4	8,311.6	8,104.6	30.0	28.8	-161.60	-456.4	-233.3	419.2	382.4	36.82	11.387	
8,600.0	8,585.4	8,316.0	8,105.2	30.3	28.8	-160.26	-456.5	-237.6	511.9	477.0	34.92	14.660	
8,700.0	8,685.4	8,322.4	8,106.1	30.7	28.8	-158.33	-456.6	-244.0	606.7	572.9	33.83	17.934	
8,731.1	8,716.5	8,323.7	8,106.2	30.8	28.8	-157.95	-456.6	-245.3	636.6	603.0	33.58	18.955	
8,750.0	8,735.4	8,328.0	8,106.7	30.8	28.8	105.43	-456.7	-249.5	654.8	621.3	33.51	19.541	
8,775.0	8,760.3	8,328.0	8,106.7	30.9	28.8	94.08	-456.7	-249.5	679.0	645.6	33.35	20.357	
8,800.0	8,785.1	8,328.0	8,106.7	31.0	28.8	81.94	-456.7	-249.5	703.2	670.0	33.23	21.161	
8,825.0	8,809.8	8,328.0	8,106.7	31.1	28.8	70.10	-456.7	-249.5	727.5	694.4	33.14	21.952	
8,850.0	8,834.1	8,323.3	8,106.2	31.2	28.8	58.29	-456.6	-244.9	751.7	718.7	33.01	22.771	
8,875.0	8,858.2	8,322.1	8,106.0	31.2	28.8	49.34	-456.6	-243.7	775.8	742.8	32.96	23.539	
8,900.0	8,881.9	8,320.5	8,105.8	31.3	28.8	42.08	-456.6	-242.1	799.7	766.8	32.92	24.290	
8,925.0	8,905.1	8,316.0	8,105.2	31.4	28.8	35.95	-456.5	-237.6	823.4	790.5	32.87	25.049	
8,950.0	8,927.8	8,316.0	8,105.2	31.4	28.8	31.58	-456.5	-237.6	846.7	813.8	32.90	25.733	
8,975.0	8,949.9	8,316.0	8,105.2	31.5	28.8	28.03	-456.5	-237.6	869.8	836.8	32.96	26.386	
9,000.0	8,971.4	8,311.3	8,104.6	31.6	28.8	24.85	-456.4	-233.0	892.4	859.4	32.97	27.065	
9,025.0	8,992.2	8,308.4	8,104.1	31.6	28.8	22.35	-456.4	-230.1	914.7	881.6	33.03	27.691	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,050.0	9,012.2	8,304.0	8,103.4	31.7	28.8	20.23	-456.3	-225.8	936.5	903.4	33.09	28.303	
9,075.0	9,031.4	8,304.0	8,103.4	31.7	28.8	18.61	-456.3	-225.8	957.8	924.5	33.23	28.818	
9,100.0	9,049.8	8,298.3	8,102.4	31.8	28.7	17.07	-456.3	-220.2	978.5	945.2	33.31	29.374	
9,125.0	9,067.2	8,292.0	8,101.2	31.8	28.7	15.76	-456.2	-214.0	998.7	965.3	33.40	29.904	
9,150.0	9,083.7	8,292.0	8,101.2	31.8	28.7	14.76	-456.2	-214.0	1,018.4	984.7	33.61	30.296	
9,175.0	9,099.1	8,286.5	8,100.0	31.9	28.7	13.80	-456.2	-208.6	1,037.4	1,003.6	33.76	30.732	
9,200.0	9,113.6	8,280.0	8,098.6	31.9	28.7	12.96	-456.3	-202.3	1,055.7	1,021.8	33.90	31.143	
9,225.0	9,126.9	8,280.0	8,098.6	32.0	28.7	12.30	-456.3	-202.3	1,073.4	1,039.2	34.18	31.403	
9,250.0	9,139.1	8,273.0	8,096.9	32.1	28.7	11.66	-456.4	-195.5	1,090.4	1,056.0	34.36	31.737	
9,275.0	9,150.2	8,266.4	8,095.2	32.1	28.7	11.10	-456.5	-189.1	1,106.7	1,072.1	34.56	32.022	
9,300.0	9,160.0	8,266.4	8,095.2	32.3	28.7	10.65	-456.5	-189.1	1,122.2	1,087.3	34.91	32.145	
9,325.0	9,168.7	8,252.9	8,091.4	32.4	28.7	10.17	-456.8	-176.1	1,137.0	1,102.0	35.01	32.472	
9,350.0	9,176.1	8,252.9	8,091.4	32.5	28.7	9.82	-456.8	-176.1	1,151.0	1,115.6	35.41	32.507	
9,375.0	9,182.2	8,245.5	8,089.1	32.6	28.7	9.48	-456.9	-169.1	1,164.1	1,128.5	35.67	32.635	
9,400.0	9,187.1	8,239.3	8,087.1	32.8	28.7	9.18	-457.0	-163.2	1,176.5	1,140.5	35.98	32.702	
9,425.0	9,190.7	8,233.4	8,085.2	32.9	28.7	8.91	-457.1	-157.6	1,188.0	1,151.7	36.30	32.723	
9,450.0	9,193.0	8,225.7	8,082.5	33.0	28.6	8.67	-457.1	-150.4	1,198.6	1,162.0	36.61	32.740	
9,475.0	9,193.9	8,225.7	8,082.5	33.2	28.6	8.48	-457.1	-150.4	1,208.5	1,171.4	37.10	32.570	
9,481.1	9,194.0	8,225.7	8,082.5	33.2	28.6	8.43	-457.1	-150.4	1,210.8	1,173.5	37.23	32.524	
9,500.0	9,194.0	8,212.1	8,077.4	33.4	28.6	8.39	-457.1	-137.9	1,217.8	1,180.5	37.31	32.640	
9,600.0	9,194.0	8,198.6	8,071.8	34.1	28.6	8.35	-457.0	-125.5	1,258.1	1,219.0	39.08	32.195	
9,700.0	9,194.0	8,171.6	8,059.4	35.0	28.6	8.24	-456.9	-101.5	1,303.5	1,263.0	40.52	32.165	
9,800.0	9,194.0	8,158.1	8,052.6	36.0	28.6	8.19	-456.9	-90.0	1,353.4	1,311.2	42.23	32.049	
9,900.0	9,194.0	8,138.4	8,041.8	37.2	28.5	8.12	-456.9	-73.4	1,407.6	1,363.9	43.70	32.208	
10,000.0	9,194.0	8,117.9	8,029.8	38.5	28.5	8.04	-457.2	-56.8	1,465.6	1,420.6	45.06	32.525	
10,100.0	9,194.0	8,104.4	8,021.5	39.9	28.5	8.00	-457.5	-46.2	1,527.1	1,480.6	46.46	32.869	
10,200.0	9,194.0	8,091.0	8,012.8	41.4	28.5	7.95	-457.8	-36.0	1,591.7	1,544.0	47.74	33.342	
10,300.0	9,194.0	8,077.4	8,003.7	42.9	28.4	7.91	-458.3	-26.0	1,659.2	1,610.3	48.90	33.927	
10,400.0	9,194.0	8,057.0	7,989.5	44.6	28.4	7.86	-459.1	-11.4	1,729.1	1,679.2	49.84	34.689	
10,500.0	9,194.0	8,036.7	7,974.8	46.3	28.4	7.80	-460.0	2.6	1,801.2	1,750.5	50.70	35.524	
10,600.0	9,194.0	8,023.1	7,964.6	48.0	28.3	7.76	-460.6	11.7	1,875.3	1,823.7	51.58	36.353	
10,700.0	9,194.0	8,009.6	7,954.3	49.9	28.3	7.71	-461.0	20.4	1,951.2	1,898.8	52.38	37.249	
10,800.0	9,194.0	7,996.0	7,943.7	51.7	28.3	7.66	-461.3	28.9	2,028.8	1,975.7	53.11	38.203	
10,900.0	9,194.0	7,988.2	7,937.5	53.7	28.3	7.62	-461.4	33.6	2,107.9	2,054.1	53.83	39.155	
11,000.0	9,194.0	7,982.6	7,932.9	55.6	28.2	7.60	-461.4	36.9	2,188.5	2,133.9	54.52	40.140	
11,100.0	9,194.0	7,969.1	7,922.0	57.6	28.2	7.54	-461.6	44.7	2,270.3	2,215.2	55.06	41.235	
11,200.0	9,194.0	7,955.7	7,910.8	59.6	28.2	7.48	-461.7	52.1	2,353.3	2,297.7	55.55	42.365	
11,300.0	9,194.0	7,948.2	7,904.5	61.7	28.2	7.44	-461.6	56.1	2,437.3	2,381.3	56.06	43.481	
11,400.0	9,194.0	7,942.3	7,899.4	63.8	28.2	7.41	-461.6	59.2	2,522.4	2,465.8	56.53	44.617	
11,500.0	9,194.0	7,928.9	7,887.8	65.9	28.1	7.33	-461.4	66.0	2,608.3	2,551.4	56.91	45.836	
11,600.0	9,194.0	7,928.9	7,887.8	68.0	28.1	7.33	-461.4	66.0	2,695.1	2,637.7	57.36	46.985	
11,700.0	9,194.0	7,915.4	7,876.0	70.1	28.1	7.25	-461.1	72.4	2,782.7	2,725.0	57.67	48.249	
11,800.0	9,194.0	7,915.4	7,876.0	72.3	28.1	7.25	-461.1	72.4	2,870.9	2,812.9	58.06	49.445	
11,900.0	9,194.0	7,908.8	7,870.1	74.5	28.1	7.21	-460.9	75.5	2,959.8	2,901.5	58.37	50.704	
12,000.0	9,194.0	7,902.0	7,864.0	76.7	28.0	7.17	-460.8	78.4	3,049.4	2,990.7	58.66	51.981	
12,100.0	9,194.0	7,902.0	7,864.0	78.9	28.0	7.17	-460.8	78.4	3,139.5	3,080.5	58.98	53.233	
12,200.0	9,194.0	7,888.6	7,851.8	81.1	28.0	7.09	-460.4	84.0	3,230.1	3,170.9	59.18	54.577	
12,300.0	9,194.0	7,888.6	7,851.8	83.3	28.0	7.09	-460.4	84.0	3,321.2	3,261.7	59.46	55.857	
12,400.0	9,194.0	7,888.6	7,851.8	85.6	28.0	7.09	-460.4	84.0	3,412.8	3,353.0	59.72	57.150	
12,500.0	9,194.0	7,875.1	7,839.4	87.8	28.0	7.00	-459.9	89.3	3,504.7	3,444.8	59.88	58.525	
12,600.0	9,194.0	7,875.1	7,839.4	90.1	28.0	7.00	-459.9	89.3	3,597.0	3,536.9	60.11	59.838	
12,700.0	9,194.0	7,875.1	7,839.4	92.3	28.0	7.00	-459.9	89.3	3,689.7	3,629.4	60.33	61.161	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,800.0	9,194.0	7,861.7	7,827.0	94.6	27.9	6.91	-459.2	94.1	3,782.7	3,722.3	60.47	62.558	
12,900.0	9,194.0	7,861.7	7,827.0	96.9	27.9	6.91	-459.2	94.1	3,876.0	3,815.4	60.66	63.895	
13,000.0	9,194.0	7,861.7	7,827.0	99.2	27.9	6.91	-459.2	94.1	3,969.7	3,908.8	60.85	65.240	
13,100.0	9,194.0	7,848.3	7,814.4	101.5	27.9	6.81	-458.3	98.6	4,063.6	4,002.6	60.96	66.655	
13,200.0	9,194.0	7,848.3	7,814.4	103.8	27.9	6.81	-458.3	98.6	4,157.7	4,096.5	61.13	68.010	
13,300.0	9,194.0	7,848.3	7,814.4	106.1	27.9	6.81	-458.3	98.6	4,252.0	4,190.8	61.29	69.370	
13,400.0	9,194.0	7,848.3	7,814.4	108.4	27.9	6.81	-458.3	98.6	4,346.7	4,285.2	61.45	70.736	
13,500.0	9,194.0	7,841.4	7,807.8	110.7	27.9	6.76	-457.7	100.8	4,441.5	4,379.9	61.57	72.136	
13,600.0	9,194.0	7,834.9	7,801.6	113.0	27.9	6.70	-457.1	102.8	4,536.5	4,474.8	61.69	73.537	
13,700.0	9,194.0	7,834.9	7,801.6	115.3	27.9	6.70	-457.1	102.8	4,631.7	4,569.9	61.83	74.913	
13,800.0	9,194.0	7,834.9	7,801.6	117.7	27.9	6.70	-457.1	102.8	4,727.1	4,665.2	61.96	76.291	
13,900.0	9,194.0	7,834.9	7,801.6	120.0	27.9	6.70	-457.1	102.8	4,822.7	4,760.6	62.09	77.672	
14,000.0	9,194.0	7,834.9	7,801.6	122.3	27.9	6.70	-457.1	102.8	4,918.5	4,856.3	62.22	79.055	
14,100.0	9,194.0	7,821.4	7,788.8	124.7	27.8	6.59	-455.8	106.5	5,014.3	4,952.0	62.29	80.496	
14,200.0	9,194.0	7,821.4	7,788.8	127.0	27.8	6.59	-455.8	106.5	5,110.4	5,047.9	62.41	81.881	
14,300.0	9,194.0	7,821.4	7,788.8	129.4	27.8	6.59	-455.8	106.5	5,206.5	5,144.0	62.53	83.267	
14,400.0	9,194.0	7,821.4	7,788.8	131.7	27.8	6.59	-455.8	106.5	5,302.8	5,240.2	62.64	84.655	
14,500.0	9,194.0	7,821.4	7,788.8	134.1	27.8	6.59	-455.8	106.5	5,399.3	5,336.5	62.75	86.043	
14,600.0	9,194.0	7,821.4	7,788.8	136.4	27.8	6.59	-455.8	106.5	5,495.8	5,433.0	62.86	87.432	
14,700.0	9,194.0	7,821.4	7,788.8	138.8	27.8	6.59	-455.8	106.5	5,592.5	5,529.5	62.96	88.821	
14,800.0	9,194.0	7,814.5	7,782.2	141.1	27.8	6.53	-455.0	108.3	5,689.2	5,626.2	63.05	90.237	
14,900.0	9,194.0	7,808.0	7,775.9	143.5	27.8	6.47	-454.2	109.8	5,786.1	5,723.0	63.13	91.652	
15,000.0	9,194.0	7,808.0	7,775.9	145.8	27.8	6.47	-454.2	109.8	5,883.1	5,819.9	63.23	93.039	
15,100.0	9,194.0	7,808.0	7,775.9	148.2	27.8	6.47	-454.2	109.8	5,980.2	5,916.8	63.33	94.426	
15,200.0	9,194.0	7,808.0	7,775.9	150.6	27.8	6.47	-454.2	109.8	6,077.3	6,013.9	63.43	95.812	
15,300.0	9,194.0	7,808.0	7,775.9	152.9	27.8	6.47	-454.2	109.8	6,174.6	6,111.0	63.53	97.198	
15,400.0	9,194.0	7,808.0	7,775.9	155.3	27.8	6.47	-454.2	109.8	6,271.9	6,208.3	63.62	98.582	
15,500.0	9,194.0	7,808.0	7,775.9	157.7	27.8	6.47	-454.2	109.8	6,369.3	6,305.6	63.72	99.965	
15,600.0	9,194.0	7,808.0	7,775.9	160.0	27.8	6.47	-454.2	109.8	6,466.8	6,403.0	63.81	101.347	
15,700.0	9,194.0	7,808.0	7,775.9	162.4	27.8	6.47	-454.2	109.8	6,564.4	6,500.5	63.90	102.728	
15,800.0	9,194.0	7,801.4	7,769.5	164.8	27.7	6.41	-453.4	111.3	6,661.9	6,598.0	63.98	104.131	
15,900.0	9,194.0	7,794.4	7,762.7	167.2	27.7	6.34	-452.5	112.7	6,759.7	6,695.6	64.05	105.535	
16,000.0	9,194.0	7,794.4	7,762.7	169.5	27.7	6.34	-452.5	112.7	6,857.4	6,793.3	64.14	106.910	
16,100.0	9,194.0	7,794.4	7,762.7	171.9	27.7	6.34	-452.5	112.7	6,955.2	6,891.0	64.23	108.282	
16,200.0	9,194.0	7,794.4	7,762.7	174.3	27.7	6.34	-452.5	112.7	7,053.1	6,988.8	64.32	109.652	
16,300.0	9,194.0	7,794.4	7,762.7	176.7	27.7	6.34	-452.5	112.7	7,151.0	7,086.6	64.41	111.021	
16,400.0	9,194.0	7,794.4	7,762.7	179.1	27.7	6.34	-452.5	112.7	7,249.0	7,184.5	64.50	112.386	
16,500.0	9,194.0	7,794.4	7,762.7	181.4	27.7	6.34	-452.5	112.7	7,347.0	7,282.4	64.59	113.750	
16,600.0	9,194.0	7,794.4	7,762.7	183.8	27.7	6.34	-452.5	112.7	7,445.1	7,380.4	64.68	115.111	
16,700.0	9,194.0	7,794.4	7,762.7	186.2	27.7	6.34	-452.5	112.7	7,543.2	7,478.5	64.77	116.469	
16,800.0	9,194.0	7,794.4	7,762.7	188.6	27.7	6.34	-452.5	112.7	7,641.4	7,576.5	64.85	117.825	
16,900.0	9,194.0	7,794.4	7,762.7	191.0	27.7	6.34	-452.5	112.7	7,739.6	7,674.7	64.94	119.178	
17,000.0	9,194.0	7,794.4	7,762.7	193.4	27.7	6.34	-452.5	112.7	7,837.9	7,772.9	65.03	120.529	
17,100.0	9,194.0	7,794.4	7,762.7	195.8	27.7	6.34	-452.5	112.7	7,936.2	7,871.1	65.12	121.876	
17,200.0	9,194.0	7,794.4	7,762.7	198.1	27.7	6.34	-452.5	112.7	8,034.6	7,969.4	65.20	123.221	
17,300.0	9,194.0	7,787.7	7,756.2	200.5	27.7	6.27	-451.6	113.9	8,132.9	8,067.6	65.28	124.588	
17,400.0	9,194.0	7,780.9	7,749.5	202.9	27.7	6.21	-450.6	115.0	8,231.4	8,166.0	65.35	125.954	
17,500.0	9,194.0	7,780.9	7,749.5	205.3	27.7	6.21	-450.6	115.0	8,329.8	8,264.4	65.44	127.289	
17,600.0	9,194.0	7,780.9	7,749.5	207.7	27.7	6.21	-450.6	115.0	8,428.3	8,362.8	65.53	128.620	
17,700.0	9,194.0	7,780.9	7,749.5	210.1	27.7	6.21	-450.6	115.0	8,526.8	8,461.2	65.62	129.949	
17,800.0	9,194.0	7,780.9	7,749.5	212.5	27.7	6.21	-450.6	115.0	8,625.4	8,559.7	65.71	131.274	
17,900.0	9,194.0	7,780.9	7,749.5	214.9	27.7	6.21	-450.6	115.0	8,724.0	8,658.2	65.79	132.595	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 122H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Rule Assigned: Distance

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,000.0	9,194.0	7,780.9	7,749.5	217.3	27.7	6.21	-450.6	115.0	8,822.6	8,756.7	65.88	133.914	
18,100.0	9,194.0	7,780.9	7,749.5	219.7	27.7	6.21	-450.6	115.0	8,921.2	8,855.3	65.97	135.229	
18,200.0	9,194.0	7,780.9	7,749.5	222.1	27.7	6.21	-450.6	115.0	9,019.9	8,953.9	66.06	136.540	
18,300.0	9,194.0	7,780.9	7,749.5	224.5	27.7	6.21	-450.6	115.0	9,118.6	9,052.5	66.15	137.848	
18,400.0	9,194.0	7,780.9	7,749.5	226.9	27.7	6.21	-450.6	115.0	9,217.4	9,151.1	66.24	139.152	
18,500.0	9,194.0	7,780.9	7,749.5	229.3	27.7	6.21	-450.6	115.0	9,316.1	9,249.8	66.33	140.452	
18,600.0	9,194.0	7,780.9	7,749.5	231.7	27.7	6.21	-450.6	115.0	9,414.9	9,348.5	66.42	141.749	
18,700.0	9,194.0	7,780.9	7,749.5	234.1	27.7	6.21	-450.6	115.0	9,513.7	9,447.2	66.51	143.042	
18,800.0	9,194.0	7,780.9	7,749.5	236.5	27.7	6.21	-450.6	115.0	9,612.6	9,546.0	66.60	144.331	
18,900.0	9,194.0	7,780.9	7,749.5	238.9	27.7	6.21	-450.6	115.0	9,711.4	9,644.7	66.69	145.617	
19,000.0	9,194.0	7,780.9	7,749.5	241.3	27.7	6.21	-450.6	115.0	9,810.3	9,743.5	66.78	146.898	
19,100.0	9,194.0	7,780.9	7,749.5	243.7	27.7	6.21	-450.6	115.0	9,909.2	9,842.3	66.87	148.176	
19,200.0	9,194.0	7,780.9	7,749.5	246.1	27.7	6.21	-450.6	115.0	10,008.1	9,941.2	66.97	149.450	
19,300.0	9,194.0	7,780.9	7,749.5	248.5	27.7	6.21	-450.6	115.0	10,107.1	10,040.0	67.06	150.720	
19,400.0	9,194.0	7,780.9	7,749.5	250.9	27.7	6.21	-450.6	115.0	10,206.1	10,138.9	67.15	151.986	
19,500.0	9,194.0	7,780.9	7,749.5	253.3	27.7	6.21	-450.6	115.0	10,305.0	10,237.8	67.24	153.248	
19,600.0	9,194.0	7,780.9	7,749.5	255.7	27.7	6.21	-450.6	115.0	10,404.1	10,336.7	67.34	154.505	
19,700.0	9,194.0	7,774.1	7,742.9	258.1	27.7	6.14	-449.6	116.0	10,503.0	10,435.6	67.42	155.787	
19,800.0	9,194.0	7,767.3	7,736.2	260.5	27.6	6.07	-448.6	116.9	10,602.1	10,534.6	67.50	157.068	
19,847.1	9,194.0	7,767.3	7,736.2	261.6	27.6	6.07	-448.6	116.9	10,648.8	10,581.2	67.54	157.655	

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-56.90	66.2	-101.5	121.1				
100.0	100.0	102.2	102.2	0.1	0.2	-56.84	66.0	-101.0	120.6	120.3	0.37	330.143	
200.0	200.0	203.0	202.9	0.5	0.6	-56.68	65.5	-99.6	119.2	118.1	1.08	109.939	
300.0	300.0	302.9	302.9	0.8	1.0	-56.43	65.0	-97.9	117.6	115.8	1.80	65.301	
400.0	400.0	403.4	403.3	1.2	1.3	-56.10	64.5	-96.0	115.7	113.2	2.52	45.918	
500.0	500.0	503.5	503.4	1.6	1.7	-55.76	63.9	-93.9	113.6	110.4	3.24	35.118	
600.0	600.0	603.8	603.7	1.9	2.0	-55.07	63.7	-91.3	111.4	107.4	3.95	28.167	
700.0	700.0	703.7	703.6	2.3	2.4	-54.01	64.0	-88.2	109.0	104.4	4.67	23.351	
800.0	800.0	804.5	804.3	2.6	2.8	-52.58	64.6	-84.4	106.3	100.9	5.39	19.737	
900.0	900.0	904.4	904.0	3.0	3.1	-50.61	65.4	-79.7	103.1	97.0	6.10	16.901	
1,000.0	1,000.0	1,002.6	1,002.1	3.4	3.5	-47.84	67.8	-74.9	101.0	94.2	6.81	14.835	
1,100.0	1,100.0	1,102.5	1,101.8	3.7	3.8	-43.80	72.1	-69.2	99.9	92.4	7.52	13.284	
1,148.9	1,148.9	1,150.7	1,149.9	3.9	4.0	-41.73	74.4	-66.4	99.7	91.9	7.87	12.675	CC
1,200.0	1,200.0	1,201.2	1,200.2	4.1	4.2	-39.74	76.8	-63.9	99.9	91.7	8.23	12.145	ES
1,300.0	1,300.0	1,300.2	1,299.0	4.4	4.5	-36.66	81.3	-60.5	101.4	92.5	8.93	11.349	
1,400.0	1,400.0	1,399.4	1,398.1	4.8	4.9	-34.38	85.6	-58.6	103.8	94.2	9.64	10.769	
1,500.0	1,500.0	1,498.5	1,497.1	5.1	5.2	-32.08	90.6	-56.8	107.1	96.7	10.34	10.350	
1,600.0	1,600.0	1,598.2	1,596.6	5.5	5.6	-29.27	96.7	-54.2	110.9	99.9	11.05	10.036	
1,700.0	1,700.0	1,697.3	1,695.4	5.9	5.9	-26.76	102.9	-51.9	115.3	103.6	11.76	9.810	
1,800.0	1,800.0	1,796.2	1,794.1	6.2	6.3	-24.53	109.5	-50.0	120.6	108.1	12.46	9.678	
1,900.0	1,900.0	1,895.5	1,893.1	6.6	6.6	-22.59	116.7	-48.6	126.6	113.5	13.17	9.617	
2,000.0	2,000.0	1,996.0	1,993.4	6.9	7.0	-20.69	123.9	-46.8	132.7	118.8	13.89	9.554	
2,100.0	2,100.0	2,096.7	2,093.8	7.3	7.3	-18.68	130.8	-44.2	138.2	123.6	14.61	9.461	
2,200.0	2,200.0	2,198.3	2,195.1	7.7	7.7	-16.75	136.6	-41.1	142.8	127.5	15.34	9.312	
2,300.0	2,300.0	2,297.6	2,294.2	8.0	8.1	-14.92	141.9	-37.8	147.0	131.0	16.05	9.162	
2,400.0	2,400.0	2,395.5	2,391.9	8.4	8.4	-13.04	148.1	-34.3	152.3	135.6	16.75	9.093	SF
2,500.0	2,500.0	2,494.0	2,490.1	8.7	8.8	-11.23	155.4	-30.9	158.8	141.3	17.46	9.095	
2,600.0	2,600.0	2,593.0	2,588.7	9.1	9.1	-9.54	163.2	-27.4	166.0	147.8	18.17	9.134	
2,700.0	2,700.0	2,692.4	2,687.7	9.4	9.5	-8.04	171.3	-24.2	173.5	154.6	18.88	9.189	
2,800.0	2,800.0	2,791.3	2,786.3	9.8	9.8	-6.74	179.5	-21.2	181.4	161.8	19.59	9.257	
2,900.0	2,900.0	2,889.8	2,884.3	10.1	10.2	143.17	188.2	-18.4	191.2	170.9	20.28	9.427	
3,000.0	2,999.8	2,988.2	2,982.3	10.5	10.5	144.90	197.2	-15.6	204.4	183.4	20.96	9.749	
3,050.0	3,049.7	3,037.1	3,030.9	10.6	10.7	145.87	201.8	-14.2	212.2	190.9	21.30	9.961	
3,100.0	3,099.5	3,085.5	3,079.0	10.8	10.9	146.90	206.4	-12.9	220.5	198.9	21.63	10.194	
3,200.0	3,199.1	3,182.7	3,175.7	11.1	11.2	148.70	216.2	-10.4	237.9	215.6	22.31	10.666	
3,300.0	3,298.7	3,280.1	3,272.6	11.5	11.6	150.25	226.3	-7.9	255.8	232.8	22.98	11.129	
3,400.0	3,398.4	3,376.7	3,368.6	11.8	11.9	151.54	236.7	-5.7	274.2	250.6	23.65	11.593	
3,500.0	3,498.0	3,474.9	3,466.2	12.1	12.3	152.64	247.8	-3.6	293.2	268.9	24.34	12.046	
3,600.0	3,597.6	3,577.8	3,568.5	12.5	12.7	153.90	258.2	-0.2	311.4	286.3	25.08	12.417	
3,700.0	3,697.2	3,679.5	3,669.7	12.8	13.0	155.20	267.3	4.2	328.6	302.8	25.80	12.736	
3,800.0	3,796.8	3,785.3	3,775.1	13.2	13.4	156.66	274.5	9.9	344.0	317.4	26.54	12.959	
3,900.0	3,896.4	3,886.2	3,875.7	13.5	13.8	158.02	280.1	15.7	358.3	331.1	27.25	13.148	
4,000.0	3,996.1	3,987.3	3,976.5	13.9	14.1	159.07	285.3	20.1	372.2	344.3	27.96	13.311	
4,100.0	4,095.7	4,087.9	4,076.9	14.2	14.5	159.95	290.0	23.7	385.7	357.0	28.67	13.451	
4,200.0	4,195.3	4,188.5	4,177.3	14.6	14.9	161.08	293.8	29.4	398.7	369.3	29.38	13.572	
4,300.0	4,294.9	4,286.4	4,274.9	15.0	15.2	162.15	297.3	35.2	411.9	381.8	30.07	13.696	
4,400.0	4,394.5	4,384.9	4,373.2	15.3	15.6	163.17	301.1	41.1	425.3	394.6	30.77	13.823	
4,500.0	4,494.2	4,481.8	4,469.8	15.7	15.9	164.20	304.8	47.6	439.2	407.7	31.46	13.960	
4,600.0	4,593.8	4,578.5	4,566.1	16.0	16.3	165.29	308.7	55.2	453.6	421.4	32.15	14.110	
4,700.0	4,693.4	4,676.3	4,663.5	16.4	16.6	166.34	312.8	63.1	468.4	435.6	32.84	14.263	
4,800.0	4,793.0	4,771.9	4,758.8	16.8	17.0	167.17	317.6	69.8	483.9	450.4	33.52	14.434	
4,900.0	4,892.6	4,870.2	4,856.8	17.1	17.3	167.90	323.0	76.3	499.7	465.5	34.23	14.601	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,992.3	4,969.6	4,955.8	17.5	17.7	168.55	328.5	82.5	515.5	480.6	34.93	14.757	
5,100.0	5,091.9	5,069.1	5,054.9	17.9	18.0	169.10	334.1	88.1	531.3	495.6	35.64	14.905	
5,200.0	5,191.5	5,170.8	5,156.4	18.2	18.4	169.52	339.9	92.7	546.7	510.3	36.37	15.032	
5,300.0	5,291.1	5,272.2	5,257.5	18.6	18.8	169.85	345.3	96.4	561.6	524.5	37.09	15.141	
5,400.0	5,390.7	5,375.6	5,360.8	19.0	19.2	170.08	350.7	99.3	576.0	538.2	37.82	15.229	
5,500.0	5,490.4	5,480.2	5,465.2	19.3	19.5	170.17	355.6	100.6	589.4	550.8	38.56	15.285	
5,600.0	5,590.0	5,584.7	5,569.7	19.7	19.9	170.17	360.1	100.7	602.0	562.7	39.29	15.323	
5,700.0	5,689.6	5,681.4	5,666.3	20.1	20.2	170.16	363.9	100.6	614.1	574.1	39.98	15.361	
5,800.0	5,789.2	5,768.1	5,752.9	20.4	20.6	170.24	368.2	101.8	627.9	587.2	40.62	15.458	
5,900.0	5,888.8	5,869.0	5,853.6	20.8	20.9	170.36	373.8	103.9	642.3	600.9	41.34	15.538	
6,000.0	5,988.5	5,973.9	5,958.3	21.2	21.3	170.47	379.0	105.5	656.0	613.9	42.08	15.591	
6,100.0	6,088.1	6,064.7	6,049.0	21.6	21.6	170.53	383.5	106.8	669.8	627.0	42.74	15.672	
6,200.0	6,187.7	6,150.7	6,134.8	21.9	21.9	170.67	389.2	109.6	685.6	642.3	43.36	15.812	
6,300.0	6,287.3	6,281.9	6,265.7	22.3	22.4	170.87	396.0	112.9	700.0	655.7	44.26	15.815	
6,400.0	6,386.9	6,381.5	6,365.4	22.7	22.8	170.93	398.8	113.3	711.4	666.4	44.97	15.818	
6,500.0	6,486.6	6,478.9	6,462.6	23.1	23.1	171.00	402.3	114.3	723.6	678.0	45.67	15.845	
6,600.0	6,586.2	6,573.2	6,557.0	23.4	23.4	171.05	405.6	114.9	735.7	689.4	46.35	15.872	
6,700.0	6,685.8	6,680.6	6,664.2	23.8	23.8	171.27	409.1	117.9	748.4	701.3	47.11	15.888	
6,727.2	6,712.9	6,707.1	6,690.6	23.9	23.9	171.35	409.5	118.9	751.6	704.3	47.30	15.891	
6,800.0	6,785.5	6,764.6	6,748.1	24.2	24.1	171.58	410.7	121.6	759.7	711.9	47.73	15.915	
6,900.0	6,885.4	6,846.0	6,829.2	24.5	24.4	171.91	414.4	127.0	770.8	722.5	48.33	15.949	
6,977.2	6,962.5	6,902.7	6,885.7	24.8	24.6	23.62	417.6	131.6	778.4	729.6	48.72	15.976	
7,000.0	6,985.4	6,917.5	6,900.4	24.9	24.7	23.67	418.7	132.9	780.8	731.9	48.81	15.995	
7,100.0	7,085.4	7,013.8	6,996.0	25.2	25.0	23.97	427.2	141.2	792.3	742.8	49.49	16.008	
7,200.0	7,185.4	7,105.3	7,086.7	25.6	25.4	24.08	436.7	147.0	804.4	754.3	50.13	16.047	
7,300.0	7,285.4	7,206.2	7,186.8	25.9	25.7	24.12	447.9	152.6	816.7	765.9	50.85	16.062	
7,400.0	7,385.4	7,302.3	7,282.2	26.2	26.1	24.02	459.4	156.3	829.2	777.7	51.53	16.093	
7,500.0	7,485.4	7,416.9	7,396.0	26.6	26.5	23.92	472.3	160.4	841.0	788.6	52.37	16.059	
7,600.0	7,585.4	7,522.8	7,501.3	26.9	26.9	23.80	482.7	163.1	851.0	797.8	53.13	16.018	
7,700.0	7,685.4	7,642.7	7,620.8	27.3	27.3	23.57	493.7	164.2	859.8	805.8	53.98	15.927	
7,800.0	7,785.4	7,728.9	7,706.7	27.6	27.6	23.43	500.8	164.9	867.6	813.1	54.59	15.893	
7,900.0	7,885.4	7,837.9	7,815.2	27.9	28.0	23.23	510.8	165.9	876.5	821.1	55.37	15.831	
8,000.0	7,985.4	7,966.1	7,943.0	28.3	28.5	22.99	520.1	165.9	883.2	827.0	56.25	15.703	
8,100.0	8,085.4	8,077.5	8,054.2	28.6	28.9	22.77	525.7	164.7	887.4	830.4	57.01	15.567	
8,200.0	8,185.4	8,196.4	8,173.1	29.0	29.3	22.60	529.4	163.4	889.8	832.0	57.78	15.400	
8,300.0	8,285.4	8,299.3	8,275.9	29.3	29.6	22.51	531.3	162.6	891.3	832.8	58.49	15.238	
8,400.0	8,385.4	8,423.1	8,399.8	29.6	30.1	22.43	531.8	161.5	891.3	832.1	59.24	15.046	
8,500.0	8,485.4	8,573.1	8,549.1	30.0	30.5	21.83	529.2	150.3	886.9	827.0	59.93	14.800	
8,600.0	8,585.4	8,671.4	8,643.7	30.3	30.8	20.17	532.2	124.2	880.0	819.4	60.61	14.518	
8,700.0	8,685.4	8,809.6	8,769.8	30.7	31.3	16.56	539.5	68.7	871.5	810.2	61.27	14.224	
8,731.1	8,716.5	8,845.4	8,800.7	30.8	31.4	15.38	541.6	50.7	868.5	807.1	61.49	14.125	
8,750.0	8,735.4	8,876.9	8,827.1	30.8	31.5	-76.30	543.4	33.5	866.6	805.0	61.60	14.067	
8,775.0	8,760.3	8,913.1	8,856.3	30.9	31.6	-78.19	545.3	12.2	863.5	801.8	61.77	13.981	
8,800.0	8,785.1	8,948.9	8,883.9	31.0	31.7	-80.32	546.9	-10.6	860.2	798.2	61.93	13.888	
8,825.0	8,809.8	9,003.5	8,923.0	31.1	31.8	-83.72	548.5	-48.6	856.5	794.5	62.06	13.802	
8,850.0	8,834.1	9,045.8	8,950.8	31.2	31.9	-86.71	548.6	-80.5	852.7	790.5	62.22	13.704	
8,875.0	8,858.2	9,072.8	8,967.2	31.2	32.0	-88.86	548.2	-101.9	849.0	786.5	62.43	13.598	
8,900.0	8,881.9	9,093.6	8,979.1	31.3	32.0	-90.60	547.5	-118.9	845.7	783.1	62.65	13.500	
8,925.0	8,905.1	9,100.0	8,982.7	31.4	32.1	-91.34	547.3	-124.2	843.1	780.3	62.87	13.411	
8,950.0	8,927.8	9,104.1	8,984.9	31.4	32.1	-91.85	547.2	-127.7	841.3	778.2	63.06	13.341	
8,975.0	8,949.9	9,106.4	8,986.1	31.5	32.1	-92.13	547.1	-129.6	840.2	777.0	63.22	13.290	
8,996.5	8,968.4	9,107.1	8,986.5	31.6	32.1	-92.21	547.1	-130.2	839.9	776.6	63.33	13.262	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,000.0	8,971.4	9,107.1	8,986.5	31.6	32.1	-92.21	547.1	-130.2	839.9	776.6	63.35	13.259	
9,025.0	8,992.2	9,106.6	8,986.2	31.6	32.1	-92.12	547.1	-129.8	840.4	777.0	63.44	13.248	
9,050.0	9,012.2	9,105.0	8,985.4	31.7	32.1	-91.85	547.1	-128.4	841.7	778.2	63.50	13.256	
9,075.0	9,031.4	9,102.3	8,983.9	31.7	32.1	-91.42	547.2	-126.1	843.8	780.3	63.53	13.282	
9,100.0	9,049.8	9,098.6	8,981.9	31.8	32.1	-90.83	547.4	-123.0	846.6	783.1	63.53	13.327	
9,125.0	9,067.2	9,094.1	8,979.4	31.8	32.0	-90.10	547.5	-119.3	850.2	786.7	63.50	13.389	
9,150.0	9,083.7	9,088.6	8,976.3	31.8	32.0	-89.22	547.7	-114.7	854.4	790.9	63.45	13.466	
9,175.0	9,099.1	9,081.0	8,972.0	31.9	32.0	-88.13	547.9	-108.5	859.3	795.9	63.37	13.560	
9,200.0	9,113.6	9,071.4	8,966.4	31.9	32.0	-86.85	548.2	-100.8	864.7	801.4	63.26	13.669	
9,225.0	9,126.9	9,060.2	8,959.7	32.0	32.0	-85.40	548.4	-91.8	870.7	807.5	63.13	13.792	
9,250.0	9,139.1	9,050.2	8,953.5	32.1	31.9	-83.99	548.6	-83.9	877.1	814.1	63.00	13.922	
9,275.0	9,150.2	9,039.6	8,946.9	32.1	31.9	-82.50	548.7	-75.6	883.9	821.0	62.86	14.061	
9,300.0	9,160.0	9,027.3	8,938.9	32.3	31.9	-80.88	548.7	-66.3	891.1	828.4	62.71	14.209	
9,325.0	9,168.7	9,016.3	8,931.6	32.4	31.9	-79.31	548.6	-58.0	898.5	836.0	62.57	14.359	
9,350.0	9,176.1	9,006.2	8,924.8	32.5	31.8	-77.79	548.5	-50.5	906.3	843.8	62.46	14.509	
9,375.0	9,182.2	8,995.3	8,917.3	32.6	31.8	-76.21	548.4	-42.6	914.2	851.8	62.35	14.663	
9,400.0	9,187.1	8,981.7	8,907.8	32.8	31.8	-74.50	548.1	-32.9	922.2	860.0	62.21	14.824	
9,425.0	9,190.7	8,968.1	8,898.0	32.9	31.7	-72.82	547.6	-23.5	930.4	868.3	62.09	14.984	
9,450.0	9,193.0	8,958.3	8,890.8	33.0	31.7	-71.34	547.3	-16.8	938.5	876.5	62.04	15.128	
9,475.0	9,193.9	8,948.1	8,883.2	33.2	31.7	-69.87	546.8	-10.0	946.8	884.8	62.00	15.270	
9,481.1	9,194.0	8,945.5	8,881.3	33.2	31.7	-69.51	546.7	-8.4	948.8	886.8	61.99	15.305	
9,500.0	9,194.0	8,937.8	8,875.4	33.4	31.6	-69.16	546.4	-3.3	955.1	893.1	61.97	15.411	
9,600.0	9,194.0	8,900.7	8,846.4	34.1	31.5	-67.41	544.7	19.7	992.4	930.4	61.97	16.013	
9,700.0	9,194.0	8,867.4	8,819.2	35.0	31.4	-65.80	542.9	38.8	1,036.0	973.9	62.08	16.689	
9,800.0	9,194.0	8,839.3	8,795.6	36.0	31.4	-64.42	541.2	53.9	1,085.5	1,023.2	62.29	17.426	
9,900.0	9,194.0	8,816.0	8,775.4	37.2	31.3	-63.27	539.9	65.6	1,140.4	1,077.9	62.59	18.221	
10,000.0	9,194.0	8,792.7	8,755.0	38.5	31.2	-62.12	538.6	76.6	1,200.3	1,137.5	62.88	19.089	
10,100.0	9,194.0	8,775.1	8,739.3	39.9	31.2	-61.26	537.7	84.6	1,264.6	1,201.3	63.24	19.996	
10,200.0	9,194.0	8,757.4	8,723.3	41.4	31.1	-60.40	536.9	92.2	1,332.6	1,269.0	63.57	20.963	
10,300.0	9,194.0	8,738.6	8,706.2	42.9	31.1	-59.49	536.0	99.9	1,403.9	1,340.1	63.85	21.987	
10,400.0	9,194.0	8,719.6	8,688.8	44.6	31.0	-58.57	535.0	107.3	1,478.0	1,413.9	64.10	23.058	
10,500.0	9,194.0	8,704.9	8,675.2	46.3	31.0	-57.87	534.2	112.7	1,554.7	1,490.3	64.37	24.151	
10,600.0	9,194.0	8,690.8	8,662.0	48.0	30.9	-57.19	533.4	117.7	1,633.5	1,568.9	64.62	25.278	
10,700.0	9,194.0	8,677.7	8,649.6	49.9	30.9	-56.57	532.6	122.2	1,714.2	1,649.4	64.85	26.434	
10,800.0	9,194.0	8,666.6	8,639.1	51.7	30.8	-56.05	532.0	125.8	1,796.7	1,731.6	65.07	27.611	
10,900.0	9,194.0	8,658.0	8,631.0	53.7	30.8	-55.65	531.6	128.6	1,880.7	1,815.4	65.29	28.803	
11,000.0	9,194.0	8,644.4	8,618.1	55.6	30.8	-55.02	530.9	132.7	1,966.1	1,900.6	65.45	30.040	
11,100.0	9,194.0	8,644.4	8,618.1	57.6	30.8	-55.02	530.9	132.7	2,052.6	1,986.9	65.70	31.242	
11,200.0	9,194.0	8,630.9	8,605.1	59.6	30.7	-54.40	530.4	136.6	2,140.2	2,074.4	65.82	32.517	
11,300.0	9,194.0	8,630.9	8,605.1	61.7	30.7	-54.40	530.4	136.6	2,228.8	2,162.8	66.03	33.757	
11,400.0	9,194.0	8,617.3	8,592.1	63.8	30.7	-53.79	529.9	140.2	2,318.2	2,252.1	66.12	35.062	
11,500.0	9,194.0	8,617.3	8,592.1	65.9	30.7	-53.79	529.9	140.2	2,408.4	2,342.1	66.29	36.330	
11,600.0	9,194.0	8,609.2	8,584.2	68.0	30.6	-53.43	529.7	142.3	2,499.3	2,432.9	66.40	37.640	
11,700.0	9,194.0	8,603.7	8,579.0	70.1	30.6	-53.19	529.6	143.7	2,590.8	2,524.3	66.52	38.950	
11,800.0	9,194.0	8,603.7	8,579.0	72.3	30.6	-53.19	529.6	143.7	2,682.9	2,616.2	66.65	40.252	
11,900.0	9,194.0	8,595.9	8,571.4	74.5	30.6	-52.85	529.4	145.5	2,775.5	2,708.7	66.74	41.588	
12,000.0	9,194.0	8,590.1	8,565.8	76.7	30.6	-52.60	529.4	146.8	2,868.5	2,801.7	66.83	42.925	
12,100.0	9,194.0	8,590.1	8,565.8	78.9	30.6	-52.60	529.4	146.8	2,962.0	2,895.0	66.94	44.249	
12,200.0	9,194.0	8,590.1	8,565.8	81.1	30.6	-52.60	529.4	146.8	3,055.9	2,988.8	67.04	45.580	
12,300.0	9,194.0	8,582.5	8,558.3	83.3	30.6	-52.27	529.3	148.5	3,150.1	3,082.9	67.11	46.941	
12,400.0	9,194.0	8,576.6	8,552.5	85.6	30.5	-52.02	529.3	149.7	3,244.6	3,177.4	67.18	48.301	
12,500.0	9,194.0	8,576.6	8,552.5	87.8	30.5	-52.02	529.3	149.7	3,339.4	3,272.2	67.27	49.646	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.0	9,194.0	8,576.6	8,552.5	90.1	30.5	-52.02	529.3	149.7	3,434.6	3,367.2	67.35	50.995	
12,700.0	9,194.0	8,576.6	8,552.5	92.3	30.5	-52.02	529.3	149.7	3,530.0	3,462.5	67.43	52.348	
12,800.0	9,194.0	8,569.3	8,545.3	94.6	30.5	-51.71	529.2	151.1	3,625.6	3,558.1	67.48	53.725	
12,900.0	9,194.0	8,563.0	8,539.2	96.9	30.5	-51.45	529.3	152.2	3,721.4	3,653.9	67.54	55.102	
13,000.0	9,194.0	8,563.0	8,539.2	99.2	30.5	-51.45	529.3	152.2	3,817.4	3,749.8	67.61	56.462	
13,100.0	9,194.0	8,563.0	8,539.2	101.5	30.5	-51.45	529.3	152.2	3,913.7	3,846.0	67.68	57.823	
13,200.0	9,194.0	8,563.0	8,539.2	103.8	30.5	-51.45	529.3	152.2	4,010.1	3,942.3	67.75	59.187	
13,300.0	9,194.0	8,563.0	8,539.2	106.1	30.5	-51.45	529.3	152.2	4,106.7	4,038.8	67.82	60.552	
13,400.0	9,194.0	8,557.0	8,533.2	108.4	30.5	-51.20	529.3	153.2	4,203.4	4,135.5	67.87	61.934	
13,500.0	9,194.0	8,549.6	8,525.9	110.7	30.5	-50.89	529.4	154.4	4,300.3	4,232.3	67.91	63.322	
13,600.0	9,194.0	8,549.6	8,525.9	113.0	30.5	-50.89	529.4	154.4	4,397.2	4,329.3	67.98	64.688	
13,700.0	9,194.0	8,549.6	8,525.9	115.3	30.5	-50.89	529.4	154.4	4,494.3	4,426.3	68.04	66.055	
13,800.0	9,194.0	8,549.6	8,525.9	117.7	30.5	-50.89	529.4	154.4	4,591.6	4,523.5	68.10	67.421	
13,900.0	9,194.0	8,549.6	8,525.9	120.0	30.5	-50.89	529.4	154.4	4,688.9	4,620.8	68.16	68.788	
14,000.0	9,194.0	8,549.6	8,525.9	122.3	30.5	-50.89	529.4	154.4	4,786.4	4,718.2	68.23	70.155	
14,100.0	9,194.0	8,549.6	8,525.9	124.7	30.5	-50.89	529.4	154.4	4,884.0	4,815.7	68.29	71.521	
14,200.0	9,194.0	8,549.6	8,525.9	127.0	30.5	-50.89	529.4	154.4	4,981.6	4,913.3	68.35	72.887	
14,300.0	9,194.0	8,543.0	8,519.4	129.4	30.4	-50.62	529.5	155.3	5,079.3	5,010.9	68.39	74.269	
14,400.0	9,194.0	8,536.1	8,512.6	131.7	30.4	-50.35	529.6	156.2	5,177.2	5,108.7	68.43	75.653	
14,500.0	9,194.0	8,536.1	8,512.6	134.1	30.4	-50.35	529.6	156.2	5,275.1	5,206.6	68.49	77.015	
14,600.0	9,194.0	8,536.1	8,512.6	136.4	30.4	-50.35	529.6	156.2	5,373.0	5,304.5	68.55	78.376	
14,700.0	9,194.0	8,536.1	8,512.6	138.8	30.4	-50.35	529.6	156.2	5,471.1	5,402.4	68.61	79.737	
14,800.0	9,194.0	8,536.1	8,512.6	141.1	30.4	-50.35	529.6	156.2	5,569.2	5,500.5	68.67	81.095	
14,900.0	9,194.0	8,536.1	8,512.6	143.5	30.4	-50.35	529.6	156.2	5,667.3	5,598.6	68.73	82.453	
15,000.0	9,194.0	8,536.1	8,512.6	145.8	30.4	-50.35	529.6	156.2	5,765.6	5,696.8	68.79	83.809	
15,100.0	9,194.0	8,536.1	8,512.6	148.2	30.4	-50.35	529.6	156.2	5,863.9	5,795.0	68.85	85.163	
15,200.0	9,194.0	8,536.1	8,512.6	150.6	30.4	-50.35	529.6	156.2	5,962.2	5,893.3	68.92	86.515	
15,300.0	9,194.0	8,536.1	8,512.6	152.9	30.4	-50.35	529.6	156.2	6,060.6	5,991.6	68.98	87.866	
15,400.0	9,194.0	8,536.1	8,512.6	155.3	30.4	-50.35	529.6	156.2	6,159.1	6,090.0	69.04	89.214	
15,500.0	9,194.0	8,529.5	8,506.0	157.7	30.4	-50.08	529.7	157.0	6,257.5	6,188.5	69.08	90.579	
15,600.0	9,194.0	8,522.7	8,499.3	160.0	30.4	-49.81	529.9	157.7	6,356.1	6,287.0	69.13	91.943	
15,700.0	9,194.0	8,522.7	8,499.3	162.4	30.4	-49.81	529.9	157.7	6,454.7	6,385.5	69.19	93.285	
15,800.0	9,194.0	8,522.7	8,499.3	164.8	30.4	-49.81	529.9	157.7	6,553.3	6,484.1	69.26	94.625	
15,900.0	9,194.0	8,522.7	8,499.3	167.2	30.4	-49.81	529.9	157.7	6,652.0	6,582.6	69.32	95.962	
16,000.0	9,194.0	8,522.7	8,499.3	169.5	30.4	-49.81	529.9	157.7	6,750.7	6,681.3	69.38	97.297	
16,100.0	9,194.0	8,522.7	8,499.3	171.9	30.4	-49.81	529.9	157.7	6,849.4	6,780.0	69.45	98.630	
16,200.0	9,194.0	8,522.7	8,499.3	174.3	30.4	-49.81	529.9	157.7	6,948.2	6,878.7	69.51	99.960	
16,300.0	9,194.0	8,522.7	8,499.3	176.7	30.4	-49.81	529.9	157.7	7,047.0	6,977.4	69.57	101.287	
16,400.0	9,194.0	8,522.7	8,499.3	179.1	30.4	-49.81	529.9	157.7	7,145.8	7,076.2	69.64	102.612	
16,500.0	9,194.0	8,522.7	8,499.3	181.4	30.4	-49.81	529.9	157.7	7,244.7	7,175.0	69.70	103.934	
16,600.0	9,194.0	8,522.7	8,499.3	183.8	30.4	-49.81	529.9	157.7	7,343.6	7,273.8	69.77	105.254	
16,700.0	9,194.0	8,522.7	8,499.3	186.2	30.4	-49.81	529.9	157.7	7,442.5	7,372.7	69.84	106.571	
16,800.0	9,194.0	8,522.7	8,499.3	188.6	30.4	-49.81	529.9	157.7	7,541.5	7,471.6	69.90	107.884	
16,900.0	9,194.0	8,522.7	8,499.3	191.0	30.4	-49.81	529.9	157.7	7,640.5	7,570.5	69.97	109.195	
17,000.0	9,194.0	8,522.7	8,499.3	193.4	30.4	-49.81	529.9	157.7	7,739.5	7,669.4	70.04	110.503	
17,100.0	9,194.0	8,522.7	8,499.3	195.8	30.4	-49.81	529.9	157.7	7,838.5	7,768.4	70.11	111.808	
17,200.0	9,194.0	8,522.7	8,499.3	198.1	30.4	-49.81	529.9	157.7	7,937.6	7,867.4	70.18	113.110	
17,300.0	9,194.0	8,522.7	8,499.3	200.5	30.4	-49.81	529.9	157.7	8,036.7	7,966.4	70.25	114.409	
17,400.0	9,194.0	8,522.7	8,499.3	202.9	30.4	-49.81	529.9	157.7	8,135.8	8,065.5	70.31	115.705	
17,500.0	9,194.0	8,522.7	8,499.3	205.3	30.4	-49.81	529.9	157.7	8,234.9	8,164.5	70.39	116.997	
17,600.0	9,194.0	8,516.1	8,492.6	207.7	30.3	-49.54	530.0	158.3	8,334.0	8,263.6	70.44	118.306	
17,700.0	9,194.0	8,509.3	8,485.9	210.1	30.3	-49.28	530.1	158.9	8,433.2	8,362.7	70.50	119.614	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 131H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 14-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Rule Assigned: Distance

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	9,194.0	8,509.3	8,485.9	212.5	30.3	-49.28	530.1	158.9	8,532.4	8,461.8	70.58	120.897	
17,900.0	9,194.0	8,509.3	8,485.9	214.9	30.3	-49.28	530.1	158.9	8,631.6	8,560.9	70.65	122.176	
18,000.0	9,194.0	8,509.3	8,485.9	217.3	30.3	-49.28	530.1	158.9	8,730.8	8,660.1	70.72	123.453	
18,100.0	9,194.0	8,509.3	8,485.9	219.7	30.3	-49.28	530.1	158.9	8,830.0	8,759.2	70.80	124.725	
18,200.0	9,194.0	8,509.3	8,485.9	222.1	30.3	-49.28	530.1	158.9	8,929.3	8,858.4	70.87	125.995	
18,300.0	9,194.0	8,509.3	8,485.9	224.5	30.3	-49.28	530.1	158.9	9,028.5	8,957.6	70.95	127.261	
18,400.0	9,194.0	8,509.3	8,485.9	226.9	30.3	-49.28	530.1	158.9	9,127.8	9,056.8	71.02	128.523	
18,500.0	9,194.0	8,509.3	8,485.9	229.3	30.3	-49.28	530.1	158.9	9,227.1	9,156.0	71.10	129.783	
18,600.0	9,194.0	8,509.3	8,485.9	231.7	30.3	-49.28	530.1	158.9	9,326.4	9,255.2	71.17	131.038	
18,700.0	9,194.0	8,509.3	8,485.9	234.1	30.3	-49.28	530.1	158.9	9,425.7	9,354.5	71.25	132.290	
18,800.0	9,194.0	8,509.3	8,485.9	236.5	30.3	-49.28	530.1	158.9	9,525.1	9,453.8	71.33	133.539	
18,900.0	9,194.0	8,509.3	8,485.9	238.9	30.3	-49.28	530.1	158.9	9,624.4	9,553.0	71.41	134.783	
19,000.0	9,194.0	8,509.3	8,485.9	241.3	30.3	-49.28	530.1	158.9	9,723.8	9,652.3	71.49	136.025	
19,100.0	9,194.0	8,509.3	8,485.9	243.7	30.3	-49.28	530.1	158.9	9,823.2	9,751.6	71.57	137.262	
19,200.0	9,194.0	8,509.3	8,485.9	246.1	30.3	-49.28	530.1	158.9	9,922.6	9,850.9	71.65	138.496	
19,300.0	9,194.0	8,509.3	8,485.9	248.5	30.3	-49.28	530.1	158.9	10,022.0	9,950.3	71.73	139.727	
19,400.0	9,194.0	8,509.3	8,485.9	250.9	30.3	-49.28	530.1	158.9	10,121.4	10,049.6	71.81	140.953	
19,500.0	9,194.0	8,509.3	8,485.9	253.3	30.3	-49.28	530.1	158.9	10,220.8	10,148.9	71.89	142.176	
19,600.0	9,194.0	8,509.3	8,485.9	255.7	30.3	-49.28	530.1	158.9	10,320.3	10,248.3	71.97	143.395	
19,700.0	9,194.0	8,509.3	8,485.9	258.1	30.3	-49.28	530.1	158.9	10,419.7	10,347.7	72.05	144.611	
19,800.0	9,194.0	8,509.3	8,485.9	260.5	30.3	-49.28	530.1	158.9	10,519.2	10,447.0	72.14	145.822	
19,847.1	9,194.0	8,509.3	8,485.9	261.6	30.3	-49.28	530.1	158.9	10,566.0	10,493.8	72.18	146.392	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 15-MWD+IFR1+MS — **Rule Assigned:** Distance — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-110.96	-38.9	-101.5	108.7				
100.0	100.0	99.9	99.9	0.1	0.3	-111.38	-39.6	-101.2	108.7	108.3	0.38	288.821	
200.0	200.0	199.8	199.8	0.5	0.6	-112.64	-41.9	-100.5	108.8	107.8	1.09	99.508	
300.0	300.0	299.7	299.6	0.8	1.0	-114.38	-45.1	-99.4	109.1	107.3	1.81	60.233	
400.0	400.0	399.6	399.4	1.2	1.3	-116.31	-48.6	-98.2	109.6	107.1	2.53	43.312	
500.0	500.0	499.7	499.5	1.6	1.7	-118.08	-51.8	-97.2	110.1	106.9	3.25	33.893	
600.0	600.0	600.1	599.9	1.9	2.1	-119.33	-54.1	-96.2	110.4	106.4	3.97	27.820	
700.0	700.0	700.6	700.3	2.3	2.4	-120.49	-56.0	-95.1	110.4	105.7	4.69	23.549	
800.0	800.0	801.7	801.4	2.6	2.8	-121.50	-57.3	-93.4	109.6	104.2	5.41	20.276	
900.0	900.0	902.8	902.5	3.0	3.1	-122.37	-57.7	-91.1	107.8	101.7	6.12	17.623	
1,000.0	1,000.0	1,004.1	1,003.7	3.4	3.5	-123.64	-58.1	-87.3	104.9	98.1	6.83	15.358	
1,100.0	1,100.0	1,104.6	1,104.0	3.7	3.8	-125.75	-58.9	-81.9	100.9	93.4	7.55	13.376	
1,200.0	1,200.0	1,203.6	1,203.0	4.1	4.2	-127.57	-59.4	-77.2	97.5	89.2	8.26	11.805	
1,300.0	1,300.0	1,301.7	1,301.0	4.4	4.5	-128.61	-59.3	-74.3	95.1	86.1	8.96	10.607	
1,400.0	1,400.0	1,402.1	1,401.4	4.8	4.9	-129.34	-59.6	-72.8	94.1	84.4	9.68	9.720	
1,500.0	1,500.0	1,502.9	1,502.1	5.1	5.2	-129.03	-58.1	-71.6	92.2	81.8	10.38	8.883	
1,600.0	1,600.0	1,603.7	1,602.9	5.5	5.6	-128.15	-55.2	-70.3	89.4	78.3	11.08	8.066	
1,700.0	1,700.0	1,702.5	1,701.7	5.9	5.9	-127.42	-52.6	-68.7	86.6	74.8	11.78	7.346	
1,746.7	1,746.7	1,747.5	1,746.7	6.0	6.1	-127.56	-52.5	-68.2	86.0	73.9	12.11	7.105	
1,800.0	1,800.0	1,801.1	1,800.2	6.2	6.3	-128.34	-53.5	-67.6	86.2	73.7	12.49	6.898	
1,848.7	1,848.7	1,849.5	1,848.7	6.4	6.4	-129.03	-54.2	-66.8	86.0	73.2	12.84	6.697	CC, ES
1,900.0	1,900.0	1,898.2	1,897.2	6.6	6.6	-130.42	-56.2	-66.0	86.8	73.6	13.19	6.579	SF
2,000.0	2,000.0	1,994.9	1,993.5	6.9	7.0	-135.40	-65.5	-64.6	92.3	78.4	13.87	6.652	
2,100.0	2,100.0	2,096.1	2,094.2	7.3	7.3	-140.14	-75.7	-63.2	98.8	84.3	14.59	6.773	
2,200.0	2,200.0	2,196.1	2,193.8	7.7	7.7	-144.12	-84.6	-61.2	104.6	89.3	15.31	6.835	
2,300.0	2,300.0	2,292.3	2,289.3	8.0	8.0	-148.42	-95.5	-58.7	112.6	96.6	15.97	7.047	
2,400.0	2,400.0	2,390.3	2,386.4	8.4	8.4	-152.67	-108.5	-56.1	122.9	106.2	16.66	7.376	
2,500.0	2,500.0	2,489.1	2,484.2	8.7	8.7	-156.31	-122.2	-53.6	134.3	117.0	17.36	7.739	
2,600.0	2,600.0	2,588.1	2,582.3	9.1	9.1	-159.23	-135.8	-51.5	146.3	128.2	18.07	8.097	
2,700.0	2,700.0	2,687.4	2,680.7	9.4	9.5	-161.52	-149.2	-49.8	158.4	139.7	18.78	8.438	
2,800.0	2,800.0	2,786.4	2,778.7	9.8	9.8	-163.33	-162.3	-48.6	170.7	151.2	19.49	8.762	
2,900.0	2,900.0	2,884.7	2,876.2	10.1	10.2	-16.35	-175.6	-47.7	181.8	161.7	20.17	9.016	
3,000.0	2,999.8	2,983.5	2,974.0	10.5	10.5	-18.04	-189.4	-46.9	190.2	169.4	20.84	9.128	
3,050.0	3,049.7	3,033.2	3,023.2	10.6	10.7	-18.98	-196.4	-46.5	193.3	172.2	21.18	9.129	
3,100.0	3,099.5	3,082.9	3,072.4	10.8	10.9	-19.96	-203.5	-46.1	196.1	174.6	21.52	9.114	
3,200.0	3,199.1	3,182.5	3,171.0	11.1	11.3	-21.86	-217.7	-45.2	201.9	179.7	22.21	9.092	
3,300.0	3,298.7	3,282.3	3,269.7	11.5	11.6	-23.59	-231.9	-44.5	207.9	185.0	22.90	9.076	
3,400.0	3,398.4	3,381.8	3,368.2	11.8	12.0	-25.16	-245.9	-44.0	213.9	190.3	23.60	9.066	
3,500.0	3,498.0	3,481.0	3,466.4	12.1	12.4	-26.61	-260.1	-43.6	220.4	196.1	24.29	9.072	
3,600.0	3,597.6	3,580.9	3,565.3	12.5	12.7	-27.94	-274.5	-43.5	227.0	202.0	25.00	9.083	
3,700.0	3,697.2	3,684.6	3,668.0	12.8	13.1	-29.39	-288.5	-42.7	232.9	207.1	25.75	9.043	
3,800.0	3,796.8	3,784.7	3,767.3	13.2	13.5	-30.95	-301.0	-40.9	237.7	211.3	26.46	8.984	
3,900.0	3,896.4	3,889.2	3,871.0	13.5	13.9	-32.43	-313.3	-39.5	242.2	215.0	27.22	8.899	
4,000.0	3,996.1	3,998.0	3,979.4	13.9	14.2	-34.20	-322.3	-36.9	243.3	215.3	28.00	8.689	
4,100.0	4,095.7	4,099.4	4,080.6	14.2	14.6	-35.80	-328.7	-34.8	242.5	213.8	28.71	8.446	
4,200.0	4,195.3	4,199.8	4,180.8	14.6	15.0	-37.37	-334.7	-32.8	241.6	212.2	29.43	8.212	
4,300.0	4,294.9	4,300.4	4,281.2	15.0	15.3	-38.98	-340.4	-30.7	240.6	210.5	30.14	7.983	
4,400.0	4,394.5	4,401.5	4,382.2	15.3	15.7	-40.68	-345.6	-28.5	239.4	208.5	30.86	7.757	
4,500.0	4,494.2	4,499.7	4,480.3	15.7	16.1	-42.57	-349.9	-25.5	237.8	206.2	31.57	7.531	
4,600.0	4,593.8	4,600.2	4,580.5	16.0	16.4	-44.96	-354.7	-20.5	237.2	204.9	32.29	7.344	
4,609.2	4,602.9	4,608.1	4,588.4	16.1	16.5	-45.17	-355.1	-20.0	237.1	204.8	32.35	7.329	
4,700.0	4,693.4	4,689.9	4,669.7	16.4	16.7	-47.46	-361.0	-13.9	239.8	206.8	32.94	7.277	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 15-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,800.0	4,793.0	4,789.2	4,768.3	16.8	17.1	-50.44	-368.6	-5.1	244.1	210.4	33.67	7.249	
4,900.0	4,892.6	4,888.4	4,866.8	17.1	17.5	-53.53	-375.7	4.5	248.9	214.5	34.39	7.238	
5,000.0	4,992.3	4,985.4	4,963.1	17.5	17.8	-56.37	-383.0	13.8	254.7	219.6	35.09	7.258	
5,100.0	5,091.9	5,082.2	5,059.1	17.9	18.2	-58.65	-392.5	21.9	262.5	226.7	35.79	7.335	
5,200.0	5,191.5	5,178.3	5,154.4	18.2	18.5	-60.56	-402.4	29.2	270.9	234.4	36.48	7.426	
5,300.0	5,291.1	5,276.8	5,251.9	18.6	18.9	-61.88	-415.3	35.2	281.1	243.9	37.21	7.556	
5,400.0	5,390.7	5,381.8	5,355.9	19.0	19.3	-63.08	-428.3	40.5	290.4	252.4	38.01	7.639	
5,500.0	5,490.4	5,489.3	5,462.8	19.3	19.7	-64.27	-439.0	44.6	296.9	258.1	38.83	7.648	
5,600.0	5,590.0	5,590.6	5,563.7	19.7	20.0	-65.36	-447.8	47.6	302.1	262.6	39.58	7.634	
5,700.0	5,689.6	5,685.6	5,658.2	20.1	20.4	-66.18	-457.1	50.2	308.2	268.0	40.27	7.654	
5,800.0	5,789.2	5,786.0	5,758.0	20.4	20.8	-66.95	-467.4	52.7	314.6	273.5	41.01	7.670	
5,900.0	5,888.8	5,871.3	5,842.6	20.8	21.1	-67.42	-478.2	55.3	323.2	281.7	41.59	7.773	
6,000.0	5,988.5	5,977.2	5,947.3	21.2	21.5	-67.71	-493.7	58.2	333.4	291.0	42.40	7.862	
6,100.0	6,088.1	6,084.9	6,054.2	21.6	21.9	-68.01	-507.5	59.7	341.3	298.1	43.23	7.895	
6,200.0	6,187.7	6,191.2	6,159.9	21.9	22.3	-68.44	-518.7	60.6	347.0	303.0	44.02	7.884	
6,300.0	6,287.3	6,276.3	6,244.3	22.3	22.6	-68.83	-528.3	62.2	354.0	309.4	44.62	7.934	
6,400.0	6,386.9	6,389.5	6,356.7	22.7	23.0	-69.28	-541.2	64.2	361.0	315.5	45.48	7.936	
6,500.0	6,486.6	6,482.8	6,449.6	23.1	23.3	-69.65	-550.8	65.0	366.6	320.4	46.17	7.939	
6,600.0	6,586.2	6,561.5	6,527.4	23.4	23.6	-69.87	-562.0	67.5	376.6	330.0	46.66	8.071	
6,700.0	6,685.8	6,687.2	6,652.0	23.8	24.1	-70.37	-577.9	71.2	385.3	337.6	47.70	8.078	
6,727.2	6,712.9	6,714.4	6,679.1	23.9	24.2	-70.49	-580.6	71.7	386.9	339.0	47.90	8.077	
6,800.0	6,785.5	6,777.6	6,741.9	24.2	24.4	-70.70	-587.5	72.5	391.9	343.6	48.35	8.106	
6,900.0	6,885.4	6,853.9	6,817.0	24.5	24.7	-70.36	-600.6	73.9	404.8	356.1	48.78	8.300	
6,977.2	6,962.5	6,939.8	6,901.4	24.8	25.0	142.00	-616.9	75.2	416.7	367.3	49.46	8.427	
7,000.0	6,985.4	6,966.4	6,927.5	24.9	25.1	142.38	-621.5	75.3	420.0	370.3	49.66	8.457	
7,100.0	7,085.4	7,079.7	7,039.6	25.2	25.5	143.82	-638.6	74.9	431.9	381.4	50.50	8.552	
7,200.0	7,185.4	7,184.6	7,143.6	25.6	25.9	144.96	-652.2	74.0	441.9	390.7	51.24	8.625	
7,300.0	7,285.4	7,286.7	7,245.0	25.9	26.3	145.93	-664.1	73.0	451.0	399.1	51.95	8.682	
7,400.0	7,385.4	7,374.9	7,332.5	26.2	26.6	146.55	-674.3	74.0	461.2	408.7	52.55	8.777	
7,500.0	7,485.4	7,483.0	7,440.0	26.6	27.0	147.03	-685.7	76.8	471.4	418.1	53.33	8.840	
7,600.0	7,585.4	7,566.0	7,522.4	26.9	27.3	147.34	-694.6	79.5	482.3	428.4	53.88	8.952	
7,700.0	7,685.4	7,650.3	7,605.9	27.3	27.6	147.62	-705.8	83.8	496.4	441.9	54.41	9.122	
7,800.0	7,785.4	7,767.0	7,721.1	27.6	28.1	147.95	-722.5	90.9	511.9	456.6	55.32	9.255	
7,900.0	7,885.4	7,871.4	7,824.9	27.9	28.5	148.00	-732.9	96.9	523.4	467.3	56.07	9.334	
8,000.0	7,985.4	7,946.7	7,899.5	28.3	28.7	147.98	-741.3	102.4	536.9	480.4	56.52	9.499	
8,100.0	8,085.4	8,057.9	8,009.4	28.6	29.2	147.97	-756.1	111.7	552.6	495.3	57.37	9.633	
8,200.0	8,185.4	8,171.1	8,121.6	29.0	29.6	148.22	-769.2	117.0	564.9	506.7	58.21	9.706	
8,300.0	8,285.4	8,271.0	8,220.9	29.3	29.9	148.60	-780.1	119.3	575.4	516.5	58.91	9.767	
8,400.0	8,385.4	8,353.6	8,302.7	29.6	30.2	148.89	-791.1	122.6	588.8	529.3	59.47	9.901	
8,500.0	8,485.4	8,463.3	8,411.5	30.0	30.7	149.15	-804.8	127.7	601.9	541.6	60.28	9.985	
8,600.0	8,585.4	8,549.0	8,496.4	30.3	31.0	149.46	-815.5	130.2	614.3	553.4	60.85	10.094	
8,700.0	8,685.4	8,606.9	8,552.8	30.7	31.2	150.23	-828.4	128.2	632.0	571.0	61.03	10.356	
8,731.1	8,716.5	8,625.9	8,570.8	30.8	31.3	150.61	-834.0	126.6	638.9	577.8	61.06	10.462	
8,750.0	8,735.4	8,638.1	8,582.3	30.8	31.3	60.18	-837.9	125.3	643.1	582.0	61.08	10.528	
8,775.0	8,760.3	8,654.5	8,597.6	30.9	31.4	60.11	-843.4	123.2	648.4	587.3	61.11	10.611	
8,800.0	8,785.1	8,670.4	8,612.3	31.0	31.4	60.15	-849.2	120.8	653.4	592.3	61.11	10.693	
8,825.0	8,809.8	8,683.9	8,624.5	31.1	31.5	60.20	-854.3	118.5	658.3	597.2	61.05	10.782	
8,850.0	8,834.1	8,697.3	8,636.6	31.2	31.5	60.32	-859.6	116.0	663.0	602.0	60.98	10.872	
8,875.0	8,858.2	8,706.9	8,645.1	31.2	31.6	60.32	-863.6	114.2	667.6	606.7	60.82	10.976	
8,900.0	8,881.9	9,193.3	9,002.2	31.3	32.7	95.03	-945.5	-169.1	664.7	602.6	62.05	10.712	
8,925.0	8,905.1	9,196.1	9,003.5	31.4	32.7	95.69	-945.2	-171.6	661.2	598.7	62.49	10.581	
8,950.0	8,927.8	9,196.1	9,003.5	31.4	32.7	95.99	-945.2	-171.6	658.7	595.8	62.88	10.475	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 15-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,975.0	8,949.9	9,196.1	9,003.5	31.5	32.7	96.15	-945.2	-171.6	657.4	594.1	63.22	10.397	
8,994.3	8,966.5	9,194.2	9,002.6	31.5	32.7	96.03	-945.4	-169.9	657.0	593.6	63.45	10.355	
9,000.0	8,971.4	9,193.9	9,002.5	31.6	32.7	95.99	-945.5	-169.5	657.1	593.5	63.51	10.345	
9,025.0	8,992.2	9,191.7	9,001.5	31.6	32.7	95.71	-945.7	-167.6	657.8	594.1	63.74	10.321	
9,050.0	9,012.2	9,188.9	9,000.2	31.7	32.7	95.24	-946.0	-165.1	659.7	595.8	63.91	10.322	
9,075.0	9,031.4	9,185.4	8,998.6	31.7	32.6	94.60	-946.4	-162.1	662.6	598.5	64.03	10.348	
9,100.0	9,049.8	9,182.7	8,997.4	31.8	32.6	93.90	-946.7	-159.7	666.5	602.4	64.11	10.396	
9,125.0	9,067.2	9,176.8	8,994.5	31.8	32.6	92.82	-947.4	-154.5	671.3	607.1	64.14	10.466	
9,150.0	9,083.7	9,169.3	8,990.9	31.8	32.6	91.50	-948.3	-148.1	677.0	612.9	64.13	10.557	
9,175.0	9,099.1	9,165.9	8,989.2	31.9	32.6	90.41	-948.7	-145.1	683.6	619.5	64.11	10.662	
9,200.0	9,113.6	9,159.3	8,985.8	31.9	32.6	88.97	-949.6	-139.5	690.9	626.8	64.06	10.785	
9,225.0	9,126.9	9,151.4	8,981.7	32.0	32.6	87.35	-950.5	-132.9	698.9	634.9	63.99	10.923	
9,250.0	9,139.1	9,142.2	8,976.7	32.1	32.6	85.55	-951.6	-125.2	707.5	643.6	63.90	11.073	
9,275.0	9,150.2	9,128.0	8,968.7	32.1	32.6	83.34	-953.2	-113.6	716.6	652.9	63.76	11.240	
9,300.0	9,160.0	9,109.8	8,958.0	32.3	32.6	80.83	-954.9	-99.0	726.0	662.5	63.57	11.421	
9,325.0	9,168.7	9,089.2	8,945.0	32.4	32.5	78.14	-956.2	-82.9	735.7	672.3	63.33	11.616	
9,350.0	9,176.1	9,077.8	8,937.6	32.5	32.5	76.11	-956.6	-74.4	745.5	682.3	63.21	11.793	
9,375.0	9,182.2	9,068.5	8,931.4	32.6	32.5	74.22	-957.0	-67.5	755.5	692.4	63.13	11.967	
9,400.0	9,187.1	9,058.6	8,924.6	32.8	32.5	72.29	-957.2	-60.3	765.8	702.7	63.06	12.143	
9,425.0	9,190.7	9,041.6	8,912.6	32.9	32.5	69.97	-957.6	-48.2	776.1	713.2	62.91	12.337	
9,450.0	9,193.0	8,933.5	8,831.6	33.0	32.3	62.21	-947.4	22.1	785.9	725.0	60.91	12.903	
9,475.0	9,193.9	8,898.9	8,804.4	33.2	32.2	59.13	-939.3	42.0	794.1	733.8	60.23	13.183	
9,481.1	9,194.0	8,894.6	8,801.0	33.2	32.2	58.65	-938.1	44.3	796.0	735.8	60.17	13.229	
9,500.0	9,194.0	8,878.4	8,788.0	33.4	32.1	57.63	-933.5	52.9	802.1	742.2	59.90	13.390	
9,600.0	9,194.0	8,800.2	8,724.3	34.1	31.9	52.48	-905.0	87.9	837.6	779.0	58.61	14.291	
9,700.0	9,194.0	8,778.1	8,706.1	35.0	31.8	50.98	-895.4	95.7	881.0	821.9	59.12	14.902	
9,800.0	9,194.0	8,764.6	8,694.7	36.0	31.8	50.04	-889.3	100.0	932.4	872.5	59.92	15.561	
9,900.0	9,194.0	8,751.0	8,683.3	37.2	31.7	49.11	-883.2	103.9	990.9	930.2	60.69	16.328	
10,000.0	9,194.0	8,742.1	8,675.7	38.5	31.7	48.50	-879.2	106.2	1,055.4	993.9	61.51	17.158	
10,100.0	9,194.0	8,737.6	8,671.8	39.9	31.7	48.18	-877.1	107.4	1,124.9	1,062.6	62.33	18.047	
10,200.0	9,194.0	8,724.1	8,660.2	41.4	31.6	47.26	-871.1	110.5	1,198.6	1,135.7	62.84	19.072	
10,300.0	9,194.0	8,724.1	8,660.2	42.9	31.6	47.26	-871.1	110.5	1,275.7	1,212.2	63.55	20.073	
10,400.0	9,194.0	8,710.7	8,648.4	44.6	31.6	46.35	-865.3	113.4	1,355.7	1,291.8	63.91	21.215	
10,500.0	9,194.0	8,710.7	8,648.4	46.3	31.6	46.35	-865.3	113.4	1,438.2	1,373.7	64.44	22.319	
10,600.0	9,194.0	8,702.4	8,641.1	48.0	31.5	45.79	-861.7	115.1	1,522.6	1,457.9	64.75	23.514	
10,700.0	9,194.0	8,697.3	8,636.6	49.9	31.5	45.45	-859.6	116.0	1,608.8	1,543.7	65.07	24.724	
10,800.0	9,194.0	8,697.3	8,636.6	51.7	31.5	45.45	-859.6	116.0	1,696.5	1,631.1	65.42	25.933	
10,900.0	9,194.0	8,683.9	8,624.5	53.7	31.5	44.56	-854.3	118.5	1,785.4	1,719.9	65.53	27.244	
11,000.0	9,194.0	8,683.9	8,624.5	55.6	31.5	44.56	-854.3	118.5	1,875.3	1,809.5	65.81	28.498	
11,100.0	9,194.0	8,683.9	8,624.5	57.6	31.5	44.56	-854.3	118.5	1,966.3	1,900.2	66.04	29.772	
11,200.0	9,194.0	8,670.4	8,612.3	59.6	31.4	43.69	-849.2	120.8	2,058.0	1,991.9	66.09	31.137	
11,300.0	9,194.0	8,670.4	8,612.3	61.7	31.4	43.69	-849.2	120.8	2,150.4	2,084.1	66.29	32.440	
11,400.0	9,194.0	8,670.4	8,612.3	63.8	31.4	43.69	-849.2	120.8	2,243.4	2,177.0	66.46	33.755	
11,500.0	9,194.0	8,664.9	8,607.2	65.9	31.4	43.34	-847.1	121.7	2,337.0	2,270.5	66.56	35.112	
11,600.0	9,194.0	8,657.0	8,599.9	68.0	31.4	42.84	-844.3	122.9	2,431.1	2,364.5	66.62	36.492	
11,700.0	9,194.0	8,657.0	8,599.9	70.1	31.4	42.84	-844.3	122.9	2,525.6	2,458.9	66.75	37.835	
11,800.0	9,194.0	8,657.0	8,599.9	72.3	31.4	42.84	-844.3	122.9	2,620.6	2,553.7	66.88	39.185	
11,900.0	9,194.0	8,657.0	8,599.9	74.5	31.4	42.84	-844.3	122.9	2,715.8	2,648.8	66.99	40.542	
12,000.0	9,194.0	8,657.0	8,599.9	76.7	31.4	42.84	-844.3	122.9	2,811.4	2,744.3	67.09	41.904	
12,100.0	9,194.0	8,649.7	8,593.1	78.9	31.4	42.38	-841.8	123.9	2,907.3	2,840.2	67.12	43.312	
12,200.0	9,194.0	8,643.6	8,587.5	81.1	31.3	42.01	-839.7	124.7	3,003.4	2,936.3	67.16	44.718	
12,300.0	9,194.0	8,643.6	8,587.5	83.3	31.3	42.01	-839.7	124.7	3,099.8	3,032.5	67.25	46.092	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 15-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,400.0	9,194.0	8,643.6	8,587.5	85.6	31.3	42.01	-839.7	124.7	3,196.4	3,129.0	67.34	47.469	
12,500.0	9,194.0	8,643.6	8,587.5	87.8	31.3	42.01	-839.7	124.7	3,293.2	3,225.7	67.42	48.848	
12,600.0	9,194.0	8,643.6	8,587.5	90.1	31.3	42.01	-839.7	124.7	3,390.1	3,322.6	67.49	50.230	
12,700.0	9,194.0	8,643.6	8,587.5	92.3	31.3	42.01	-839.7	124.7	3,487.3	3,419.7	67.57	51.613	
12,800.0	9,194.0	8,637.5	8,581.7	94.6	31.3	41.63	-837.7	125.4	3,584.5	3,516.9	67.59	53.035	
12,900.0	9,194.0	8,636.0	8,580.4	96.9	31.3	41.54	-837.2	125.6	3,681.9	3,614.3	67.65	54.430	
13,000.0	9,194.0	8,630.1	8,574.8	99.2	31.3	41.19	-835.3	126.2	3,779.5	3,711.9	67.67	55.853	
13,100.0	9,194.0	8,630.1	8,574.8	101.5	31.3	41.19	-835.3	126.2	3,877.2	3,809.4	67.73	57.240	
13,200.0	9,194.0	8,630.1	8,574.8	103.8	31.3	41.19	-835.3	126.2	3,975.0	3,907.2	67.80	58.628	
13,300.0	9,194.0	8,630.1	8,574.8	106.1	31.3	41.19	-835.3	126.2	4,072.8	4,005.0	67.86	60.017	
13,400.0	9,194.0	8,630.1	8,574.8	108.4	31.3	41.19	-835.3	126.2	4,170.8	4,102.9	67.92	61.405	
13,500.0	9,194.0	8,630.1	8,574.8	110.7	31.3	41.19	-835.3	126.2	4,268.9	4,200.9	67.98	62.792	
13,600.0	9,194.0	8,630.1	8,574.8	113.0	31.3	41.19	-835.3	126.2	4,367.1	4,299.0	68.04	64.180	
13,700.0	9,194.0	8,630.1	8,574.8	115.3	31.3	41.19	-835.3	126.2	4,465.3	4,397.2	68.10	65.566	
13,800.0	9,194.0	8,630.1	8,574.8	117.7	31.3	41.19	-835.3	126.2	4,563.7	4,495.5	68.16	66.952	
13,900.0	9,194.0	8,623.5	8,568.6	120.0	31.3	40.80	-833.3	126.9	4,662.0	4,593.8	68.18	68.381	
14,000.0	9,194.0	8,616.7	8,562.1	122.3	31.2	40.40	-831.2	127.5	4,760.5	4,692.3	68.19	69.810	
14,100.0	9,194.0	8,616.7	8,562.1	124.7	31.2	40.40	-831.2	127.5	4,859.0	4,790.7	68.25	71.194	
14,200.0	9,194.0	8,616.7	8,562.1	127.0	31.2	40.40	-831.2	127.5	4,957.6	4,889.2	68.31	72.576	
14,300.0	9,194.0	8,616.7	8,562.1	129.4	31.2	40.40	-831.2	127.5	5,056.2	4,987.8	68.37	73.956	
14,400.0	9,194.0	8,616.7	8,562.1	131.7	31.2	40.40	-831.2	127.5	5,154.8	5,086.4	68.43	75.335	
14,500.0	9,194.0	8,616.7	8,562.1	134.1	31.2	40.40	-831.2	127.5	5,253.6	5,185.1	68.48	76.712	
14,600.0	9,194.0	8,616.7	8,562.1	136.4	31.2	40.40	-831.2	127.5	5,352.3	5,283.8	68.54	78.088	
14,700.0	9,194.0	8,616.7	8,562.1	138.8	31.2	40.40	-831.2	127.5	5,451.1	5,382.5	68.60	79.461	
14,800.0	9,194.0	8,616.7	8,562.1	141.1	31.2	40.40	-831.2	127.5	5,550.0	5,481.3	68.66	80.833	
14,900.0	9,194.0	8,616.7	8,562.1	143.5	31.2	40.40	-831.2	127.5	5,648.9	5,580.2	68.72	82.203	
15,000.0	9,194.0	8,616.7	8,562.1	145.8	31.2	40.40	-831.2	127.5	5,747.8	5,679.1	68.78	83.570	
15,100.0	9,194.0	8,616.7	8,562.1	148.2	31.2	40.40	-831.2	127.5	5,846.8	5,778.0	68.84	84.936	
15,200.0	9,194.0	8,616.7	8,562.1	150.6	31.2	40.40	-831.2	127.5	5,945.8	5,876.9	68.90	86.299	
15,300.0	9,194.0	8,610.7	8,556.4	152.9	31.2	40.05	-829.5	128.0	6,044.8	5,975.9	68.92	87.705	
15,400.0	9,194.0	8,609.9	8,555.6	155.3	31.2	40.01	-829.2	128.0	6,143.9	6,074.9	68.98	89.069	
15,500.0	9,194.0	8,603.3	8,549.3	157.7	31.2	39.63	-827.4	128.5	6,243.0	6,174.0	69.00	90.475	
15,600.0	9,194.0	8,603.3	8,549.3	160.0	31.2	39.63	-827.4	128.5	6,342.1	6,273.0	69.06	91.829	
15,700.0	9,194.0	8,603.3	8,549.3	162.4	31.2	39.63	-827.4	128.5	6,441.2	6,372.1	69.13	93.181	
15,800.0	9,194.0	8,603.3	8,549.3	164.8	31.2	39.63	-827.4	128.5	6,540.4	6,471.2	69.19	94.530	
15,900.0	9,194.0	8,603.3	8,549.3	167.2	31.2	39.63	-827.4	128.5	6,639.6	6,570.3	69.25	95.876	
16,000.0	9,194.0	8,603.3	8,549.3	169.5	31.2	39.63	-827.4	128.5	6,738.8	6,669.5	69.32	97.219	
16,100.0	9,194.0	8,603.3	8,549.3	171.9	31.2	39.63	-827.4	128.5	6,838.1	6,768.7	69.38	98.560	
16,200.0	9,194.0	8,603.3	8,549.3	174.3	31.2	39.63	-827.4	128.5	6,937.3	6,867.9	69.44	99.898	
16,300.0	9,194.0	8,603.3	8,549.3	176.7	31.2	39.63	-827.4	128.5	7,036.6	6,967.1	69.51	101.233	
16,400.0	9,194.0	8,603.3	8,549.3	179.1	31.2	39.63	-827.4	128.5	7,135.9	7,066.3	69.57	102.564	
16,500.0	9,194.0	8,603.3	8,549.3	181.4	31.2	39.63	-827.4	128.5	7,235.2	7,165.6	69.64	103.893	
16,600.0	9,194.0	8,603.3	8,549.3	183.8	31.2	39.63	-827.4	128.5	7,334.5	7,264.8	69.71	105.219	
16,700.0	9,194.0	8,603.3	8,549.3	186.2	31.2	39.63	-827.4	128.5	7,433.9	7,364.1	69.77	106.542	
16,800.0	9,194.0	8,603.3	8,549.3	188.6	31.2	39.63	-827.4	128.5	7,533.3	7,463.4	69.84	107.861	
16,900.0	9,194.0	8,603.3	8,549.3	191.0	31.2	39.63	-827.4	128.5	7,632.7	7,562.8	69.91	109.177	
17,000.0	9,194.0	8,603.3	8,549.3	193.4	31.2	39.63	-827.4	128.5	7,732.1	7,662.1	69.98	110.491	
17,100.0	9,194.0	8,603.3	8,549.3	195.8	31.2	39.63	-827.4	128.5	7,831.5	7,761.4	70.05	111.800	
17,200.0	9,194.0	8,603.3	8,549.3	198.1	31.2	39.63	-827.4	128.5	7,930.9	7,860.8	70.12	113.107	
17,300.0	9,194.0	8,603.3	8,549.3	200.5	31.2	39.63	-827.4	128.5	8,030.4	7,960.2	70.19	114.410	
17,400.0	9,194.0	8,603.3	8,549.3	202.9	31.2	39.63	-827.4	128.5	8,129.8	8,059.6	70.26	115.710	
17,500.0	9,194.0	8,603.3	8,549.3	205.3	31.2	39.63	-827.4	128.5	8,229.3	8,159.0	70.33	117.006	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Black Diamond 34 Fed Com 132H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 15-MWD+IFR1+MS — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,600.0	9,194.0	8,603.3	8,549.3	207.7	31.2	39.63	-827.4	128.5	8,328.8	8,258.4	70.40	118.299	
17,700.0	9,194.0	8,596.9	8,543.2	210.1	31.2	39.28	-825.7	128.9	8,428.3	8,357.8	70.44	119.644	
17,800.0	9,194.0	8,596.5	8,542.8	212.5	31.2	39.25	-825.6	128.9	8,527.8	8,457.3	70.52	120.934	
17,900.0	9,194.0	8,596.1	8,542.4	214.9	31.2	39.23	-825.5	129.0	8,627.3	8,556.7	70.59	122.220	
18,000.0	9,194.0	8,589.9	8,536.4	217.3	31.1	38.89	-823.9	129.3	8,726.8	8,656.2	70.63	123.555	
18,100.0	9,194.0	8,589.9	8,536.4	219.7	31.1	38.89	-823.9	129.3	8,826.4	8,755.7	70.71	124.831	
18,200.0	9,194.0	8,589.9	8,536.4	222.1	31.1	38.89	-823.9	129.3	8,925.9	8,855.1	70.78	126.103	
18,300.0	9,194.0	8,589.9	8,536.4	224.5	31.1	38.89	-823.9	129.3	9,025.5	8,954.6	70.86	127.372	
18,400.0	9,194.0	8,589.9	8,536.4	226.9	31.1	38.89	-823.9	129.3	9,125.0	9,054.1	70.94	128.637	
18,500.0	9,194.0	8,589.9	8,536.4	229.3	31.1	38.89	-823.9	129.3	9,224.6	9,153.6	71.01	129.898	
18,600.0	9,194.0	8,589.9	8,536.4	231.7	31.1	38.89	-823.9	129.3	9,324.2	9,253.1	71.09	131.156	
18,700.0	9,194.0	8,589.9	8,536.4	234.1	31.1	38.89	-823.9	129.3	9,423.8	9,352.6	71.17	132.410	
18,800.0	9,194.0	8,589.9	8,536.4	236.5	31.1	38.89	-823.9	129.3	9,523.4	9,452.2	71.25	133.660	
18,900.0	9,194.0	8,589.9	8,536.4	238.9	31.1	38.89	-823.9	129.3	9,623.0	9,551.7	71.33	134.906	
19,000.0	9,194.0	8,589.9	8,536.4	241.3	31.1	38.89	-823.9	129.3	9,722.6	9,651.2	71.41	136.149	
19,100.0	9,194.0	8,589.9	8,536.4	243.7	31.1	38.89	-823.9	129.3	9,822.3	9,750.8	71.49	137.388	
19,200.0	9,194.0	8,589.9	8,536.4	246.1	31.1	38.89	-823.9	129.3	9,921.9	9,850.3	71.57	138.623	
19,300.0	9,194.0	8,589.9	8,536.4	248.5	31.1	38.89	-823.9	129.3	10,021.5	9,949.9	71.66	139.854	
19,400.0	9,194.0	8,589.9	8,536.4	250.9	31.1	38.89	-823.9	129.3	10,121.2	10,049.4	71.74	141.081	
19,500.0	9,194.0	8,589.9	8,536.4	253.3	31.1	38.89	-823.9	129.3	10,220.8	10,149.0	71.82	142.304	
19,600.0	9,194.0	8,589.9	8,536.4	255.7	31.1	38.89	-823.9	129.3	10,320.5	10,248.6	71.91	143.524	
19,700.0	9,194.0	8,589.9	8,536.4	258.1	31.1	38.89	-823.9	129.3	10,420.2	10,348.2	71.99	144.739	
19,800.0	9,194.0	8,589.9	8,536.4	260.5	31.1	38.89	-823.9	129.3	10,519.8	10,447.8	72.08	145.951	
19,847.1	9,194.0	8,589.9	8,536.4	261.6	31.1	38.89	-823.9	129.3	10,566.8	10,494.7	72.12	146.520	

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.12	66.0	0.1	66.0				
100.0	100.0	100.0	100.0	0.1	0.1	0.12	66.0	0.1	66.0	65.7	0.25	263.022	
200.0	200.0	200.0	200.0	0.5	0.5	0.12	66.0	0.1	66.0	65.0	0.97	68.191	
300.0	300.0	300.0	300.0	0.8	0.8	0.12	66.0	0.1	66.0	64.3	1.68	39.173	
400.0	400.0	400.0	400.0	1.2	1.2	0.12	66.0	0.1	66.0	63.6	2.40	27.480	
500.0	500.0	500.0	500.0	1.6	1.6	0.12	66.0	0.1	66.0	62.9	3.12	21.163	
600.0	600.0	600.0	600.0	1.9	1.9	0.12	66.0	0.1	66.0	62.2	3.84	17.207	
700.0	700.0	700.0	700.0	2.3	2.3	0.12	66.0	0.1	66.0	61.4	4.55	14.497	
800.0	800.0	800.0	800.0	2.6	2.6	0.12	66.0	0.1	66.0	60.7	5.27	12.525	
900.0	900.0	900.0	900.0	3.0	3.0	0.12	66.0	0.1	66.0	60.0	5.99	11.025	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	0.12	66.0	0.1	66.0	59.3	6.70	9.846	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	0.12	66.0	0.1	66.0	58.6	7.42	8.894	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	0.12	66.0	0.1	66.0	57.9	8.14	8.111	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	0.12	66.0	0.1	66.0	57.1	8.85	7.454	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	0.12	66.0	0.1	66.0	56.4	9.57	6.896	
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	0.12	66.0	0.1	66.0	55.7	10.29	6.415	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	0.12	66.0	0.1	66.0	55.0	11.01	5.997	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	0.12	66.0	0.1	66.0	54.3	11.72	5.630	CC, ES
1,800.0	1,800.0	1,797.7	1,797.7	6.2	6.2	0.02	67.7	0.0	67.7	55.3	12.43	5.449	
1,900.0	1,900.0	1,895.2	1,895.1	6.6	6.6	-0.27	72.6	-0.3	72.8	59.7	13.11	5.551	
2,000.0	2,000.0	1,992.2	1,991.7	6.9	6.9	-0.67	80.9	-0.9	81.3	67.5	13.79	5.895	
2,100.0	2,100.0	2,088.6	2,087.4	7.3	7.3	-1.10	92.2	-1.8	93.1	78.7	14.44	6.447	
2,200.0	2,200.0	2,184.1	2,181.8	7.7	7.6	-1.51	106.7	-2.8	108.3	93.2	15.08	7.180	
2,300.0	2,300.0	2,278.5	2,274.6	8.0	8.0	-1.89	124.1	-4.1	126.7	111.0	15.70	8.071	
2,400.0	2,400.0	2,375.4	2,369.4	8.4	8.3	-2.20	144.1	-5.5	147.4	131.0	16.38	8.999	
2,500.0	2,500.0	2,473.2	2,465.0	8.7	8.7	-2.44	164.4	-7.0	168.2	151.1	17.08	9.844	
2,600.0	2,600.0	2,571.0	2,560.7	9.1	9.1	-2.63	184.6	-8.5	189.0	171.2	17.79	10.620	
2,700.0	2,700.0	2,668.8	2,656.4	9.4	9.5	-2.79	204.9	-10.0	209.7	191.2	18.50	11.336	
2,800.0	2,800.0	2,766.7	2,752.1	9.8	9.9	-2.91	225.2	-11.4	230.5	211.3	19.21	11.998	
2,900.0	2,900.0	2,864.2	2,847.5	10.1	10.3	145.51	245.4	-12.9	252.7	232.8	19.91	12.693	
3,000.0	2,999.8	2,960.9	2,942.1	10.5	10.8	145.74	265.5	-14.4	277.7	257.1	20.59	13.488	
3,050.0	3,049.7	3,009.0	2,989.2	10.6	11.0	145.96	275.5	-15.1	291.3	270.3	20.93	13.916	
3,100.0	3,099.5	3,057.0	3,036.1	10.8	11.2	146.35	285.4	-15.8	305.2	283.9	21.27	14.348	
3,200.0	3,199.1	3,153.0	3,130.0	11.1	11.6	147.03	305.3	-17.3	333.1	311.1	21.95	15.174	
3,300.0	3,298.7	3,249.0	3,223.8	11.5	12.0	147.61	325.2	-18.7	361.0	338.3	22.63	15.949	
3,400.0	3,398.4	3,344.9	3,317.7	11.8	12.4	148.11	345.1	-20.2	388.9	365.6	23.32	16.678	
3,500.0	3,498.0	3,440.9	3,411.6	12.1	12.9	148.54	365.0	-21.6	416.8	392.8	24.01	17.365	
3,600.0	3,597.6	3,536.9	3,505.5	12.5	13.3	148.91	384.9	-23.1	444.8	420.1	24.70	18.012	
3,700.0	3,697.2	3,632.8	3,599.3	12.8	13.7	149.24	404.8	-24.5	472.8	447.4	25.39	18.623	
3,800.0	3,796.8	3,728.8	3,693.2	13.2	14.1	149.53	424.7	-26.0	500.8	474.7	26.08	19.201	
3,900.0	3,896.4	3,824.8	3,787.1	13.5	14.6	149.80	444.6	-27.4	528.8	502.0	26.78	19.747	
4,000.0	3,996.1	3,920.7	3,881.0	13.9	15.0	150.03	464.5	-28.9	556.9	529.4	27.48	20.265	
4,100.0	4,095.7	4,016.7	3,974.8	14.2	15.5	150.25	484.4	-30.3	584.9	556.7	28.18	20.756	
4,200.0	4,195.3	4,112.7	4,068.7	14.6	15.9	150.44	504.3	-31.8	612.9	584.0	28.88	21.222	
4,300.0	4,294.9	4,208.7	4,162.6	15.0	16.3	150.62	524.2	-33.2	641.0	611.4	29.58	21.665	
4,400.0	4,394.5	4,304.6	4,256.4	15.3	16.8	150.78	544.1	-34.7	669.0	638.7	30.29	22.087	
4,500.0	4,494.2	4,400.6	4,350.3	15.7	17.2	150.93	564.0	-36.1	697.1	666.1	31.00	22.489	
4,600.0	4,593.8	4,496.6	4,444.2	16.0	17.7	151.07	583.9	-37.5	725.1	693.4	31.70	22.873	
4,700.0	4,693.4	4,592.5	4,538.1	16.4	18.1	151.19	603.8	-39.0	753.2	720.8	32.41	23.238	
4,800.0	4,793.0	4,688.5	4,631.9	16.8	18.5	151.31	623.7	-40.4	781.2	748.1	33.12	23.588	
4,900.0	4,892.6	4,784.5	4,725.8	17.1	19.0	151.42	643.6	-41.9	809.3	775.5	33.83	23.922	
5,000.0	4,992.3	4,880.4	4,819.7	17.5	19.4	151.53	663.5	-43.3	837.4	802.8	34.54	24.242	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,091.9	4,976.4	4,913.5	17.9	19.9	151.62	683.4	-44.8	865.5	830.2	35.25	24.549	
5,200.0	5,191.5	5,072.4	5,007.4	18.2	20.3	151.71	703.3	-46.2	893.5	857.6	35.97	24.842	
5,300.0	5,291.1	5,168.4	5,101.3	18.6	20.8	151.80	723.2	-47.7	921.6	884.9	36.68	25.124	
5,400.0	5,390.7	5,264.3	5,195.2	19.0	21.2	151.88	743.1	-49.1	949.7	912.3	37.40	25.395	
5,500.0	5,490.4	5,360.3	5,289.0	19.3	21.7	151.95	763.0	-50.6	977.8	939.6	38.11	25.655	
5,600.0	5,590.0	5,456.3	5,382.9	19.7	22.1	152.02	782.9	-52.0	1,005.8	967.0	38.83	25.905	
5,700.0	5,689.6	5,552.2	5,476.8	20.1	22.6	152.09	802.8	-53.5	1,033.9	994.4	39.54	26.145	
5,800.0	5,789.2	5,648.2	5,570.7	20.4	23.0	152.15	822.7	-54.9	1,062.0	1,021.7	40.26	26.377	
5,900.0	5,888.8	5,744.2	5,664.5	20.8	23.5	152.21	842.6	-56.4	1,090.1	1,049.1	40.98	26.600	
6,000.0	5,988.5	5,840.1	5,758.4	21.2	23.9	152.27	862.5	-57.8	1,118.2	1,076.5	41.70	26.815	
6,100.0	6,088.1	5,936.1	5,852.3	21.6	24.4	152.32	882.4	-59.3	1,146.3	1,103.8	42.42	27.023	
6,200.0	6,187.7	6,032.1	5,946.1	21.9	24.8	152.37	902.3	-60.7	1,174.3	1,131.2	43.14	27.223	
6,300.0	6,287.3	6,128.0	6,040.0	22.3	25.3	152.42	922.2	-62.2	1,202.4	1,158.6	43.86	27.416	
6,400.0	6,386.9	6,224.0	6,133.9	22.7	25.7	152.47	942.1	-63.6	1,230.5	1,185.9	44.58	27.603	
6,500.0	6,486.6	6,320.0	6,227.8	23.1	26.2	152.52	962.0	-65.1	1,258.6	1,213.3	45.30	27.784	
6,600.0	6,586.2	6,478.9	6,383.9	23.4	26.9	152.61	991.6	-67.2	1,284.8	1,238.3	46.49	27.632	
6,700.0	6,685.8	6,655.9	6,559.4	23.8	27.6	152.78	1,014.3	-68.9	1,305.1	1,257.5	47.68	27.376	
6,727.2	6,712.9	6,704.7	6,608.0	23.9	27.8	152.83	1,018.6	-69.2	1,309.6	1,261.7	47.97	27.300	
6,800.0	6,785.5	6,836.9	6,740.0	24.2	28.3	153.06	1,026.3	-69.7	1,318.6	1,269.9	48.70	27.075	
6,900.0	6,885.4	6,982.4	6,885.4	24.5	28.7	153.23	1,028.0	-69.9	1,323.5	1,274.0	49.51	26.733	
6,977.2	6,962.5	7,059.5	6,962.5	24.8	29.0	4.71	1,028.0	-69.9	1,324.5	1,274.4	50.04	26.468	
7,000.0	6,985.4	7,082.3	6,985.4	24.9	29.0	4.71	1,028.0	-69.9	1,324.5	1,274.3	50.20	26.386	
7,100.0	7,085.4	7,182.3	7,085.4	25.2	29.3	4.71	1,028.0	-69.9	1,324.5	1,273.6	50.88	26.031	
7,200.0	7,185.4	7,282.3	7,185.4	25.6	29.6	4.71	1,028.0	-69.9	1,324.5	1,272.9	51.57	25.685	
7,300.0	7,285.4	7,382.3	7,285.4	25.9	29.9	4.71	1,028.0	-69.9	1,324.5	1,272.2	52.25	25.348	
7,400.0	7,385.4	7,482.3	7,385.4	26.2	30.3	4.71	1,028.0	-69.9	1,324.5	1,271.5	52.94	25.019	
7,500.0	7,485.4	7,582.3	7,485.4	26.6	30.6	4.71	1,028.0	-69.9	1,324.5	1,270.8	53.63	24.698	
7,600.0	7,585.4	7,682.3	7,585.4	26.9	30.9	4.71	1,028.0	-69.9	1,324.5	1,270.2	54.31	24.385	
7,700.0	7,685.4	7,782.3	7,685.4	27.3	31.2	4.71	1,028.0	-69.9	1,324.5	1,269.5	55.00	24.080	
7,800.0	7,785.4	7,882.3	7,785.4	27.6	31.5	4.71	1,028.0	-69.9	1,324.5	1,268.8	55.69	23.782	
7,900.0	7,885.4	7,982.3	7,885.4	27.9	31.8	4.71	1,028.0	-69.9	1,324.5	1,268.1	56.38	23.490	
8,000.0	7,985.4	8,082.3	7,985.4	28.3	32.1	4.71	1,028.0	-69.9	1,324.5	1,267.4	57.07	23.206	
8,100.0	8,085.4	8,182.3	8,085.4	28.6	32.4	4.71	1,028.0	-69.9	1,324.5	1,266.7	57.77	22.928	
8,200.0	8,185.4	8,282.3	8,185.4	29.0	32.7	4.71	1,028.0	-69.9	1,324.5	1,266.0	58.46	22.657	
8,300.0	8,285.4	8,382.3	8,285.4	29.3	33.1	4.71	1,028.0	-69.9	1,324.5	1,265.3	59.15	22.391	
8,400.0	8,385.4	8,482.3	8,385.4	29.6	33.4	4.71	1,028.0	-69.9	1,324.5	1,264.6	59.85	22.132	
8,500.0	8,485.4	8,582.3	8,485.4	30.0	33.7	4.71	1,028.0	-69.9	1,324.5	1,263.9	60.54	21.878	
8,600.0	8,585.4	8,682.3	8,585.4	30.3	34.0	4.71	1,028.0	-69.9	1,324.5	1,263.2	61.23	21.630	
8,700.0	8,685.4	8,782.3	8,685.4	30.7	34.3	4.71	1,028.0	-69.9	1,324.5	1,262.5	61.93	21.387	
8,731.1	8,716.5	8,813.5	8,716.5	30.8	34.4	4.71	1,028.0	-69.9	1,324.5	1,262.3	62.15	21.312	
8,736.3	8,721.7	8,817.7	8,720.8	30.8	34.4	-85.57	1,028.0	-69.8	1,324.5	1,262.3	62.18	21.301	
8,750.0	8,735.4	8,829.0	8,732.0	30.8	34.5	-85.57	1,028.0	-69.6	1,324.5	1,262.2	62.27	21.271	
8,775.0	8,760.3	8,850.0	8,753.0	30.9	34.5	-85.59	1,028.0	-68.5	1,324.4	1,262.0	62.42	21.217	
8,800.0	8,785.1	8,870.2	8,773.1	31.0	34.6	-85.61	1,028.0	-66.5	1,324.4	1,261.8	62.58	21.165	
8,825.0	8,809.8	8,890.8	8,793.5	31.1	34.7	-85.64	1,028.0	-63.6	1,324.3	1,261.6	62.73	21.113	
8,850.0	8,834.1	8,911.5	8,813.8	31.2	34.7	-85.69	1,028.0	-59.8	1,324.3	1,261.4	62.87	21.063	
8,875.0	8,858.2	8,932.2	8,834.0	31.2	34.8	-85.74	1,027.9	-55.2	1,324.2	1,261.2	63.02	21.013	
8,900.0	8,881.9	8,952.9	8,854.0	31.3	34.8	-85.80	1,027.9	-49.6	1,324.1	1,260.9	63.16	20.965	
8,925.0	8,905.1	8,975.0	8,875.0	31.4	34.9	-85.88	1,027.9	-42.8	1,324.0	1,260.7	63.30	20.916	
8,950.0	8,927.8	8,994.5	8,893.2	31.4	35.0	-85.96	1,027.8	-36.0	1,323.8	1,260.4	63.43	20.870	
8,975.0	8,949.9	9,015.3	8,912.4	31.5	35.0	-86.05	1,027.8	-27.8	1,323.7	1,260.1	63.57	20.824	
9,000.0	8,971.4	9,036.3	8,931.3	31.6	35.1	-86.16	1,027.7	-18.8	1,323.5	1,259.8	63.70	20.778	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,025.0	8,992.2	9,057.3	8,949.9	31.6	35.1	-86.27	1,027.7	-8.9	1,323.4	1,259.5	63.83	20.733	
9,050.0	9,012.2	9,078.4	8,968.0	31.7	35.2	-86.39	1,027.6	1.8	1,323.2	1,259.2	63.96	20.687	
9,075.0	9,031.4	9,100.0	8,986.1	31.7	35.2	-86.52	1,027.6	13.6	1,323.0	1,258.9	64.10	20.641	
9,100.0	9,049.8	9,120.8	9,003.1	31.8	35.3	-86.65	1,027.5	25.7	1,322.8	1,258.6	64.23	20.595	
9,125.0	9,067.2	9,142.2	9,019.9	31.8	35.3	-86.80	1,027.5	38.9	1,322.6	1,258.2	64.37	20.547	
9,150.0	9,083.7	9,163.7	9,036.1	31.8	35.3	-86.95	1,027.4	52.9	1,322.4	1,257.9	64.51	20.499	
9,175.0	9,099.1	9,185.3	9,051.8	31.9	35.4	-87.11	1,027.3	67.7	1,322.2	1,257.6	64.66	20.449	
9,200.0	9,113.6	9,207.0	9,067.0	31.9	35.4	-87.28	1,027.2	83.3	1,322.0	1,257.2	64.82	20.397	
9,225.0	9,126.9	9,228.9	9,081.4	32.0	35.5	-87.45	1,027.2	99.7	1,321.8	1,256.9	64.98	20.343	
9,250.0	9,139.1	9,250.0	9,094.7	32.1	35.5	-87.63	1,027.1	116.2	1,321.7	1,256.5	65.15	20.288	
9,275.0	9,150.2	9,273.0	9,108.3	32.1	35.5	-87.82	1,027.0	134.7	1,321.5	1,256.2	65.33	20.228	
9,300.0	9,160.0	9,295.3	9,120.6	32.3	35.6	-88.01	1,026.9	153.3	1,321.3	1,255.8	65.52	20.166	
9,325.0	9,168.7	9,317.8	9,132.2	32.4	35.6	-88.21	1,026.8	172.6	1,321.2	1,255.4	65.73	20.101	
9,350.0	9,176.1	9,340.5	9,142.8	32.5	35.6	-88.41	1,026.7	192.6	1,321.0	1,255.1	65.94	20.033	
9,375.0	9,182.2	9,363.4	9,152.6	32.6	35.7	-88.62	1,026.6	213.3	1,320.9	1,254.7	66.17	19.962	
9,400.0	9,187.1	9,386.4	9,161.5	32.8	35.7	-88.83	1,026.5	234.6	1,320.8	1,254.4	66.41	19.888	
9,425.0	9,190.7	9,409.7	9,169.4	32.9	35.8	-89.05	1,026.4	256.5	1,320.7	1,254.0	66.66	19.811	
9,450.0	9,193.0	9,433.2	9,176.3	33.0	35.8	-89.27	1,026.3	278.9	1,320.6	1,253.7	66.93	19.732	
9,475.0	9,193.9	9,456.9	9,182.1	33.2	35.9	-89.49	1,026.2	301.9	1,320.6	1,253.3	67.21	19.649	
9,481.1	9,194.0	9,462.8	9,183.4	33.2	35.9	-89.54	1,026.1	307.6	1,320.5	1,253.3	67.28	19.629	
9,500.0	9,194.0	9,480.9	9,186.9	33.4	35.9	-89.69	1,026.1	325.5	1,320.5	1,253.0	67.50	19.564	
9,600.0	9,194.0	9,580.1	9,194.0	34.1	36.3	-90.00	1,025.6	424.2	1,320.5	1,251.6	68.85	19.178	
9,617.0	9,194.0	9,597.1	9,194.0	34.3	36.3	-90.00	1,025.5	441.3	1,320.5	1,251.4	69.12	19.103	
9,700.0	9,194.0	9,680.1	9,194.0	35.0	36.8	-90.00	1,025.1	524.2	1,320.5	1,250.0	70.52	18.725	
9,800.0	9,194.0	9,780.1	9,194.0	36.0	37.6	-90.00	1,024.6	624.2	1,320.5	1,248.0	72.46	18.223	
9,900.0	9,194.0	9,880.1	9,194.0	37.2	38.5	-90.00	1,024.1	724.2	1,320.5	1,245.8	74.67	17.685	
10,000.0	9,194.0	9,980.1	9,194.0	38.5	39.6	-90.00	1,023.6	824.2	1,320.5	1,243.4	77.11	17.124	
10,100.0	9,194.0	10,080.1	9,194.0	39.9	40.8	-90.00	1,023.1	924.2	1,320.5	1,240.7	79.78	16.551	
10,200.0	9,194.0	10,180.1	9,194.0	41.4	42.2	-90.00	1,022.6	1,024.2	1,320.5	1,237.8	82.64	15.978	
10,300.0	9,194.0	10,280.1	9,194.0	42.9	43.6	-90.00	1,022.1	1,124.2	1,320.5	1,234.8	85.69	15.410	
10,400.0	9,194.0	10,380.1	9,194.0	44.6	45.1	-90.00	1,021.6	1,224.2	1,320.5	1,231.6	88.89	14.855	
10,500.0	9,194.0	10,480.1	9,194.0	46.3	46.7	-90.00	1,021.1	1,324.2	1,320.4	1,228.2	92.23	14.316	
10,600.0	9,194.0	10,580.1	9,194.0	48.0	48.4	-90.00	1,020.6	1,424.2	1,320.4	1,224.7	95.71	13.797	
10,700.0	9,194.0	10,680.1	9,194.0	49.9	50.1	-90.00	1,020.1	1,524.2	1,320.4	1,221.1	99.29	13.298	
10,800.0	9,194.0	10,780.1	9,194.0	51.7	51.9	-90.00	1,019.6	1,624.2	1,320.4	1,217.4	102.98	12.822	
10,900.0	9,194.0	10,880.1	9,194.0	53.7	53.8	-90.00	1,019.2	1,724.2	1,320.4	1,213.7	106.77	12.367	
11,000.0	9,194.0	10,980.1	9,194.0	55.6	55.6	-90.00	1,018.7	1,824.2	1,320.4	1,209.8	110.63	11.935	
11,100.0	9,194.0	11,080.1	9,194.0	57.6	57.6	-90.00	1,018.2	1,924.2	1,320.4	1,205.8	114.57	11.525	
11,200.0	9,194.0	11,180.1	9,194.0	59.6	59.5	-90.00	1,017.7	2,024.2	1,320.4	1,201.8	118.58	11.135	
11,300.0	9,194.0	11,280.1	9,194.0	61.7	61.5	-90.00	1,017.2	2,124.2	1,320.4	1,197.8	122.65	10.766	
11,400.0	9,194.0	11,380.1	9,194.0	63.8	63.5	-90.00	1,016.7	2,224.2	1,320.4	1,193.6	126.77	10.416	
11,500.0	9,194.0	11,480.1	9,194.0	65.9	65.6	-90.00	1,016.2	2,324.2	1,320.4	1,189.5	130.94	10.084	
11,600.0	9,194.0	11,580.1	9,194.0	68.0	67.7	-90.00	1,015.7	2,424.2	1,320.4	1,185.2	135.16	9.769	
11,700.0	9,194.0	11,680.1	9,194.0	70.1	69.8	-90.00	1,015.2	2,524.2	1,320.4	1,181.0	139.41	9.471	
11,800.0	9,194.0	11,780.1	9,194.0	72.3	71.9	-90.00	1,014.7	2,624.2	1,320.4	1,176.7	143.71	9.188	
11,900.0	9,194.0	11,880.1	9,194.0	74.5	74.0	-90.00	1,014.2	2,724.2	1,320.4	1,172.3	148.04	8.919	
12,000.0	9,194.0	11,980.1	9,194.0	76.7	76.2	-90.00	1,013.7	2,824.2	1,320.4	1,168.0	152.39	8.664	
12,100.0	9,194.0	12,080.1	9,194.0	78.9	78.4	-90.00	1,013.2	2,924.2	1,320.4	1,163.6	156.78	8.422	
12,200.0	9,194.0	12,180.1	9,194.0	81.1	80.5	-90.00	1,012.7	3,024.2	1,320.4	1,159.2	161.19	8.191	
12,300.0	9,194.0	12,280.1	9,194.0	83.3	82.7	-90.00	1,012.3	3,124.2	1,320.4	1,154.7	165.63	7.972	
12,400.0	9,194.0	12,380.1	9,194.0	85.6	84.9	-90.00	1,011.8	3,224.2	1,320.4	1,150.3	170.09	7.763	
12,500.0	9,194.0	12,480.1	9,194.0	87.8	87.2	-90.00	1,011.3	3,324.2	1,320.3	1,145.8	174.57	7.563	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.0	9,194.0	12,580.1	9,194.0	90.1	89.4	-90.00	1,010.8	3,424.2	1,320.3	1,141.3	179.07	7.373	
12,700.0	9,194.0	12,680.1	9,194.0	92.3	91.6	-90.00	1,010.3	3,524.2	1,320.3	1,136.7	183.59	7.192	
12,800.0	9,194.0	12,780.1	9,194.0	94.6	93.9	-90.00	1,009.8	3,624.2	1,320.3	1,132.2	188.12	7.019	
12,900.0	9,194.0	12,880.1	9,194.0	96.9	96.1	-90.00	1,009.3	3,724.2	1,320.3	1,127.7	192.67	6.853	
13,000.0	9,194.0	12,980.1	9,194.0	99.2	98.4	-90.00	1,008.8	3,824.2	1,320.3	1,123.1	197.23	6.694	
13,100.0	9,194.0	13,080.1	9,194.0	101.5	100.7	-90.00	1,008.3	3,924.2	1,320.3	1,118.5	201.80	6.543	
13,200.0	9,194.0	13,180.1	9,194.0	103.8	103.0	-90.00	1,007.8	4,024.2	1,320.3	1,113.9	206.39	6.397	
13,300.0	9,194.0	13,280.1	9,194.0	106.1	105.3	-90.00	1,007.3	4,124.2	1,320.3	1,109.3	210.99	6.258	
13,400.0	9,194.0	13,380.1	9,194.0	108.4	107.5	-90.00	1,006.8	4,224.2	1,320.3	1,104.7	215.60	6.124	
13,500.0	9,194.0	13,480.1	9,194.0	110.7	109.8	-90.00	1,006.3	4,324.2	1,320.3	1,100.1	220.22	5.995	
13,600.0	9,194.0	13,580.1	9,194.0	113.0	112.1	-90.00	1,005.8	4,424.2	1,320.3	1,095.4	224.85	5.872	
13,700.0	9,194.0	13,680.1	9,194.0	115.3	114.5	-90.00	1,005.4	4,524.2	1,320.3	1,090.8	229.49	5.753	
13,800.0	9,194.0	13,780.1	9,194.0	117.7	116.8	-90.00	1,004.9	4,624.2	1,320.3	1,086.2	234.13	5.639	
13,900.0	9,194.0	13,880.1	9,194.0	120.0	119.1	-90.00	1,004.4	4,724.2	1,320.3	1,081.5	238.79	5.529	
14,000.0	9,194.0	13,980.1	9,194.0	122.3	121.4	-90.00	1,003.9	4,824.2	1,320.3	1,076.8	243.45	5.423	
14,100.0	9,194.0	14,080.1	9,194.0	124.7	123.7	-90.00	1,003.4	4,924.2	1,320.3	1,072.2	248.11	5.321	
14,200.0	9,194.0	14,180.1	9,194.0	127.0	126.1	-90.00	1,002.9	5,024.2	1,320.3	1,067.5	252.79	5.223	
14,300.0	9,194.0	14,280.1	9,194.0	129.4	128.4	-90.00	1,002.4	5,124.2	1,320.3	1,062.8	257.47	5.128	
14,400.0	9,194.0	14,380.1	9,194.0	131.7	130.7	-90.00	1,001.9	5,224.2	1,320.3	1,058.1	262.16	5.036	
14,500.0	9,194.0	14,480.1	9,194.0	134.1	133.1	-90.00	1,001.4	5,324.2	1,320.2	1,053.4	266.85	4.948	
14,600.0	9,194.0	14,580.1	9,194.0	136.4	135.4	-90.00	1,000.9	5,424.2	1,320.2	1,048.7	271.55	4.862	
14,700.0	9,194.0	14,680.1	9,194.0	138.8	137.7	-90.00	1,000.4	5,524.2	1,320.2	1,044.0	276.25	4.779	
14,800.0	9,194.0	14,780.1	9,194.0	141.1	140.1	-90.00	999.9	5,624.2	1,320.2	1,039.3	280.96	4.699	
14,900.0	9,194.0	14,880.1	9,194.0	143.5	142.4	-90.00	999.4	5,724.2	1,320.2	1,034.6	285.67	4.622	
15,000.0	9,194.0	14,980.1	9,194.0	145.8	144.8	-90.00	998.9	5,824.2	1,320.2	1,029.8	290.39	4.546	
15,100.0	9,194.0	15,080.1	9,194.0	148.2	147.1	-90.00	998.5	5,924.2	1,320.2	1,025.1	295.11	4.474	
15,200.0	9,194.0	15,180.1	9,194.0	150.6	149.5	-90.00	998.0	6,024.2	1,320.2	1,020.4	299.83	4.403	
15,300.0	9,194.0	15,280.1	9,194.0	152.9	151.9	-90.00	997.5	6,124.2	1,320.2	1,015.6	304.56	4.335	
15,400.0	9,194.0	15,380.1	9,194.0	155.3	154.2	-90.00	997.0	6,224.2	1,320.2	1,010.9	309.29	4.268	
15,500.0	9,194.0	15,480.1	9,194.0	157.7	156.6	-90.00	996.5	6,324.2	1,320.2	1,006.2	314.03	4.204	
15,600.0	9,194.0	15,580.1	9,194.0	160.0	158.9	-90.00	996.0	6,424.2	1,320.2	1,001.4	318.76	4.142	
15,700.0	9,194.0	15,680.1	9,194.0	162.4	161.3	-90.00	995.5	6,524.2	1,320.2	996.7	323.50	4.081	
15,800.0	9,194.0	15,780.1	9,194.0	164.8	163.7	-90.00	995.0	6,624.2	1,320.2	991.9	328.25	4.022	
15,900.0	9,194.0	15,880.1	9,194.0	167.2	166.0	-90.00	994.5	6,724.2	1,320.2	987.2	333.00	3.965	
16,000.0	9,194.0	15,980.1	9,194.0	169.5	168.4	-90.00	994.0	6,824.2	1,320.2	982.4	337.75	3.909	
16,100.0	9,194.0	16,080.1	9,194.0	171.9	170.8	-90.00	993.5	6,924.2	1,320.2	977.7	342.50	3.855	
16,200.0	9,194.0	16,180.1	9,194.0	174.3	173.2	-90.00	993.0	7,024.2	1,320.2	972.9	347.25	3.802	
16,300.0	9,194.0	16,280.1	9,194.0	176.7	175.5	-90.00	992.5	7,124.2	1,320.2	968.1	352.01	3.750	
16,400.0	9,194.0	16,380.1	9,194.0	179.1	177.9	-90.00	992.0	7,224.2	1,320.2	963.4	356.77	3.700	
16,500.0	9,194.0	16,480.1	9,194.0	181.4	180.3	-90.00	991.6	7,324.2	1,320.1	958.6	361.53	3.652	
16,600.0	9,194.0	16,580.1	9,194.0	183.8	182.7	-90.00	991.1	7,424.2	1,320.1	953.8	366.30	3.604	
16,700.0	9,194.0	16,680.1	9,194.0	186.2	185.0	-90.00	990.6	7,524.2	1,320.1	949.1	371.06	3.558	
16,800.0	9,194.0	16,780.1	9,194.0	188.6	187.4	-90.00	990.1	7,624.2	1,320.1	944.3	375.83	3.513	
16,900.0	9,194.0	16,880.1	9,194.0	191.0	189.8	-90.00	989.6	7,724.2	1,320.1	939.5	380.60	3.469	
17,000.0	9,194.0	16,980.1	9,194.0	193.4	192.2	-90.00	989.1	7,824.1	1,320.1	934.7	385.37	3.426	
17,100.0	9,194.0	17,080.1	9,194.0	195.8	194.6	-90.00	988.6	7,924.1	1,320.1	930.0	390.15	3.384	
17,200.0	9,194.0	17,180.1	9,194.0	198.1	197.0	-90.00	988.1	8,024.1	1,320.1	925.2	394.92	3.343	
17,300.0	9,194.0	17,280.1	9,194.0	200.5	199.3	-90.00	987.6	8,124.1	1,320.1	920.4	399.70	3.303	
17,400.0	9,194.0	17,380.1	9,194.0	202.9	201.7	-90.00	987.1	8,224.1	1,320.1	915.6	404.48	3.264	
17,500.0	9,194.0	17,480.1	9,194.0	205.3	204.1	-90.00	986.6	8,324.1	1,320.1	910.8	409.26	3.226	
17,600.0	9,194.0	17,580.1	9,194.0	207.7	206.5	-90.00	986.1	8,424.1	1,320.1	906.1	414.04	3.188	
17,700.0	9,194.0	17,680.1	9,194.0	210.1	208.9	-90.00	985.6	8,524.1	1,320.1	901.3	418.82	3.152	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 131H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	9,194.0	17,780.1	9,194.0	212.5	211.3	-90.00	985.1	8,624.1	1,320.1	896.5	423.61	3.116	
17,900.0	9,194.0	17,880.1	9,194.0	214.9	213.7	-90.00	984.7	8,724.1	1,320.1	891.7	428.39	3.081	
18,000.0	9,194.0	17,980.1	9,194.0	217.3	216.1	-90.00	984.2	8,824.1	1,320.1	886.9	433.18	3.047	
18,100.0	9,194.0	18,080.1	9,194.0	219.7	218.4	-90.00	983.7	8,924.1	1,320.1	882.1	437.97	3.014	
18,200.0	9,194.0	18,180.1	9,194.0	222.1	220.8	-90.00	983.2	9,024.1	1,320.1	877.3	442.76	2.981	
18,300.0	9,194.0	18,280.1	9,194.0	224.5	223.2	-90.00	982.7	9,124.1	1,320.1	872.5	447.55	2.950	
18,400.0	9,194.0	18,380.1	9,194.0	226.9	225.6	-90.00	982.2	9,224.1	1,320.1	867.7	452.34	2.918	
18,500.0	9,194.0	18,480.1	9,194.0	229.3	228.0	-90.00	981.7	9,324.1	1,320.0	862.9	457.13	2.888	
18,600.0	9,194.0	18,580.1	9,194.0	231.7	230.4	-90.00	981.2	9,424.1	1,320.0	858.1	461.92	2.858	
18,700.0	9,194.0	18,680.1	9,194.0	234.1	232.8	-90.00	980.7	9,524.1	1,320.0	853.3	466.72	2.828	
18,800.0	9,194.0	18,780.1	9,194.0	236.5	235.2	-90.00	980.2	9,624.1	1,320.0	848.5	471.51	2.800	
18,900.0	9,194.0	18,880.1	9,194.0	238.9	237.6	-90.00	979.7	9,724.1	1,320.0	843.7	476.31	2.771	
19,000.0	9,194.0	18,980.1	9,194.0	241.3	240.0	-90.00	979.2	9,824.1	1,320.0	838.9	481.11	2.744	
19,100.0	9,194.0	19,080.1	9,194.0	243.7	242.4	-90.00	978.7	9,924.1	1,320.0	834.1	485.91	2.717	
19,200.0	9,194.0	19,180.1	9,194.0	246.1	244.8	-90.00	978.2	10,024.1	1,320.0	829.3	490.71	2.690	
19,300.0	9,194.0	19,280.1	9,194.0	248.5	247.2	-90.00	977.8	10,124.1	1,320.0	824.5	495.51	2.664	
19,400.0	9,194.0	19,380.1	9,194.0	250.9	249.6	-90.00	977.3	10,224.1	1,320.0	819.7	500.31	2.638	
19,500.0	9,194.0	19,480.1	9,194.0	253.3	252.0	-90.00	976.8	10,324.1	1,320.0	814.9	505.11	2.613	
19,600.0	9,194.0	19,580.1	9,194.0	255.7	254.4	-90.00	976.3	10,424.1	1,320.0	810.1	509.91	2.589	
19,700.0	9,194.0	19,680.1	9,194.0	258.1	256.8	-90.00	975.8	10,524.1	1,320.0	805.3	514.71	2.565	
19,800.0	9,194.0	19,780.1	9,194.0	260.5	259.2	-90.00	975.3	10,624.1	1,320.0	800.5	519.52	2.541	
19,838.1	9,194.0	19,818.1	9,194.0	261.4	260.1	-90.00	975.1	10,662.1	1,320.0	798.6	521.35	2.532	
19,847.1	9,194.0	19,818.1	9,194.0	261.6	260.1	-90.00	975.1	10,662.1	1,320.0	798.4	521.59	2.531 SF	

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 172H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-179.88	-99.0	-0.2	99.0				
100.0	100.0	100.0	100.0	0.1	0.1	-179.88	-99.0	-0.2	99.0	98.7	0.25	394.533	
200.0	200.0	200.0	200.0	0.5	0.5	-179.88	-99.0	-0.2	99.0	98.0	0.97	102.286	
300.0	300.0	300.0	300.0	0.8	0.8	-179.88	-99.0	-0.2	99.0	97.3	1.68	58.760	
400.0	400.0	400.0	400.0	1.2	1.2	-179.88	-99.0	-0.2	99.0	96.6	2.40	41.220	
500.0	500.0	500.0	500.0	1.6	1.6	-179.88	-99.0	-0.2	99.0	95.9	3.12	31.744	
600.0	600.0	600.0	600.0	1.9	1.9	-179.88	-99.0	-0.2	99.0	95.2	3.84	25.811	
700.0	700.0	700.0	700.0	2.3	2.3	-179.88	-99.0	-0.2	99.0	94.4	4.55	21.746	
800.0	800.0	800.0	800.0	2.6	2.6	-179.88	-99.0	-0.2	99.0	93.7	5.27	18.787	
900.0	900.0	900.0	900.0	3.0	3.0	-179.88	-99.0	-0.2	99.0	93.0	5.99	16.537	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	-179.88	-99.0	-0.2	99.0	92.3	6.70	14.769	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	-179.88	-99.0	-0.2	99.0	91.6	7.42	13.342	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	-179.88	-99.0	-0.2	99.0	90.9	8.14	12.166	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	-179.88	-99.0	-0.2	99.0	90.1	8.85	11.181	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	-179.88	-99.0	-0.2	99.0	89.4	9.57	10.344	
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	-179.88	-99.0	-0.2	99.0	88.7	10.29	9.623	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	-179.88	-99.0	-0.2	99.0	88.0	11.01	8.996	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	-179.88	-99.0	-0.2	99.0	87.3	11.72	8.446	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	-179.88	-99.0	-0.2	99.0	86.6	12.44	7.959	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	-179.88	-99.0	-0.2	99.0	85.8	13.16	7.525	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	-179.88	-99.0	-0.2	99.0	85.1	13.87	7.136	CC, ES
2,100.0	2,100.0	2,096.6	2,096.6	7.3	7.3	-179.80	-100.6	-0.4	100.7	86.1	14.55	6.918	
2,200.0	2,200.0	2,193.1	2,192.9	7.7	7.6	-179.56	-105.5	-0.8	105.7	90.5	15.20	6.953	
2,300.0	2,300.0	2,289.0	2,288.5	8.0	7.9	-179.22	-113.5	-1.5	114.1	98.3	15.84	7.203	
2,400.0	2,400.0	2,384.4	2,383.2	8.4	8.2	-178.83	-124.6	-2.6	125.8	109.3	16.46	7.643	
2,500.0	2,500.0	2,478.9	2,476.6	8.7	8.5	-178.41	-138.8	-3.8	140.8	123.7	17.06	8.252	
2,600.0	2,600.0	2,576.3	2,572.6	9.1	8.9	-178.02	-155.5	-5.4	158.0	140.3	17.72	8.917	
2,700.0	2,700.0	2,674.8	2,669.6	9.4	9.2	-177.70	-172.6	-6.9	175.4	157.0	18.41	9.527	
2,800.0	2,800.0	2,773.3	2,766.6	9.8	9.6	-177.44	-189.6	-8.5	192.7	173.6	19.10	10.091	
2,900.0	2,900.0	2,872.0	2,863.8	10.1	10.0	-28.75	-206.7	-10.1	208.5	188.8	19.77	10.548	
3,000.0	2,999.8	2,971.1	2,961.5	10.5	10.3	-29.07	-223.8	-11.6	221.4	200.9	20.44	10.831	
3,050.0	3,049.7	3,020.8	3,010.4	10.6	10.5	-29.39	-232.4	-12.4	226.6	205.9	20.77	10.911	
3,100.0	3,099.5	3,070.6	3,059.4	10.8	10.7	-29.79	-241.0	-13.2	231.6	210.4	21.11	10.969	
3,200.0	3,199.1	3,170.0	3,157.3	11.1	11.1	-30.56	-258.2	-14.8	241.4	219.6	21.79	11.079	
3,300.0	3,298.7	3,269.5	3,255.3	11.5	11.5	-31.26	-275.4	-16.3	251.3	228.8	22.47	11.182	
3,400.0	3,398.4	3,369.0	3,353.2	11.8	11.9	-31.91	-292.6	-17.9	261.2	238.1	23.16	11.279	
3,500.0	3,498.0	3,468.4	3,451.2	12.1	12.3	-32.51	-309.8	-19.5	271.2	247.3	23.85	11.369	
3,600.0	3,597.6	3,567.9	3,549.1	12.5	12.7	-33.07	-327.0	-21.1	281.2	256.6	24.55	11.454	
3,700.0	3,697.2	3,667.4	3,647.1	12.8	13.1	-33.59	-344.2	-22.6	291.2	266.0	25.25	11.533	
3,800.0	3,796.8	3,766.8	3,745.0	13.2	13.5	-34.08	-361.4	-24.2	301.2	275.3	25.95	11.608	
3,900.0	3,896.4	3,866.3	3,843.0	13.5	14.0	-34.53	-378.6	-25.8	311.3	284.6	26.66	11.678	
4,000.0	3,996.1	3,965.8	3,940.9	13.9	14.4	-34.96	-395.8	-27.3	321.4	294.0	27.36	11.744	
4,100.0	4,095.7	4,065.2	4,038.9	14.2	14.8	-35.36	-413.0	-28.9	331.5	303.4	28.07	11.806	
4,200.0	4,195.3	4,164.7	4,136.9	14.6	15.2	-35.73	-430.2	-30.5	341.6	312.8	28.79	11.865	
4,300.0	4,294.9	4,264.1	4,234.8	15.0	15.6	-36.09	-447.4	-32.1	351.7	322.2	29.50	11.920	
4,400.0	4,394.5	4,363.6	4,332.8	15.3	16.1	-36.42	-464.6	-33.6	361.8	331.6	30.22	11.973	
4,500.0	4,494.2	4,463.1	4,430.7	15.7	16.5	-36.74	-481.8	-35.2	372.0	341.0	30.94	12.022	
4,600.0	4,593.8	4,562.5	4,528.7	16.0	16.9	-37.04	-499.0	-36.8	382.1	350.5	31.66	12.069	
4,700.0	4,693.4	4,662.0	4,626.6	16.4	17.3	-37.33	-516.2	-38.4	392.3	359.9	32.38	12.114	
4,800.0	4,793.0	4,761.5	4,724.6	16.8	17.8	-37.60	-533.4	-39.9	402.5	369.4	33.11	12.156	
4,900.0	4,892.6	4,860.9	4,822.5	17.1	18.2	-37.85	-550.6	-41.5	412.6	378.8	33.83	12.196	
5,000.0	4,992.3	4,960.4	4,920.5	17.5	18.6	-38.10	-567.8	-43.1	422.8	388.3	34.56	12.234	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 172H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,091.9	5,059.9	5,018.4	17.9	19.1	-38.33	-585.0	-44.6	433.0	397.7	35.29	12.270	
5,200.0	5,191.5	5,159.3	5,116.4	18.2	19.5	-38.55	-602.2	-46.2	443.2	407.2	36.02	12.305	
5,300.0	5,291.1	5,258.8	5,214.3	18.6	19.9	-38.76	-619.4	-47.8	453.4	416.7	36.75	12.338	
5,400.0	5,390.7	5,358.2	5,312.3	19.0	20.4	-38.97	-636.6	-49.4	463.7	426.2	37.48	12.369	
5,500.0	5,490.4	5,457.7	5,410.2	19.3	20.8	-39.16	-653.8	-50.9	473.9	435.7	38.22	12.399	
5,600.0	5,590.0	5,557.2	5,508.2	19.7	21.3	-39.35	-671.0	-52.5	484.1	445.2	38.95	12.428	
5,700.0	5,689.6	5,656.6	5,606.1	20.1	21.7	-39.53	-688.2	-54.1	494.3	454.7	39.69	12.455	
5,800.0	5,789.2	5,756.1	5,704.1	20.4	22.1	-39.70	-705.4	-55.7	504.6	464.2	40.43	12.481	
5,900.0	5,888.8	5,855.6	5,802.0	20.8	22.6	-39.86	-722.6	-57.2	514.8	473.7	41.16	12.507	
6,000.0	5,988.5	5,955.0	5,900.0	21.2	23.0	-40.02	-739.8	-58.8	525.1	483.2	41.90	12.531	
6,100.0	6,088.1	6,054.5	5,998.0	21.6	23.4	-40.17	-757.0	-60.4	535.3	492.7	42.64	12.554	
6,200.0	6,187.7	6,154.0	6,095.9	21.9	23.9	-40.32	-774.2	-61.9	545.6	502.2	43.38	12.576	
6,300.0	6,287.3	6,253.4	6,193.9	22.3	24.3	-40.46	-791.4	-63.5	555.8	511.7	44.12	12.597	
6,400.0	6,386.9	6,352.9	6,291.8	22.7	24.8	-40.59	-808.6	-65.1	566.1	521.2	44.86	12.618	
6,500.0	6,486.6	6,452.3	6,389.8	23.1	25.2	-40.72	-825.8	-66.7	576.3	530.7	45.61	12.637	
6,600.0	6,586.2	6,551.8	6,487.7	23.4	25.7	-40.85	-843.0	-68.2	586.6	540.3	46.35	12.656	
6,700.0	6,685.8	6,651.3	6,585.7	23.8	26.1	-40.97	-860.2	-69.8	596.9	549.8	47.09	12.674	
6,727.2	6,712.9	6,678.3	6,612.3	23.9	26.2	-41.00	-864.9	-70.2	599.7	552.4	47.30	12.679	
6,800.0	6,785.5	6,750.7	6,683.5	24.2	26.5	-41.14	-877.4	-71.4	607.8	560.0	47.83	12.707	
6,900.0	6,885.4	6,849.7	6,781.1	24.5	27.0	-41.17	-894.5	-72.9	621.3	572.8	48.56	12.795	
6,977.2	6,962.5	6,925.9	6,856.2	24.8	27.3	170.37	-907.7	-74.2	633.5	584.4	49.11	12.901	
7,000.0	6,985.4	6,954.6	6,884.4	24.9	27.4	170.48	-912.5	-74.6	637.2	587.9	49.32	12.920	
7,100.0	7,085.4	7,081.2	7,009.7	25.2	28.0	170.89	-930.4	-76.2	651.0	600.7	50.22	12.961	
7,200.0	7,185.4	7,209.1	7,137.0	25.6	28.5	171.16	-942.9	-77.4	660.5	609.4	51.06	12.936	
7,300.0	7,285.4	7,337.9	7,265.6	25.9	28.9	171.30	-949.7	-78.0	665.6	613.8	51.80	12.849	
7,400.0	7,385.4	7,457.7	7,385.4	26.2	29.3	171.33	-951.0	-78.1	666.6	614.1	52.48	12.703	
7,500.0	7,485.4	7,557.7	7,485.4	26.6	29.6	171.33	-951.0	-78.1	666.6	613.5	53.15	12.543	
7,600.0	7,585.4	7,657.7	7,585.4	26.9	29.9	171.33	-951.0	-78.1	666.6	612.8	53.82	12.387	
7,700.0	7,685.4	7,757.7	7,685.4	27.3	30.2	171.33	-951.0	-78.1	666.6	612.1	54.49	12.235	
7,800.0	7,785.4	7,857.7	7,785.4	27.6	30.5	171.33	-951.0	-78.1	666.6	611.5	55.16	12.085	
7,900.0	7,885.4	7,957.7	7,885.4	27.9	30.8	171.33	-951.0	-78.1	666.6	610.8	55.83	11.940	
8,000.0	7,985.4	8,057.7	7,985.4	28.3	31.1	171.33	-951.0	-78.1	666.6	610.1	56.51	11.797	
8,100.0	8,085.4	8,157.7	8,085.4	28.6	31.4	171.33	-951.0	-78.1	666.6	609.4	57.18	11.658	
8,108.5	8,093.9	8,166.2	8,093.9	28.6	31.4	171.33	-951.0	-78.1	666.6	609.4	57.24	11.646	
8,200.0	8,185.4	8,250.0	8,177.7	29.0	31.7	171.24	-951.0	-77.1	666.8	609.0	57.87	11.523	
8,300.0	8,285.4	8,330.8	8,257.5	29.3	31.9	170.22	-951.1	-65.0	669.4	610.8	58.55	11.432	
8,400.0	8,385.4	8,405.0	8,328.0	29.6	32.1	168.32	-951.2	-42.3	675.6	616.4	59.17	11.418	
8,500.0	8,485.4	8,470.8	8,387.0	30.0	32.3	165.91	-951.3	-13.1	686.9	627.2	59.62	11.520	
8,600.0	8,585.4	8,525.0	8,432.1	30.3	32.4	163.50	-951.5	16.8	704.7	644.9	59.76	11.791	
8,700.0	8,685.4	8,575.0	8,470.6	30.7	32.5	160.99	-951.6	48.7	730.0	670.4	59.57	12.254	
8,731.1	8,716.5	8,589.1	8,480.8	30.8	32.6	160.23	-951.7	58.4	739.5	680.1	59.44	12.442	
8,750.0	8,735.4	8,600.0	8,488.5	30.8	32.6	68.67	-951.7	66.1	745.6	686.2	59.38	12.556	
8,775.0	8,760.3	8,607.6	8,493.8	30.9	32.6	67.35	-951.8	71.7	753.6	694.4	59.17	12.736	
8,800.0	8,785.1	8,618.3	8,501.0	31.0	32.6	65.90	-951.8	79.5	761.6	702.7	58.99	12.911	
8,825.0	8,809.8	8,625.0	8,505.4	31.1	32.6	64.68	-951.8	84.5	769.7	710.9	58.72	13.107	
8,850.0	8,834.1	8,639.8	8,515.0	31.2	32.7	63.15	-951.9	95.7	777.6	719.0	58.58	13.274	
8,875.0	8,858.2	8,650.0	8,521.4	31.2	32.7	61.87	-951.9	103.7	785.4	727.0	58.34	13.461	
8,900.0	8,881.9	8,661.5	8,528.4	31.3	32.7	60.60	-952.0	112.8	793.0	734.9	58.12	13.645	
8,925.0	8,905.1	8,675.0	8,536.4	31.4	32.7	59.32	-952.0	123.7	800.5	742.6	57.92	13.821	
8,950.0	8,927.8	8,683.4	8,541.2	31.4	32.7	58.28	-952.0	130.6	807.7	750.1	57.62	14.019	
8,975.0	8,949.9	8,700.0	8,550.3	31.5	32.8	57.05	-952.1	144.5	814.7	757.3	57.46	14.179	
9,000.0	8,971.4	8,700.0	8,550.3	31.6	32.8	56.35	-952.1	144.5	821.5	764.5	57.00	14.411	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 172H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,025.0	8,992.2	8,716.5	8,558.9	31.6	32.8	55.26	-952.2	158.6	827.9	771.0	56.85	14.563	
9,050.0	9,012.2	8,725.0	8,563.1	31.7	32.8	54.44	-952.2	166.0	834.0	777.4	56.55	14.748	
9,075.0	9,031.4	8,738.8	8,569.6	31.7	32.8	53.57	-952.3	178.1	839.7	783.4	56.35	14.902	
9,100.0	9,049.8	8,750.0	8,574.7	31.8	32.8	52.82	-952.3	188.1	845.2	789.0	56.12	15.061	
9,125.0	9,067.2	8,761.1	8,579.5	31.8	32.9	52.14	-952.4	198.2	850.2	794.3	55.89	15.211	
9,150.0	9,083.7	8,775.0	8,585.2	31.8	32.9	51.48	-952.5	210.8	854.8	799.1	55.73	15.339	
9,175.0	9,099.1	8,783.5	8,588.5	31.9	32.9	50.96	-952.5	218.7	859.1	803.6	55.50	15.480	
9,200.0	9,113.6	8,800.0	8,594.4	31.9	32.9	50.40	-952.6	234.0	862.9	807.5	55.41	15.574	
9,225.0	9,126.9	8,800.0	8,594.4	32.0	32.9	50.09	-952.6	234.0	866.3	811.2	55.08	15.727	
9,250.0	9,139.1	8,817.3	8,600.1	32.1	33.0	49.65	-952.6	250.4	869.2	814.1	55.05	15.788	
9,275.0	9,150.2	8,825.0	8,602.5	32.1	33.0	49.36	-952.7	257.7	871.7	816.8	54.91	15.875	
9,300.0	9,160.0	8,839.8	8,606.7	32.3	33.0	49.09	-952.8	271.9	873.7	818.8	54.89	15.916	
9,325.0	9,168.7	8,850.0	8,609.3	32.4	33.0	48.90	-952.8	281.8	875.3	820.4	54.84	15.959	
9,350.0	9,176.1	8,862.4	8,612.2	32.5	33.1	48.76	-952.9	293.8	876.4	821.5	54.86	15.975	
9,375.0	9,182.2	8,875.0	8,614.8	32.6	33.1	48.68	-952.9	306.1	877.0	822.1	54.91	15.972	
9,400.0	9,187.1	8,885.0	8,616.6	32.8	33.1	48.66	-953.0	316.0	877.1	822.2	54.96	15.959	
9,425.0	9,190.7	8,900.0	8,619.0	32.9	33.2	48.71	-953.1	330.8	876.8	821.7	55.10	15.912	
9,450.0	9,193.0	8,907.6	8,620.0	33.0	33.2	48.80	-953.1	338.3	876.0	820.8	55.21	15.866	
9,475.0	9,193.9	8,925.0	8,622.0	33.2	33.3	48.99	-953.2	355.6	874.8	819.3	55.44	15.778	
9,481.1	9,194.0	8,925.0	8,622.0	33.2	33.3	49.02	-953.2	355.6	874.4	818.9	55.47	15.763	
9,500.0	9,194.0	8,925.0	8,622.0	33.4	33.3	49.02	-953.2	355.6	873.3	817.7	55.57	15.714	
9,584.8	9,194.0	8,968.8	8,624.0	34.0	33.4	49.12	-953.4	399.3	871.0	814.6	56.42	15.436	
9,600.0	9,194.0	8,983.9	8,624.0	34.1	33.5	49.12	-953.5	414.4	871.0	814.4	56.61	15.387	
9,700.0	9,194.0	9,083.9	8,624.0	35.0	34.1	49.12	-954.0	514.4	871.0	813.0	57.98	15.023	
9,800.0	9,194.0	9,183.9	8,624.0	36.0	34.9	49.12	-954.5	614.4	871.0	811.5	59.56	14.625	
9,900.0	9,194.0	9,283.9	8,624.0	37.2	35.9	49.13	-955.0	714.4	871.0	809.7	61.33	14.203	
10,000.0	9,194.0	9,383.9	8,624.0	38.5	37.1	49.13	-955.5	814.4	871.0	807.7	63.28	13.765	
10,100.0	9,194.0	9,483.9	8,624.0	39.9	38.4	49.13	-956.0	914.4	871.0	805.6	65.39	13.320	
10,200.0	9,194.0	9,583.9	8,624.0	41.4	39.8	49.13	-956.5	1,014.4	871.0	803.4	67.65	12.875	
10,300.0	9,194.0	9,683.9	8,624.0	42.9	41.3	49.13	-957.0	1,114.4	871.1	801.0	70.05	12.435	
10,400.0	9,194.0	9,783.9	8,624.0	44.6	42.9	49.13	-957.5	1,214.4	871.1	798.5	72.56	12.004	
10,500.0	9,194.0	9,883.9	8,624.0	46.3	44.6	49.13	-958.0	1,314.4	871.1	795.9	75.18	11.586	
10,600.0	9,194.0	9,983.9	8,624.0	48.0	46.3	49.13	-958.5	1,414.4	871.1	793.2	77.90	11.182	
10,700.0	9,194.0	10,083.9	8,624.0	49.9	48.1	49.13	-959.0	1,514.4	871.1	790.4	80.71	10.793	
10,800.0	9,194.0	10,183.9	8,624.0	51.7	50.0	49.13	-959.5	1,614.4	871.1	787.5	83.59	10.421	
10,900.0	9,194.0	10,283.9	8,624.0	53.7	51.9	49.13	-960.0	1,714.4	871.1	784.6	86.55	10.065	
11,000.0	9,194.0	10,383.9	8,624.0	55.6	53.8	49.13	-960.5	1,814.4	871.1	781.6	89.57	9.726	
11,100.0	9,194.0	10,483.9	8,624.0	57.6	55.8	49.13	-961.0	1,914.4	871.1	778.5	92.64	9.403	
11,200.0	9,194.0	10,583.9	8,624.0	59.6	57.8	49.13	-961.5	2,014.4	871.2	775.4	95.77	9.096	
11,300.0	9,194.0	10,683.9	8,624.0	61.7	59.8	49.13	-962.0	2,114.4	871.2	772.2	98.95	8.804	
11,400.0	9,194.0	10,783.9	8,624.0	63.8	61.9	49.13	-962.5	2,214.4	871.2	769.0	102.17	8.527	
11,500.0	9,194.0	10,883.9	8,624.0	65.9	64.0	49.13	-963.0	2,314.4	871.2	765.8	105.42	8.264	
11,600.0	9,194.0	10,983.9	8,624.0	68.0	66.1	49.14	-963.5	2,414.4	871.2	762.5	108.71	8.014	
11,700.0	9,194.0	11,083.9	8,624.0	70.1	68.3	49.14	-964.0	2,514.4	871.2	759.2	112.04	7.776	
11,800.0	9,194.0	11,183.9	8,624.0	72.3	70.4	49.14	-964.5	2,614.4	871.2	755.8	115.39	7.550	
11,900.0	9,194.0	11,283.9	8,624.0	74.5	72.6	49.14	-965.0	2,714.4	871.2	752.5	118.77	7.335	
12,000.0	9,194.0	11,383.9	8,624.0	76.7	74.8	49.14	-965.5	2,814.4	871.2	749.1	122.18	7.131	
12,100.0	9,194.0	11,483.9	8,624.0	78.9	77.0	49.14	-966.0	2,914.4	871.2	745.6	125.60	6.937	
12,200.0	9,194.0	11,583.9	8,624.0	81.1	79.2	49.14	-966.5	3,014.4	871.3	742.2	129.05	6.751	
12,300.0	9,194.0	11,683.9	8,624.0	83.3	81.5	49.14	-967.0	3,114.4	871.3	738.8	132.52	6.575	
12,400.0	9,194.0	11,783.9	8,624.0	85.6	83.7	49.14	-967.5	3,214.4	871.3	735.3	136.00	6.406	
12,500.0	9,194.0	11,883.9	8,624.0	87.8	85.9	49.14	-968.0	3,314.4	871.3	731.8	139.51	6.246	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 172H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.0	9,194.0	11,983.9	8,624.0	90.1	88.2	49.14	-968.5	3,414.4	871.3	728.3	143.02	6.092	
12,700.0	9,194.0	12,083.9	8,624.0	92.3	90.5	49.14	-969.0	3,514.4	871.3	724.8	146.55	5.945	
12,800.0	9,194.0	12,183.9	8,624.0	94.6	92.7	49.14	-969.5	3,614.4	871.3	721.2	150.10	5.805	
12,900.0	9,194.0	12,283.9	8,624.0	96.9	95.0	49.14	-970.0	3,714.4	871.3	717.7	153.65	5.671	
13,000.0	9,194.0	12,383.9	8,624.0	99.2	97.3	49.14	-970.5	3,814.4	871.3	714.1	157.22	5.542	
13,100.0	9,194.0	12,483.9	8,624.0	101.5	99.6	49.14	-971.0	3,914.4	871.4	710.6	160.80	5.419	
13,200.0	9,194.0	12,583.9	8,624.0	103.8	101.9	49.14	-971.5	4,014.4	871.4	707.0	164.39	5.301	
13,300.0	9,194.0	12,683.9	8,624.0	106.1	104.2	49.15	-972.0	4,114.4	871.4	703.4	167.99	5.187	
13,400.0	9,194.0	12,783.9	8,624.0	108.4	106.5	49.15	-972.5	4,214.4	871.4	699.8	171.59	5.078	
13,500.0	9,194.0	12,883.9	8,624.0	110.7	108.8	49.15	-973.0	4,314.4	871.4	696.2	175.21	4.974	
13,600.0	9,194.0	12,983.9	8,624.0	113.0	111.2	49.15	-973.5	4,414.4	871.4	692.6	178.83	4.873	
13,700.0	9,194.0	13,083.9	8,624.0	115.3	113.5	49.15	-974.0	4,514.4	871.4	689.0	182.46	4.776	
13,800.0	9,194.0	13,183.9	8,624.0	117.7	115.8	49.15	-974.5	4,614.4	871.4	685.3	186.10	4.683	
13,900.0	9,194.0	13,283.9	8,624.0	120.0	118.1	49.15	-975.1	4,714.4	871.4	681.7	189.74	4.593	
14,000.0	9,194.0	13,383.9	8,624.0	122.3	120.5	49.15	-975.6	4,814.4	871.4	678.1	193.39	4.506	
14,100.0	9,194.0	13,483.9	8,624.0	124.7	122.8	49.15	-976.1	4,914.4	871.5	674.4	197.04	4.423	
14,200.0	9,194.0	13,583.9	8,624.0	127.0	125.2	49.15	-976.6	5,014.4	871.5	670.8	200.70	4.342	
14,300.0	9,194.0	13,683.9	8,624.0	129.4	127.5	49.15	-977.1	5,114.4	871.5	667.1	204.37	4.264	
14,400.0	9,194.0	13,783.9	8,624.0	131.7	129.9	49.15	-977.6	5,214.4	871.5	663.5	208.04	4.189	
14,500.0	9,194.0	13,883.9	8,624.0	134.1	132.2	49.15	-978.1	5,314.4	871.5	659.8	211.71	4.116	
14,600.0	9,194.0	13,983.9	8,624.0	136.4	134.6	49.15	-978.6	5,414.4	871.5	656.1	215.39	4.046	
14,700.0	9,194.0	14,083.9	8,624.0	138.8	136.9	49.15	-979.1	5,514.4	871.5	652.4	219.08	3.978	
14,800.0	9,194.0	14,183.9	8,624.0	141.1	139.3	49.15	-979.6	5,614.4	871.5	648.8	222.76	3.912	
14,900.0	9,194.0	14,283.9	8,624.0	143.5	141.6	49.16	-980.1	5,714.4	871.5	645.1	226.45	3.849	
15,000.0	9,194.0	14,383.9	8,624.0	145.8	144.0	49.16	-980.6	5,814.4	871.6	641.4	230.15	3.787	
15,100.0	9,194.0	14,483.9	8,624.0	148.2	146.4	49.16	-981.1	5,914.4	871.6	637.7	233.85	3.727	
15,200.0	9,194.0	14,583.9	8,624.0	150.6	148.7	49.16	-981.6	6,014.4	871.6	634.0	237.55	3.669	
15,300.0	9,194.0	14,683.9	8,624.0	152.9	151.1	49.16	-982.1	6,114.4	871.6	630.3	241.25	3.613	
15,400.0	9,194.0	14,783.9	8,624.0	155.3	153.5	49.16	-982.6	6,214.4	871.6	626.6	244.96	3.558	
15,500.0	9,194.0	14,883.9	8,624.0	157.7	155.8	49.16	-983.1	6,314.4	871.6	622.9	248.67	3.505	
15,600.0	9,194.0	14,983.9	8,624.0	160.0	158.2	49.16	-983.6	6,414.4	871.6	619.2	252.39	3.454	
15,700.0	9,194.0	15,083.9	8,624.0	162.4	160.6	49.16	-984.1	6,514.4	871.6	615.5	256.10	3.403	
15,800.0	9,194.0	15,183.9	8,624.0	164.8	163.0	49.16	-984.6	6,614.3	871.6	611.8	259.82	3.355	
15,900.0	9,194.0	15,283.9	8,624.0	167.2	165.3	49.16	-985.1	6,714.3	871.6	608.1	263.54	3.307	
16,000.0	9,194.0	15,383.9	8,624.0	169.5	167.7	49.16	-985.6	6,814.3	871.7	604.4	267.26	3.261	
16,100.0	9,194.0	15,483.9	8,624.0	171.9	170.1	49.16	-986.1	6,914.3	871.7	600.7	270.99	3.217	
16,200.0	9,194.0	15,583.9	8,624.0	174.3	172.5	49.16	-986.6	7,014.3	871.7	597.0	274.72	3.173	
16,300.0	9,194.0	15,683.9	8,624.0	176.7	174.9	49.16	-987.1	7,114.3	871.7	593.2	278.45	3.131	
16,400.0	9,194.0	15,783.9	8,624.0	179.1	177.2	49.16	-987.6	7,214.3	871.7	589.5	282.18	3.089	
16,500.0	9,194.0	15,883.9	8,624.0	181.4	179.6	49.16	-988.1	7,314.3	871.7	585.8	285.91	3.049	
16,600.0	9,194.0	15,983.9	8,624.0	183.8	182.0	49.17	-988.6	7,414.3	871.7	582.1	289.65	3.010	
16,700.0	9,194.0	16,083.9	8,624.0	186.2	184.4	49.17	-989.1	7,514.3	871.7	578.3	293.38	2.971	
16,800.0	9,194.0	16,183.9	8,624.0	188.6	186.8	49.17	-989.6	7,614.3	871.7	574.6	297.12	2.934	
16,900.0	9,194.0	16,283.9	8,624.0	191.0	189.2	49.17	-990.1	7,714.3	871.8	570.9	300.86	2.898	
17,000.0	9,194.0	16,383.9	8,624.0	193.4	191.6	49.17	-990.6	7,814.3	871.8	567.2	304.60	2.862	
17,100.0	9,194.0	16,483.9	8,624.0	195.8	193.9	49.17	-991.1	7,914.3	871.8	563.4	308.35	2.827	
17,200.0	9,194.0	16,583.9	8,624.0	198.1	196.3	49.17	-991.6	8,014.3	871.8	559.7	312.09	2.793	
17,300.0	9,194.0	16,683.9	8,624.0	200.5	198.7	49.17	-992.1	8,114.3	871.8	556.0	315.84	2.760	
17,400.0	9,194.0	16,783.9	8,624.0	202.9	201.1	49.17	-992.6	8,214.3	871.8	552.2	319.59	2.728	
17,500.0	9,194.0	16,883.9	8,624.0	205.3	203.5	49.17	-993.1	8,314.3	871.8	548.5	323.33	2.696	
17,600.0	9,194.0	16,983.9	8,624.0	207.7	205.9	49.17	-993.6	8,414.3	871.8	544.7	327.08	2.665	
17,700.0	9,194.0	17,083.9	8,624.0	210.1	208.3	49.17	-994.1	8,514.3	871.8	541.0	330.84	2.635	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 172H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	9,194.0	17,183.9	8,624.0	212.5	210.7	49.17	-994.6	8,614.3	871.8	537.3	334.59	2.606	
17,900.0	9,194.0	17,283.9	8,624.0	214.9	213.1	49.17	-995.1	8,714.3	871.9	533.5	338.34	2.577	
18,000.0	9,194.0	17,383.9	8,624.0	217.3	215.5	49.17	-995.6	8,814.3	871.9	529.8	342.10	2.549	
18,100.0	9,194.0	17,483.9	8,624.0	219.7	217.9	49.17	-996.1	8,914.3	871.9	526.0	345.85	2.521	
18,200.0	9,194.0	17,583.9	8,624.0	222.1	220.3	49.17	-996.6	9,014.3	871.9	522.3	349.61	2.494	
18,300.0	9,194.0	17,683.9	8,624.0	224.5	222.7	49.18	-997.1	9,114.3	871.9	518.5	353.37	2.467	
18,400.0	9,194.0	17,783.9	8,624.0	226.9	225.1	49.18	-997.6	9,214.3	871.9	514.8	357.13	2.441	
18,500.0	9,194.0	17,883.9	8,624.0	229.3	227.5	49.18	-998.1	9,314.3	871.9	511.0	360.89	2.416	
18,600.0	9,194.0	17,983.9	8,624.0	231.7	229.9	49.18	-998.6	9,414.3	871.9	507.3	364.65	2.391	
18,700.0	9,194.0	18,083.9	8,624.0	234.1	232.3	49.18	-999.1	9,514.3	871.9	503.5	368.41	2.367	
18,800.0	9,194.0	18,183.9	8,624.0	236.5	234.7	49.18	-999.6	9,614.3	872.0	499.8	372.17	2.343	
18,900.0	9,194.0	18,283.9	8,624.0	238.9	237.1	49.18	-1,000.1	9,714.3	872.0	496.0	375.94	2.319	
19,000.0	9,194.0	18,383.9	8,624.0	241.3	239.5	49.18	-1,000.6	9,814.3	872.0	492.3	379.70	2.296	
19,100.0	9,194.0	18,483.9	8,624.0	243.7	241.9	49.18	-1,001.1	9,914.3	872.0	488.5	383.47	2.274	
19,200.0	9,194.0	18,583.9	8,624.0	246.1	244.3	49.18	-1,001.6	10,014.3	872.0	484.8	387.23	2.252	
19,300.0	9,194.0	18,683.9	8,624.0	248.5	246.7	49.18	-1,002.2	10,114.3	872.0	481.0	391.00	2.230	
19,400.0	9,194.0	18,783.9	8,624.0	250.9	249.1	49.18	-1,002.7	10,214.3	872.0	477.2	394.77	2.209	
19,500.0	9,194.0	18,883.9	8,624.0	253.3	251.5	49.18	-1,003.2	10,314.3	872.0	473.5	398.53	2.188	
19,600.0	9,194.0	18,983.9	8,624.0	255.7	253.9	49.18	-1,003.7	10,414.3	872.0	469.7	402.30	2.168	
19,700.0	9,194.0	19,083.9	8,624.0	258.1	256.3	49.18	-1,004.2	10,514.3	872.0	466.0	406.07	2.148	
19,800.0	9,194.0	19,183.9	8,624.0	260.5	258.7	49.18	-1,004.7	10,614.3	872.1	462.2	409.84	2.128	
19,847.1	9,194.0	19,231.0	8,624.0	261.6	259.8	49.18	-1,004.9	10,661.4	872.1	460.4	411.62	2.119 SF	

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** Distance — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.12	33.0	0.1	33.0				
100.0	100.0	100.0	100.0	0.1	0.1	0.12	33.0	0.1	33.0	32.7	0.25	131.511	
200.0	200.0	200.0	200.0	0.5	0.5	0.12	33.0	0.1	33.0	32.0	0.97	34.095	
300.0	300.0	300.0	300.0	0.8	0.8	0.12	33.0	0.1	33.0	31.3	1.68	19.587	
400.0	400.0	400.0	400.0	1.2	1.2	0.12	33.0	0.1	33.0	30.6	2.40	13.740	
500.0	500.0	500.0	500.0	1.6	1.6	0.12	33.0	0.1	33.0	29.9	3.12	10.581	
600.0	600.0	600.0	600.0	1.9	1.9	0.12	33.0	0.1	33.0	29.2	3.84	8.604	
700.0	700.0	700.0	700.0	2.3	2.3	0.12	33.0	0.1	33.0	28.4	4.55	7.249	
800.0	800.0	800.0	800.0	2.6	2.6	0.12	33.0	0.1	33.0	27.7	5.27	6.262	
900.0	900.0	900.0	900.0	3.0	3.0	0.12	33.0	0.1	33.0	27.0	5.99	5.512	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	0.12	33.0	0.1	33.0	26.3	6.70	4.923	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	0.12	33.0	0.1	33.0	25.6	7.42	4.447	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	0.12	33.0	0.1	33.0	24.9	8.14	4.055	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	0.12	33.0	0.1	33.0	24.1	8.85	3.727	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	0.12	33.0	0.1	33.0	23.4	9.57	3.448	
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	0.12	33.0	0.1	33.0	22.7	10.29	3.208	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	0.12	33.0	0.1	33.0	22.0	11.01	2.999	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	0.12	33.0	0.1	33.0	21.3	11.72	2.815	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	0.12	33.0	0.1	33.0	20.6	12.44	2.653	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	0.12	33.0	0.1	33.0	19.8	13.16	2.508	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	0.12	33.0	0.1	33.0	19.1	13.87	2.379	CC, ES
2,100.0	2,100.0	2,099.0	2,098.9	7.3	7.3	-1.22	34.5	-0.7	34.5	20.0	14.58	2.368	
2,200.0	2,200.0	2,197.7	2,197.5	7.7	7.6	-4.61	39.0	-3.1	39.2	23.9	15.27	2.568	
2,300.0	2,300.0	2,295.9	2,295.4	8.0	8.0	-8.72	46.5	-7.1	47.2	31.3	15.94	2.963	
2,400.0	2,400.0	2,393.5	2,392.3	8.4	8.3	-12.56	56.8	-12.7	58.7	42.1	16.60	3.537	
2,500.0	2,500.0	2,490.1	2,487.8	8.7	8.7	-15.70	69.9	-19.7	73.6	56.4	17.22	4.274	
2,600.0	2,600.0	2,588.4	2,584.5	9.1	9.1	-18.06	84.9	-27.7	90.6	72.7	17.92	5.059	
2,700.0	2,700.0	2,686.9	2,681.5	9.4	9.4	-19.67	100.0	-35.7	107.8	89.2	18.62	5.788	
2,800.0	2,800.0	2,785.3	2,778.5	9.8	9.8	-20.84	115.1	-43.8	125.0	105.7	19.33	6.467	
2,900.0	2,900.0	2,883.6	2,875.3	10.1	10.2	127.09	130.1	-51.9	143.3	123.3	20.02	7.156	
3,000.0	2,999.8	2,981.5	2,971.7	10.5	10.6	127.51	145.1	-59.9	163.6	142.9	20.70	7.904	
3,050.0	3,049.7	3,030.3	3,019.7	10.6	10.8	127.99	152.6	-63.9	174.6	153.6	21.05	8.297	
3,100.0	3,099.5	3,078.9	3,067.6	10.8	11.0	128.67	160.0	-67.8	185.9	164.5	21.39	8.691	
3,200.0	3,199.1	3,176.3	3,163.5	11.1	11.4	129.82	174.9	-75.8	208.5	186.4	22.07	9.445	
3,300.0	3,298.7	3,273.6	3,259.3	11.5	11.8	130.75	189.9	-83.8	231.1	208.4	22.76	10.154	
3,400.0	3,398.4	3,371.0	3,355.2	11.8	12.2	131.50	204.8	-91.8	253.8	230.4	23.45	10.823	
3,500.0	3,498.0	3,468.3	3,451.0	12.1	12.6	132.14	219.7	-99.7	276.5	252.4	24.15	11.453	
3,600.0	3,597.6	3,565.6	3,546.9	12.5	13.0	132.68	234.6	-107.7	299.3	274.5	24.84	12.047	
3,700.0	3,697.2	3,663.0	3,642.8	12.8	13.4	133.14	249.5	-115.7	322.1	296.5	25.54	12.609	
3,800.0	3,796.8	3,760.3	3,738.6	13.2	13.8	133.54	264.4	-123.6	344.9	318.6	26.25	13.140	
3,900.0	3,896.4	3,857.7	3,834.5	13.5	14.2	133.89	279.3	-131.6	367.7	340.8	26.95	13.643	
4,000.0	3,996.1	3,955.0	3,930.4	13.9	14.6	134.20	294.2	-139.6	390.5	362.9	27.66	14.120	
4,100.0	4,095.7	4,052.3	4,026.2	14.2	15.0	134.48	309.1	-147.5	413.4	385.0	28.37	14.572	
4,200.0	4,195.3	4,149.7	4,122.1	14.6	15.4	134.73	324.0	-155.5	436.2	407.1	29.08	15.002	
4,300.0	4,294.9	4,258.1	4,229.0	15.0	15.9	135.00	339.8	-164.0	458.3	428.4	29.90	15.326	
4,400.0	4,394.5	4,374.7	4,344.6	15.3	16.3	135.41	353.1	-171.0	476.9	446.1	30.78	15.494	
4,500.0	4,494.2	4,492.8	4,462.2	15.7	16.8	135.93	362.2	-175.9	491.6	460.0	31.62	15.548	
4,600.0	4,593.8	4,612.0	4,581.3	16.0	17.2	136.59	367.1	-178.6	502.4	470.0	32.42	15.499	
4,700.0	4,693.4	4,724.1	4,693.4	16.4	17.6	137.32	368.0	-179.0	509.6	476.4	33.16	15.368	
4,800.0	4,793.0	4,823.7	4,793.0	16.8	17.9	137.97	368.0	-179.0	516.0	482.1	33.87	15.237	
4,900.0	4,892.6	4,923.3	4,892.6	17.1	18.3	138.61	368.0	-179.0	522.5	487.9	34.57	15.113	
5,000.0	4,992.3	5,023.0	4,992.3	17.5	18.6	139.23	368.0	-179.0	529.1	493.8	35.28	14.995	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,091.9	5,122.6	5,091.9	17.9	19.0	139.84	368.0	-179.0	535.7	499.7	36.00	14.884	
5,200.0	5,191.5	5,222.2	5,191.5	18.2	19.3	140.43	368.0	-179.0	542.4	505.7	36.71	14.778	
5,300.0	5,291.1	5,321.8	5,291.1	18.6	19.6	141.01	368.0	-179.0	549.2	511.8	37.42	14.678	
5,400.0	5,390.7	5,421.4	5,390.7	19.0	20.0	141.58	368.0	-179.0	556.0	517.9	38.13	14.583	
5,500.0	5,490.4	5,521.0	5,490.4	19.3	20.3	142.13	368.0	-179.0	562.9	524.0	38.84	14.492	
5,600.0	5,590.0	5,620.7	5,590.0	19.7	20.6	142.66	368.0	-179.0	569.8	530.2	39.55	14.406	
5,700.0	5,689.6	5,720.3	5,689.6	20.1	21.0	143.19	368.0	-179.0	576.8	536.5	40.26	14.324	
5,800.0	5,789.2	5,819.9	5,789.2	20.4	21.3	143.70	368.0	-179.0	583.8	542.8	40.98	14.246	
5,900.0	5,888.8	5,919.5	5,888.8	20.8	21.7	144.20	368.0	-179.0	590.8	549.1	41.69	14.172	
6,000.0	5,988.5	6,019.1	5,988.5	21.2	22.0	144.69	368.0	-179.0	597.9	555.5	42.40	14.101	
6,100.0	6,088.1	6,118.8	6,088.1	21.6	22.4	145.16	368.0	-179.0	605.1	561.9	43.12	14.033	
6,200.0	6,187.7	6,218.4	6,187.7	21.9	22.7	145.63	368.0	-179.0	612.2	568.4	43.83	13.969	
6,300.0	6,287.3	6,318.0	6,287.3	22.3	23.0	146.08	368.0	-179.0	619.5	574.9	44.54	13.907	
6,400.0	6,386.9	6,417.6	6,386.9	22.7	23.4	146.53	368.0	-179.0	626.7	581.5	45.26	13.849	
6,500.0	6,486.6	6,517.2	6,486.6	23.1	23.7	146.96	368.0	-179.0	634.0	588.1	45.97	13.792	
6,600.0	6,586.2	6,616.9	6,586.2	23.4	24.1	147.39	368.0	-179.0	641.4	594.7	46.68	13.739	
6,700.0	6,685.8	6,716.5	6,685.8	23.8	24.4	147.80	368.0	-179.0	648.7	601.3	47.40	13.687	
6,727.2	6,712.9	6,743.5	6,712.9	23.9	24.5	147.91	368.0	-179.0	650.7	603.1	47.59	13.673	
6,800.0	6,785.5	6,816.2	6,785.5	24.2	24.8	148.21	368.0	-179.0	655.3	607.2	48.11	13.622	
6,900.0	6,885.4	6,916.1	6,885.4	24.5	25.1	148.45	368.0	-179.0	659.1	610.3	48.82	13.501	
6,977.2	6,962.5	6,993.2	6,962.5	24.8	25.4	-0.04	368.0	-179.0	660.0	610.6	49.36	13.371	
7,000.0	6,985.4	7,016.1	6,985.4	24.9	25.5	-0.04	368.0	-179.0	660.0	610.5	49.52	13.328	
7,100.0	7,085.4	7,116.1	7,085.4	25.2	25.8	-0.04	368.0	-179.0	660.0	609.8	50.21	13.144	
7,200.0	7,185.4	7,216.1	7,185.4	25.6	26.2	-0.04	368.0	-179.0	660.0	609.1	50.91	12.964	
7,300.0	7,285.4	7,316.1	7,285.4	25.9	26.5	-0.04	368.0	-179.0	660.0	608.4	51.61	12.788	
7,400.0	7,385.4	7,416.1	7,385.4	26.2	26.9	-0.04	368.0	-179.0	660.0	607.7	52.31	12.618	
7,500.0	7,485.4	7,516.1	7,485.4	26.6	27.2	-0.04	368.0	-179.0	660.0	607.0	53.01	12.451	
7,600.0	7,585.4	7,616.1	7,585.4	26.9	27.6	-0.04	368.0	-179.0	660.0	606.3	53.71	12.289	
7,700.0	7,685.4	7,716.1	7,685.4	27.3	27.9	-0.04	368.0	-179.0	660.0	605.6	54.40	12.131	
7,800.0	7,785.4	7,816.1	7,785.4	27.6	28.3	-0.04	368.0	-179.0	660.0	604.9	55.10	11.977	
7,900.0	7,885.4	7,916.1	7,885.4	27.9	28.6	-0.04	368.0	-179.0	660.0	604.2	55.81	11.827	
8,000.0	7,985.4	8,016.1	7,985.4	28.3	29.0	-0.04	368.0	-179.0	660.0	603.5	56.51	11.680	
8,100.0	8,085.4	8,116.1	8,085.4	28.6	29.3	-0.04	368.0	-179.0	660.0	602.8	57.21	11.537	
8,200.0	8,185.4	8,216.1	8,185.4	29.0	29.7	-0.04	368.0	-179.0	660.0	602.1	57.91	11.397	
8,300.0	8,285.4	8,316.1	8,285.4	29.3	30.0	-0.04	368.0	-179.0	660.0	601.4	58.61	11.261	
8,400.0	8,385.4	8,416.1	8,385.4	29.6	30.4	-0.04	368.0	-179.0	660.0	600.7	59.31	11.127	
8,500.0	8,485.4	8,516.1	8,485.4	30.0	30.7	-0.04	368.0	-179.0	660.0	600.0	60.02	10.997	
8,600.0	8,585.4	8,616.1	8,585.4	30.3	31.1	-0.04	368.0	-179.0	660.0	599.3	60.72	10.870	
8,700.0	8,685.4	8,716.1	8,685.4	30.7	31.4	-0.04	368.0	-179.0	660.0	598.6	61.42	10.745	
8,731.1	8,716.5	8,747.2	8,716.5	30.8	31.5	-0.04	368.0	-179.0	660.0	598.4	61.64	10.707	
8,750.0	8,735.4	8,766.1	8,735.4	30.8	31.6	-90.35	368.0	-179.0	660.0	598.2	61.77	10.684	
8,775.0	8,760.3	8,791.0	8,760.3	30.9	31.7	-90.49	368.0	-179.0	660.0	598.1	61.94	10.655	
8,800.0	8,785.1	8,815.8	8,785.1	31.0	31.8	-90.74	368.0	-179.0	660.0	597.9	62.11	10.626	
8,825.0	8,809.8	8,840.5	8,809.8	31.1	31.8	-91.09	368.0	-179.0	660.1	597.8	62.28	10.599	
8,850.0	8,834.1	8,864.8	8,834.1	31.2	31.9	-91.55	368.0	-179.0	660.2	597.8	62.44	10.573	
8,875.0	8,858.2	8,888.9	8,858.2	31.2	32.0	-92.09	368.0	-179.0	660.5	597.9	62.60	10.550	
8,900.0	8,881.9	8,912.6	8,881.9	31.3	32.1	-92.70	368.0	-179.0	660.8	598.1	62.76	10.529	
8,925.0	8,905.1	8,935.8	8,905.1	31.4	32.2	-93.38	368.0	-179.0	661.4	598.4	62.91	10.512	
8,950.0	8,927.8	8,959.1	8,928.4	31.4	32.3	-94.14	368.0	-179.0	662.1	599.0	63.06	10.499	
8,975.0	8,949.9	8,984.8	8,954.0	31.5	32.4	-94.98	368.0	-178.0	663.1	599.8	63.22	10.489	
9,000.0	8,971.4	9,011.2	8,980.3	31.6	32.4	-95.82	368.0	-175.6	664.2	600.8	63.36	10.482	
9,025.0	8,992.2	9,038.3	9,007.2	31.6	32.5	-96.66	368.0	-171.6	665.5	602.0	63.50	10.479	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,050.0	9,012.2	9,066.3	9,034.5	31.7	32.6	-97.50	367.9	-165.8	666.9	603.2	63.64	10.479	
9,075.0	9,031.4	9,095.1	9,062.4	31.7	32.7	-98.33	367.9	-158.2	668.5	604.7	63.77	10.483	
9,100.0	9,049.8	9,124.9	9,090.5	31.8	32.8	-99.16	367.9	-148.7	670.1	606.3	63.88	10.490	
9,125.0	9,067.2	9,155.6	9,119.0	31.8	32.9	-99.98	367.8	-137.0	671.9	608.0	63.98	10.502	
9,150.0	9,083.7	9,187.4	9,147.5	31.8	32.9	-100.78	367.7	-123.0	673.8	609.7	64.07	10.517	
9,175.0	9,099.1	9,220.3	9,176.0	31.9	33.0	-101.57	367.6	-106.5	675.7	611.6	64.14	10.536	
9,200.0	9,113.6	9,254.4	9,204.2	31.9	33.1	-102.34	367.6	-87.4	677.7	613.5	64.19	10.558	
9,225.0	9,126.9	9,289.6	9,231.9	32.0	33.2	-103.09	367.4	-65.7	679.6	615.4	64.22	10.583	
9,250.0	9,139.1	9,326.0	9,258.7	32.1	33.2	-103.80	367.3	-41.1	681.6	617.3	64.24	10.609	
9,275.0	9,150.2	9,363.6	9,284.4	32.1	33.3	-104.48	367.2	-13.6	683.4	619.1	64.25	10.636	
9,300.0	9,160.0	9,402.4	9,308.5	32.3	33.4	-105.10	367.0	16.8	685.1	620.9	64.27	10.661	
9,325.0	9,168.7	9,442.4	9,330.7	32.4	33.4	-105.67	366.9	50.0	686.7	622.4	64.30	10.681	
9,350.0	9,176.1	9,483.4	9,350.5	32.5	33.6	-106.18	366.7	85.9	688.1	623.8	64.35	10.694	
9,375.0	9,182.2	9,525.3	9,367.5	32.6	33.7	-106.60	366.5	124.2	689.4	624.9	64.44	10.698	
9,400.0	9,187.1	9,568.1	9,381.3	32.8	33.9	-106.94	366.3	164.6	690.3	625.7	64.58	10.689	
9,425.0	9,190.7	9,611.5	9,391.6	32.9	34.2	-107.19	366.1	206.8	691.0	626.2	64.79	10.665	
9,450.0	9,193.0	9,655.3	9,398.0	33.0	34.4	-107.33	365.9	250.1	691.4	626.4	65.08	10.625	
9,475.0	9,193.9	9,699.3	9,400.4	33.2	34.7	-107.38	365.7	294.1	691.5	626.1	65.44	10.568	
9,481.1	9,194.0	9,707.5	9,400.5	33.2	34.7	-107.37	365.7	302.2	691.5	626.0	65.52	10.554	
9,500.0	9,194.0	9,726.3	9,400.5	33.4	34.8	-107.37	365.6	321.1	691.5	625.8	65.76	10.516	
9,600.0	9,194.0	9,826.3	9,400.4	34.1	35.6	-107.37	365.1	421.1	691.5	624.4	67.15	10.298	
9,700.0	9,194.0	9,926.3	9,400.3	35.0	36.5	-107.36	364.6	521.1	691.5	622.7	68.83	10.047	
9,800.0	9,194.0	10,026.3	9,400.3	36.0	37.5	-107.36	364.1	621.1	691.5	620.7	70.77	9.771	
9,900.0	9,194.0	10,126.3	9,400.2	37.2	38.6	-107.35	363.6	721.1	691.5	618.5	72.96	9.478	
10,000.0	9,194.0	10,226.3	9,400.1	38.5	39.8	-107.35	363.1	821.1	691.4	616.1	75.37	9.174	
10,100.0	9,194.0	10,326.3	9,400.1	39.9	41.2	-107.34	362.6	921.1	691.4	613.4	77.98	8.867	
10,200.0	9,194.0	10,426.3	9,400.0	41.4	42.6	-107.34	362.1	1,021.1	691.4	610.6	80.77	8.560	
10,300.0	9,194.0	10,526.3	9,400.0	42.9	44.2	-107.33	361.7	1,121.1	691.4	607.7	83.73	8.257	
10,400.0	9,194.0	10,626.3	9,399.9	44.6	45.8	-107.33	361.2	1,221.1	691.4	604.5	86.84	7.961	
10,500.0	9,194.0	10,726.3	9,399.8	46.3	47.5	-107.32	360.7	1,321.1	691.4	601.3	90.08	7.675	
10,600.0	9,194.0	10,826.3	9,399.8	48.0	49.2	-107.32	360.2	1,421.1	691.3	597.9	93.44	7.399	
10,700.0	9,194.0	10,926.3	9,399.7	49.9	51.0	-107.31	359.7	1,521.1	691.3	594.4	96.90	7.134	
10,800.0	9,194.0	11,026.3	9,399.6	51.7	52.8	-107.31	359.2	1,621.1	691.3	590.8	100.47	6.881	
10,900.0	9,194.0	11,126.3	9,399.6	53.7	54.7	-107.30	358.7	1,721.1	691.3	587.2	104.11	6.640	
11,000.0	9,194.0	11,226.3	9,399.5	55.6	56.7	-107.30	358.2	1,821.1	691.3	583.4	107.84	6.410	
11,100.0	9,194.0	11,326.3	9,399.5	57.6	58.6	-107.29	357.8	1,921.1	691.2	579.6	111.63	6.192	
11,200.0	9,194.0	11,426.3	9,399.4	59.6	60.6	-107.29	357.3	2,021.1	691.2	575.7	115.48	5.985	
11,300.0	9,194.0	11,526.3	9,399.3	61.7	62.6	-107.28	356.8	2,121.1	691.2	571.8	119.40	5.789	
11,400.0	9,194.0	11,626.3	9,399.3	63.8	64.7	-107.28	356.3	2,221.1	691.2	567.8	123.36	5.603	
11,500.0	9,194.0	11,726.3	9,399.2	65.9	66.8	-107.27	355.8	2,321.1	691.2	563.8	127.37	5.426	
11,600.0	9,194.0	11,826.3	9,399.1	68.0	68.9	-107.27	355.3	2,421.1	691.1	559.7	131.42	5.259	
11,700.0	9,194.0	11,926.3	9,399.1	70.1	71.0	-107.26	354.8	2,521.1	691.1	555.6	135.51	5.100	
11,800.0	9,194.0	12,026.3	9,399.0	72.3	73.2	-107.26	354.3	2,621.1	691.1	551.5	139.64	4.949	
11,900.0	9,194.0	12,126.3	9,399.0	74.5	75.3	-107.25	353.9	2,721.1	691.1	547.3	143.80	4.806	
12,000.0	9,194.0	12,226.3	9,398.9	76.7	77.5	-107.25	353.4	2,821.0	691.1	543.1	147.98	4.670	
12,100.0	9,194.0	12,326.3	9,398.8	78.9	79.7	-107.24	352.9	2,921.0	691.1	538.9	152.20	4.540	
12,200.0	9,194.0	12,426.3	9,398.8	81.1	81.9	-107.24	352.4	3,021.0	691.0	534.6	156.44	4.417	
12,300.0	9,194.0	12,526.3	9,398.7	83.3	84.1	-107.23	351.9	3,121.0	691.0	530.3	160.70	4.300	
12,400.0	9,194.0	12,626.3	9,398.6	85.6	86.3	-107.23	351.4	3,221.0	691.0	526.0	164.98	4.188	
12,500.0	9,194.0	12,726.3	9,398.6	87.8	88.5	-107.22	350.9	3,321.0	691.0	521.7	169.29	4.082	
12,600.0	9,194.0	12,826.3	9,398.5	90.1	90.8	-107.22	350.4	3,421.0	691.0	517.4	173.61	3.980	
12,700.0	9,194.0	12,926.3	9,398.5	92.3	93.0	-107.21	349.9	3,521.0	690.9	513.0	177.94	3.883	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,800.0	9,194.0	13,026.3	9,398.4	94.6	95.3	-107.21	349.5	3,621.0	690.9	508.6	182.30	3.790	
12,900.0	9,194.0	13,126.3	9,398.3	96.9	97.6	-107.20	349.0	3,721.0	690.9	504.2	186.67	3.701	
13,000.0	9,194.0	13,226.3	9,398.3	99.2	99.9	-107.20	348.5	3,821.0	690.9	499.8	191.05	3.616	
13,100.0	9,194.0	13,326.3	9,398.2	101.5	102.1	-107.19	348.0	3,921.0	690.9	495.4	195.44	3.535	
13,200.0	9,194.0	13,426.3	9,398.1	103.8	104.4	-107.19	347.5	4,021.0	690.8	491.0	199.85	3.457	
13,300.0	9,194.0	13,526.3	9,398.1	106.1	106.7	-107.18	347.0	4,121.0	690.8	486.6	204.26	3.382	
13,400.0	9,194.0	13,626.3	9,398.0	108.4	109.0	-107.18	346.5	4,221.0	690.8	482.1	208.69	3.310	
13,500.0	9,194.0	13,726.3	9,398.0	110.7	111.3	-107.17	346.0	4,321.0	690.8	477.7	213.13	3.241	
13,600.0	9,194.0	13,826.3	9,397.9	113.0	113.6	-107.17	345.6	4,421.0	690.8	473.2	217.57	3.175	
13,700.0	9,194.0	13,926.3	9,397.8	115.3	116.0	-107.16	345.1	4,521.0	690.8	468.7	222.03	3.111	
13,800.0	9,194.0	14,026.3	9,397.8	117.7	118.3	-107.16	344.6	4,621.0	690.7	464.2	226.49	3.050	
13,900.0	9,194.0	14,126.3	9,397.7	120.0	120.6	-107.15	344.1	4,721.0	690.7	459.8	230.96	2.991	
14,000.0	9,194.0	14,226.3	9,397.6	122.3	122.9	-107.15	343.6	4,821.0	690.7	455.3	235.44	2.934	
14,100.0	9,194.0	14,326.3	9,397.6	124.7	125.3	-107.14	343.1	4,921.0	690.7	450.8	239.93	2.879	
14,200.0	9,194.0	14,426.3	9,397.5	127.0	127.6	-107.14	342.6	5,021.0	690.7	446.2	244.42	2.826	
14,300.0	9,194.0	14,526.3	9,397.5	129.4	129.9	-107.13	342.1	5,121.0	690.6	441.7	248.92	2.775	
14,400.0	9,194.0	14,626.3	9,397.4	131.7	132.3	-107.13	341.7	5,221.0	690.6	437.2	253.42	2.725	
14,500.0	9,194.0	14,726.3	9,397.3	134.1	134.6	-107.12	341.2	5,321.0	690.6	432.7	257.93	2.678	
14,600.0	9,194.0	14,826.3	9,397.3	136.4	137.0	-107.12	340.7	5,421.0	690.6	428.1	262.44	2.631	
14,700.0	9,194.0	14,926.3	9,397.2	138.8	139.3	-107.11	340.2	5,521.0	690.6	423.6	266.96	2.587	
14,800.0	9,194.0	15,026.3	9,397.1	141.1	141.7	-107.11	339.7	5,621.0	690.6	419.1	271.49	2.544	
14,900.0	9,194.0	15,126.3	9,397.1	143.5	144.0	-107.10	339.2	5,721.0	690.5	414.5	276.02	2.502	
15,000.0	9,194.0	15,226.3	9,397.0	145.8	146.4	-107.10	338.7	5,821.0	690.5	410.0	280.55	2.461	
15,100.0	9,194.0	15,326.3	9,397.0	148.2	148.7	-107.09	338.2	5,921.0	690.5	405.4	285.09	2.422	
15,200.0	9,194.0	15,426.3	9,396.9	150.6	151.1	-107.09	337.8	6,021.0	690.5	400.9	289.63	2.384	
15,300.0	9,194.0	15,526.3	9,396.8	152.9	153.4	-107.08	337.3	6,121.0	690.5	396.3	294.17	2.347	
15,400.0	9,194.0	15,626.3	9,396.8	155.3	155.8	-107.08	336.8	6,221.0	690.4	391.7	298.72	2.311	
15,500.0	9,194.0	15,726.3	9,396.7	157.7	158.2	-107.07	336.3	6,321.0	690.4	387.2	303.27	2.277	
15,600.0	9,194.0	15,826.3	9,396.6	160.0	160.5	-107.07	335.8	6,421.0	690.4	382.6	307.83	2.243	
15,700.0	9,194.0	15,926.3	9,396.6	162.4	162.9	-107.06	335.3	6,521.0	690.4	378.0	312.39	2.210	
15,800.0	9,194.0	16,026.3	9,396.5	164.8	165.3	-107.06	334.8	6,621.0	690.4	373.4	316.95	2.178	
15,900.0	9,194.0	16,126.3	9,396.5	167.2	167.6	-107.05	334.3	6,721.0	690.4	368.8	321.51	2.147	
16,000.0	9,194.0	16,226.3	9,396.4	169.5	170.0	-107.05	333.8	6,821.0	690.3	364.3	326.08	2.117	
16,100.0	9,194.0	16,326.3	9,396.3	171.9	172.4	-107.04	333.4	6,921.0	690.3	359.7	330.65	2.088	
16,200.0	9,194.0	16,426.3	9,396.3	174.3	174.8	-107.04	332.9	7,021.0	690.3	355.1	335.23	2.059	
16,300.0	9,194.0	16,526.3	9,396.2	176.7	177.1	-107.04	332.4	7,121.0	690.3	350.5	339.80	2.031	
16,400.0	9,194.0	16,626.3	9,396.1	179.1	179.5	-107.03	331.9	7,221.0	690.3	345.9	344.38	2.004	
16,500.0	9,194.0	16,726.3	9,396.1	181.4	181.9	-107.03	331.4	7,321.0	690.2	341.3	348.96	1.978	
16,600.0	9,194.0	16,826.3	9,396.0	183.8	184.3	-107.02	330.9	7,421.0	690.2	336.7	353.54	1.952	
16,700.0	9,194.0	16,926.3	9,396.0	186.2	186.7	-107.02	330.4	7,521.0	690.2	332.1	358.13	1.927	
16,800.0	9,194.0	17,026.3	9,395.9	188.6	189.0	-107.01	329.9	7,621.0	690.2	327.5	362.71	1.903	
16,900.0	9,194.0	17,126.3	9,395.8	191.0	191.4	-107.01	329.5	7,721.0	690.2	322.9	367.30	1.879	
17,000.0	9,194.0	17,226.3	9,395.8	193.4	193.8	-107.00	329.0	7,821.0	690.2	318.3	371.89	1.856	
17,100.0	9,194.0	17,326.3	9,395.7	195.8	196.2	-107.00	328.5	7,921.0	690.1	313.6	376.49	1.833	
17,200.0	9,194.0	17,426.3	9,395.6	198.1	198.6	-106.99	328.0	8,021.0	690.1	309.0	381.08	1.811	
17,300.0	9,194.0	17,526.3	9,395.6	200.5	201.0	-106.99	327.5	8,121.0	690.1	304.4	385.68	1.789	
17,400.0	9,194.0	17,626.3	9,395.5	202.9	203.4	-106.98	327.0	8,221.0	690.1	299.8	390.27	1.768	
17,500.0	9,194.0	17,726.3	9,395.5	205.3	205.7	-106.98	326.5	8,321.0	690.1	295.2	394.87	1.748	
17,600.0	9,194.0	17,826.3	9,395.4	207.7	208.1	-106.97	326.0	8,421.0	690.0	290.6	399.48	1.727	
17,700.0	9,194.0	17,926.3	9,395.3	210.1	210.5	-106.97	325.6	8,521.0	690.0	285.9	404.08	1.708	
17,800.0	9,194.0	18,026.3	9,395.3	212.5	212.9	-106.96	325.1	8,621.0	690.0	281.3	408.68	1.688	
17,900.0	9,194.0	18,126.3	9,395.2	214.9	215.3	-106.96	324.6	8,721.0	690.0	276.7	413.29	1.670	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35 FED 200H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,000.0	9,194.0	18,226.3	9,395.1	217.3	217.7	-106.95	324.1	8,821.0	690.0	272.1	417.90	1.651	
18,100.0	9,194.0	18,326.3	9,395.1	219.7	220.1	-106.95	323.6	8,921.0	690.0	267.4	422.51	1.633	
18,200.0	9,194.0	18,426.3	9,395.0	222.1	222.5	-106.94	323.1	9,021.0	689.9	262.8	427.12	1.615	
18,300.0	9,194.0	18,526.3	9,395.0	224.5	224.9	-106.94	322.6	9,121.0	689.9	258.2	431.73	1.598	
18,400.0	9,194.0	18,626.3	9,394.9	226.9	227.3	-106.93	322.1	9,221.0	689.9	253.6	436.34	1.581	
18,500.0	9,194.0	18,726.3	9,394.8	229.3	229.7	-106.93	321.6	9,321.0	689.9	248.9	440.96	1.565	
18,600.0	9,194.0	18,826.3	9,394.8	231.7	232.1	-106.92	321.2	9,421.0	689.9	244.3	445.57	1.548	
18,700.0	9,194.0	18,926.3	9,394.7	234.1	234.5	-106.92	320.7	9,521.0	689.8	239.7	450.19	1.532	
18,800.0	9,194.0	19,026.3	9,394.7	236.5	236.9	-106.91	320.2	9,621.0	689.8	235.0	454.80	1.517	
18,900.0	9,194.0	19,126.3	9,394.6	238.9	239.3	-106.91	319.7	9,721.0	689.8	230.4	459.42	1.501	
19,000.0	9,194.0	19,226.3	9,394.5	241.3	241.7	-106.90	319.2	9,821.0	689.8	225.7	464.04	1.486	Level 3
19,100.0	9,194.0	19,326.3	9,394.5	243.7	244.1	-106.90	318.7	9,921.0	689.8	221.1	468.67	1.472	Level 3
19,200.0	9,194.0	19,426.3	9,394.4	246.1	246.5	-106.89	318.2	10,021.0	689.8	216.5	473.29	1.457	Level 3
19,300.0	9,194.0	19,526.3	9,394.3	248.5	248.9	-106.89	317.7	10,121.0	689.7	211.8	477.91	1.443	Level 3
19,400.0	9,194.0	19,626.3	9,394.3	250.9	251.3	-106.88	317.3	10,221.0	689.7	207.2	482.53	1.429	Level 3
19,500.0	9,194.0	19,726.3	9,394.2	253.3	253.7	-106.88	316.8	10,321.0	689.7	202.5	487.16	1.416	Level 3
19,600.0	9,194.0	19,826.3	9,394.2	255.7	256.1	-106.87	316.3	10,421.0	689.7	197.9	491.79	1.402	Level 3
19,700.0	9,194.0	19,926.3	9,394.1	258.1	258.5	-106.87	315.8	10,521.0	689.7	193.2	496.41	1.389	Level 3
19,800.0	9,194.0	20,026.3	9,394.0	260.5	260.9	-106.86	315.3	10,621.0	689.6	188.6	501.04	1.376	Level 3
19,841.7	9,194.0	20,068.1	9,394.0	261.5	261.9	-106.86	315.1	10,662.7	689.6	186.7	502.97	1.371	Level 3
19,847.1	9,194.0	20,068.8	9,394.0	261.6	261.9	-106.86	315.1	10,663.4	689.6	186.5	503.10	1.371	Level 3, SF

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** Distance — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-179.88	-66.0	-0.1	66.0				
100.0	100.0	100.0	100.0	0.1	0.1	-179.88	-66.0	-0.1	66.0	65.7	0.25	263.022	
200.0	200.0	200.0	200.0	0.5	0.5	-179.88	-66.0	-0.1	66.0	65.0	0.97	68.191	
300.0	300.0	300.0	300.0	0.8	0.8	-179.88	-66.0	-0.1	66.0	64.3	1.68	39.173	
400.0	400.0	400.0	400.0	1.2	1.2	-179.88	-66.0	-0.1	66.0	63.6	2.40	27.480	
500.0	500.0	500.0	500.0	1.6	1.6	-179.88	-66.0	-0.1	66.0	62.9	3.12	21.163	
600.0	600.0	600.0	600.0	1.9	1.9	-179.88	-66.0	-0.1	66.0	62.2	3.84	17.207	
700.0	700.0	700.0	700.0	2.3	2.3	-179.88	-66.0	-0.1	66.0	61.4	4.55	14.497	
800.0	800.0	800.0	800.0	2.6	2.6	-179.88	-66.0	-0.1	66.0	60.7	5.27	12.525	
900.0	900.0	900.0	900.0	3.0	3.0	-179.88	-66.0	-0.1	66.0	60.0	5.99	11.025	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	-179.88	-66.0	-0.1	66.0	59.3	6.70	9.846	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	-179.88	-66.0	-0.1	66.0	58.6	7.42	8.894	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	-179.88	-66.0	-0.1	66.0	57.9	8.14	8.111	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	-179.88	-66.0	-0.1	66.0	57.1	8.85	7.454	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	-179.88	-66.0	-0.1	66.0	56.4	9.57	6.896	
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	-179.88	-66.0	-0.1	66.0	55.7	10.29	6.415	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	-179.88	-66.0	-0.1	66.0	55.0	11.01	5.997	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	-179.88	-66.0	-0.1	66.0	54.3	11.72	5.630	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	-179.88	-66.0	-0.1	66.0	53.6	12.44	5.306	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	-179.88	-66.0	-0.1	66.0	52.8	13.16	5.017	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	-179.88	-66.0	-0.1	66.0	52.1	13.87	4.758	
2,100.0	2,100.0	2,100.0	2,100.0	7.3	7.3	-179.88	-66.0	-0.1	66.0	51.4	14.59	4.524	
2,200.0	2,200.0	2,200.0	2,200.0	7.7	7.7	-179.88	-66.0	-0.1	66.0	50.7	15.31	4.312	
2,300.0	2,300.0	2,300.0	2,300.0	8.0	8.0	-179.88	-66.0	-0.1	66.0	50.0	16.02	4.119	
2,400.0	2,400.0	2,400.0	2,400.0	8.4	8.4	-179.88	-66.0	-0.1	66.0	49.3	16.74	3.943	
2,500.0	2,500.0	2,500.0	2,500.0	8.7	8.7	-179.88	-66.0	-0.1	66.0	48.5	17.46	3.781	
2,600.0	2,600.0	2,600.0	2,600.0	9.1	9.1	-179.88	-66.0	-0.1	66.0	47.8	18.17	3.631	
2,700.0	2,700.0	2,700.0	2,700.0	9.4	9.4	-179.88	-66.0	-0.1	66.0	47.1	18.89	3.494	
2,800.0	2,800.0	2,800.0	2,800.0	9.8	9.8	-179.88	-66.0	-0.1	66.0	46.4	19.61	3.366	
2,900.0	2,900.0	2,900.0	2,900.0	10.1	10.2	-32.15	-66.0	-0.1	64.5	44.2	20.31	3.177	
3,000.0	2,999.8	2,999.8	2,999.8	10.5	10.5	-34.85	-66.0	-0.1	60.1	39.2	20.99	2.865	
3,050.0	3,049.7	3,050.2	3,050.2	10.6	10.7	-37.15	-65.8	-0.2	56.8	35.4	21.34	2.660	
3,100.0	3,099.5	3,100.4	3,100.4	10.8	10.9	-39.98	-65.1	-0.3	52.7	31.0	21.68	2.430	
3,200.0	3,199.1	3,200.7	3,200.6	11.1	11.2	-47.28	-62.5	-0.8	43.7	21.4	22.36	1.955	
3,300.0	3,298.7	3,300.6	3,300.4	11.5	11.6	-58.83	-58.2	-1.5	34.1	11.1	23.04	1.481	Level 3
3,400.0	3,398.4	3,400.1	3,399.8	11.8	12.0	-80.00	-52.3	-2.6	25.5	1.7	23.73	1.074	Level 3
3,485.3	3,483.3	3,484.6	3,484.0	12.1	12.3	-110.59	-45.9	-3.8	22.1	-2.2	24.34	0.908	Level 3, CC, ES, SF
3,500.0	3,498.0	3,499.1	3,498.5	12.1	12.3	-116.65	-44.6	-4.0	22.2	-2.2	24.44	0.909	Level 3
3,600.0	3,597.6	3,597.6	3,596.5	12.5	12.7	-151.95	-35.4	-5.7	29.1	4.0	25.11	1.159	Level 3
3,700.0	3,697.2	3,695.5	3,693.8	12.8	13.0	-171.57	-24.5	-7.7	43.2	17.5	25.74	1.680	
3,800.0	3,796.8	3,792.8	3,790.3	13.2	13.4	177.96	-12.1	-9.9	61.1	34.8	26.36	2.319	
3,900.0	3,896.4	3,890.5	3,887.1	13.5	13.7	171.89	1.3	-12.3	81.0	53.9	27.03	2.995	
4,000.0	3,996.1	3,988.3	3,983.8	13.9	14.1	168.22	14.6	-14.8	101.3	73.6	27.71	3.655	
4,100.0	4,095.7	4,086.0	4,080.6	14.2	14.4	165.78	28.0	-17.2	121.9	93.5	28.40	4.293	
4,200.0	4,195.3	4,183.8	4,177.4	14.6	14.8	164.05	41.4	-19.6	142.6	113.6	29.08	4.904	
4,300.0	4,294.9	4,281.5	4,274.2	15.0	15.2	162.75	54.8	-22.1	163.5	133.7	29.78	5.490	
4,400.0	4,394.5	4,379.3	4,371.0	15.3	15.6	161.75	68.2	-24.5	184.4	153.9	30.47	6.051	
4,500.0	4,494.2	4,477.0	4,467.8	15.7	15.9	160.96	81.6	-26.9	205.3	174.2	31.17	6.588	
4,600.0	4,593.8	4,574.7	4,564.6	16.0	16.3	160.31	95.0	-29.3	226.3	194.5	31.87	7.102	
4,700.0	4,693.4	4,672.5	4,661.4	16.4	16.7	159.77	108.3	-31.8	247.3	214.8	32.57	7.595	
4,800.0	4,793.0	4,770.2	4,758.2	16.8	17.0	159.31	121.7	-34.2	268.4	235.1	33.27	8.066	
4,900.0	4,892.6	4,868.0	4,855.0	17.1	17.4	158.92	135.1	-36.6	289.4	255.4	33.97	8.519	

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,992.3	4,965.7	4,951.8	17.5	17.8	158.59	148.5	-39.0	310.4	275.8	34.68	8.953	
5,100.0	5,091.9	5,063.5	5,048.6	17.9	18.2	158.30	161.9	-41.5	331.5	296.1	35.38	9.369	
5,200.0	5,191.5	5,161.2	5,145.4	18.2	18.6	158.04	175.3	-43.9	352.6	316.5	36.09	9.770	
5,300.0	5,291.1	5,259.0	5,242.2	18.6	18.9	157.81	188.7	-46.3	373.6	336.8	36.79	10.155	
5,400.0	5,390.7	5,356.7	5,339.0	19.0	19.3	157.60	202.0	-48.8	394.7	357.2	37.50	10.525	
5,500.0	5,490.4	5,454.4	5,435.7	19.3	19.7	157.42	215.4	-51.2	415.8	377.6	38.21	10.881	
5,600.0	5,590.0	5,552.2	5,532.5	19.7	20.1	157.25	228.8	-53.6	436.9	398.0	38.92	11.225	
5,700.0	5,689.6	5,649.9	5,629.3	20.1	20.5	157.10	242.2	-56.0	458.0	418.3	39.63	11.555	
5,800.0	5,789.2	5,747.7	5,726.1	20.4	20.9	156.96	255.6	-58.5	479.0	438.7	40.34	11.874	
5,900.0	5,888.8	5,845.4	5,822.9	20.8	21.3	156.84	269.0	-60.9	500.1	459.1	41.05	12.182	
6,000.0	5,988.5	5,943.2	5,919.7	21.2	21.6	156.72	282.3	-63.3	521.2	479.5	41.77	12.479	
6,100.0	6,088.1	6,040.9	6,016.5	21.6	22.0	156.62	295.7	-65.8	542.3	499.8	42.48	12.767	
6,200.0	6,187.7	6,138.7	6,113.3	21.9	22.4	156.52	309.1	-68.2	563.4	520.2	43.19	13.044	
6,300.0	6,287.3	6,243.0	6,216.6	22.3	22.8	156.43	323.0	-70.7	584.2	540.2	43.98	13.283	
6,400.0	6,386.9	6,351.8	6,324.7	22.7	23.3	156.41	335.7	-73.0	603.3	558.5	44.80	13.466	
6,500.0	6,486.6	6,461.4	6,433.8	23.1	23.7	156.45	346.3	-74.9	620.6	575.0	45.61	13.606	
6,600.0	6,586.2	6,571.7	6,543.7	23.4	24.1	156.54	355.0	-76.5	636.2	589.8	46.42	13.706	
6,700.0	6,685.8	6,682.5	6,654.3	23.8	24.5	156.70	361.6	-77.7	649.9	602.7	47.21	13.767	
6,727.2	6,712.9	6,712.7	6,684.5	23.9	24.6	156.75	363.1	-78.0	653.3	605.9	47.42	13.777	
6,800.0	6,785.5	6,794.0	6,765.7	24.2	24.9	156.93	366.2	-78.5	661.0	613.0	47.99	13.774	
6,900.0	6,885.4	6,906.1	6,877.8	24.5	25.3	157.08	368.6	-79.0	667.1	618.4	48.75	13.685	
6,977.2	6,962.5	6,990.9	6,962.5	24.8	25.6	8.57	369.0	-79.0	668.5	619.1	49.32	13.554	
7,000.0	6,985.4	7,013.7	6,985.4	24.9	25.7	8.57	369.0	-79.0	668.5	619.0	49.48	13.511	
7,100.0	7,085.4	7,113.7	7,085.4	25.2	26.0	8.57	369.0	-79.0	668.5	618.3	50.17	13.323	
7,200.0	7,185.4	7,213.7	7,185.4	25.6	26.4	8.57	369.0	-79.0	668.5	617.6	50.87	13.140	
7,300.0	7,285.4	7,313.7	7,285.4	25.9	26.7	8.57	369.0	-79.0	668.5	616.9	51.57	12.962	
7,400.0	7,385.4	7,413.7	7,385.4	26.2	27.1	8.57	369.0	-79.0	668.5	616.2	52.27	12.789	
7,500.0	7,485.4	7,513.7	7,485.4	26.6	27.4	8.57	369.0	-79.0	668.5	615.5	52.97	12.620	
7,600.0	7,585.4	7,613.7	7,585.4	26.9	27.8	8.57	369.0	-79.0	668.5	614.8	53.67	12.456	
7,700.0	7,685.4	7,713.7	7,685.4	27.3	28.1	8.57	369.0	-79.0	668.5	614.1	54.37	12.295	
7,800.0	7,785.4	7,813.7	7,785.4	27.6	28.5	8.57	369.0	-79.0	668.5	613.4	55.07	12.139	
7,900.0	7,885.4	7,913.7	7,885.4	27.9	28.8	8.57	369.0	-79.0	668.5	612.7	55.77	11.986	
8,000.0	7,985.4	8,013.7	7,985.4	28.3	29.1	8.57	369.0	-79.0	668.5	612.0	56.47	11.837	
8,100.0	8,085.4	8,113.7	8,085.4	28.6	29.5	8.57	369.0	-79.0	668.5	611.3	57.17	11.692	
8,105.7	8,091.0	8,119.3	8,091.0	28.6	29.5	8.57	369.0	-79.0	668.5	611.2	57.21	11.684	
8,200.0	8,185.4	8,207.1	8,178.8	29.0	29.8	8.66	369.0	-77.9	668.6	610.8	57.85	11.559	
8,300.0	8,285.4	8,288.2	8,258.8	29.3	30.1	9.70	368.9	-65.6	671.0	612.6	58.44	11.483	
8,400.0	8,385.4	8,363.2	8,330.0	29.6	30.3	11.65	368.8	-42.4	677.0	618.1	58.91	11.491	
8,500.0	8,485.4	8,429.6	8,389.3	30.0	30.5	14.10	368.7	-12.7	687.9	628.7	59.18	11.623	
8,600.0	8,585.4	8,486.6	8,436.6	30.3	30.6	16.67	368.5	19.2	705.4	646.2	59.14	11.927	
8,700.0	8,685.4	8,534.9	8,473.4	30.7	30.7	19.13	368.4	50.4	730.4	671.7	58.71	12.440	
8,731.1	8,716.5	8,550.0	8,484.3	30.8	30.7	19.94	368.3	60.9	739.8	681.3	58.53	12.641	
8,750.0	8,735.4	8,556.2	8,488.6	30.8	30.7	-69.30	368.3	65.3	745.8	687.4	58.35	12.781	
8,775.0	8,760.3	8,566.8	8,495.9	30.9	30.8	-67.83	368.2	73.0	753.7	695.6	58.14	12.964	
8,800.0	8,785.1	8,575.0	8,501.5	31.0	30.8	-66.49	368.2	79.1	761.7	703.9	57.87	13.163	
8,825.0	8,809.8	8,588.1	8,510.1	31.1	30.8	-64.98	368.2	89.0	769.7	712.0	57.68	13.345	
8,850.0	8,834.1	8,600.0	8,517.7	31.2	30.8	-63.57	368.1	98.1	777.6	720.1	57.45	13.535	
8,875.0	8,858.2	8,609.8	8,523.7	31.2	30.8	-62.31	368.1	105.7	785.4	728.2	57.17	13.736	
8,900.0	8,881.9	8,625.0	8,532.9	31.3	30.9	-60.89	368.0	117.9	793.0	736.0	56.99	13.915	
8,925.0	8,905.1	8,631.6	8,536.7	31.4	30.9	-59.85	368.0	123.3	800.5	743.8	56.64	14.133	
8,950.0	8,927.8	8,642.6	8,542.9	31.4	30.9	-58.71	367.9	132.3	807.7	751.3	56.36	14.330	
8,975.0	8,949.9	8,650.0	8,547.0	31.5	30.9	-57.73	367.9	138.5	814.7	758.7	56.02	14.544	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,000.0	8,971.4	8,664.6	8,554.8	31.6	31.0	-56.61	367.8	150.9	821.5	765.7	55.82	14.718	
9,025.0	8,992.2	8,675.0	8,560.1	31.6	31.0	-55.67	367.8	159.9	828.0	772.4	55.53	14.909	
9,050.0	9,012.2	8,686.8	8,565.9	31.7	31.0	-54.77	367.7	170.2	834.1	778.8	55.28	15.088	
9,075.0	9,031.4	8,700.0	8,572.0	31.7	31.1	-53.90	367.7	181.8	839.9	784.9	55.06	15.254	
9,100.0	9,049.8	8,709.2	8,576.1	31.8	31.1	-53.18	367.6	190.0	845.4	790.6	54.78	15.433	
9,125.0	9,067.2	8,725.0	8,582.8	31.8	31.2	-52.40	367.6	204.4	850.5	795.9	54.63	15.569	
9,150.0	9,083.7	8,725.0	8,582.8	31.8	31.2	-51.94	367.6	204.4	855.3	801.1	54.21	15.776	
9,175.0	9,099.1	8,742.8	8,589.7	31.9	31.3	-51.27	367.5	220.8	859.5	805.4	54.13	15.879	
9,200.0	9,113.6	8,750.0	8,592.3	31.9	31.3	-50.81	367.5	227.5	863.4	809.5	53.88	16.025	
9,225.0	9,126.9	8,765.3	8,597.6	32.0	31.4	-50.31	367.4	241.9	866.9	813.1	53.79	16.116	
9,250.0	9,139.1	8,775.0	8,600.7	32.1	31.4	-49.94	367.3	251.1	869.9	816.3	53.63	16.220	
9,275.0	9,150.2	8,787.9	8,604.5	32.1	31.5	-49.60	367.3	263.3	872.5	818.9	53.55	16.293	
9,300.0	9,160.0	8,800.0	8,607.7	32.3	31.6	-49.32	367.2	275.0	874.6	821.1	53.48	16.353	
9,325.0	9,168.7	8,810.5	8,610.3	32.4	31.6	-49.12	367.2	285.2	876.3	822.8	53.42	16.403	
9,350.0	9,176.1	8,825.0	8,613.6	32.5	31.7	-48.96	367.1	299.3	877.5	824.0	53.44	16.418	
9,375.0	9,182.2	8,833.1	8,615.2	32.6	31.8	-48.88	367.1	307.2	878.2	824.8	53.42	16.439	
9,400.0	9,187.1	8,850.0	8,618.1	32.8	31.9	-48.84	367.0	323.9	878.5	824.9	53.53	16.410	
9,425.0	9,190.7	8,850.0	8,618.1	32.9	31.9	-48.86	367.0	323.9	878.3	824.8	53.50	16.417	
9,450.0	9,193.0	8,867.0	8,620.5	33.0	32.0	-48.96	366.9	340.7	877.5	823.9	53.68	16.348	
9,475.0	9,193.9	8,875.0	8,621.4	33.2	32.0	-49.09	366.9	348.7	876.4	822.6	53.81	16.287	
9,481.1	9,194.0	8,875.0	8,621.4	33.2	32.0	-49.12	366.9	348.7	876.1	822.2	53.83	16.275	
9,500.0	9,194.0	8,889.6	8,622.7	33.4	32.1	-49.18	366.8	363.2	875.0	821.0	54.03	16.196	
9,600.0	9,194.0	8,947.4	8,624.0	34.1	32.6	-49.25	366.5	421.1	873.1	818.2	54.93	15.897	
9,700.0	9,194.0	9,047.4	8,624.0	35.0	33.4	-49.24	366.0	521.0	873.1	816.9	56.25	15.523	
9,800.0	9,194.0	9,147.4	8,624.0	36.0	34.4	-49.24	365.5	621.0	873.1	815.3	57.78	15.110	
9,900.0	9,194.0	9,247.4	8,624.0	37.2	35.5	-49.24	365.0	721.0	873.1	813.6	59.53	14.668	
10,000.0	9,194.0	9,347.4	8,624.0	38.5	36.7	-49.24	364.5	821.0	873.1	811.6	61.45	14.207	
10,100.0	9,194.0	9,447.4	8,624.0	39.9	38.1	-49.24	364.0	921.0	873.1	809.5	63.55	13.738	
10,200.0	9,194.0	9,547.4	8,624.0	41.4	39.5	-49.24	363.5	1,021.0	873.1	807.3	65.81	13.267	
10,300.0	9,194.0	9,647.4	8,624.0	42.9	41.1	-49.24	363.0	1,121.0	873.1	804.9	68.20	12.801	
10,400.0	9,194.0	9,747.4	8,624.0	44.6	42.7	-49.24	362.5	1,221.0	873.0	802.3	70.72	12.345	
10,500.0	9,194.0	9,847.4	8,624.0	46.3	44.4	-49.24	362.0	1,321.0	873.0	799.7	73.35	11.902	
10,600.0	9,194.0	9,947.4	8,624.0	48.0	46.2	-49.24	361.5	1,421.0	873.0	796.9	76.08	11.475	
10,700.0	9,194.0	10,047.4	8,624.0	49.9	48.0	-49.24	361.0	1,521.0	873.0	794.1	78.90	11.065	
10,800.0	9,194.0	10,147.4	8,624.0	51.7	49.9	-49.24	360.5	1,621.0	873.0	791.2	81.80	10.672	
10,900.0	9,194.0	10,247.4	8,624.0	53.7	51.8	-49.24	360.0	1,721.0	873.0	788.2	84.78	10.298	
11,000.0	9,194.0	10,347.4	8,624.0	55.6	53.7	-49.24	359.5	1,821.0	873.0	785.2	87.81	9.941	
11,100.0	9,194.0	10,447.4	8,624.0	57.6	55.7	-49.24	359.0	1,921.0	873.0	782.1	90.91	9.603	
11,200.0	9,194.0	10,547.4	8,624.0	59.6	57.8	-49.24	358.5	2,021.0	873.0	778.9	94.06	9.281	
11,300.0	9,194.0	10,647.4	8,624.0	61.7	59.8	-49.24	358.0	2,121.0	873.0	775.7	97.26	8.976	
11,400.0	9,194.0	10,747.4	8,624.0	63.8	61.9	-49.23	357.5	2,221.0	872.9	772.4	100.50	8.686	
11,500.0	9,194.0	10,847.4	8,624.0	65.9	64.0	-49.23	357.0	2,321.0	872.9	769.2	103.78	8.412	
11,600.0	9,194.0	10,947.4	8,624.0	68.0	66.1	-49.23	356.5	2,421.0	872.9	765.8	107.09	8.151	
11,700.0	9,194.0	11,047.4	8,624.0	70.1	68.3	-49.23	356.0	2,521.0	872.9	762.5	110.44	7.904	
11,800.0	9,194.0	11,147.4	8,624.0	72.3	70.5	-49.23	355.5	2,621.0	872.9	759.1	113.81	7.670	
11,900.0	9,194.0	11,247.4	8,624.0	74.5	72.6	-49.23	355.0	2,721.0	872.9	755.7	117.22	7.447	
12,000.0	9,194.0	11,347.4	8,624.0	76.7	74.8	-49.23	354.4	2,821.0	872.9	752.2	120.64	7.235	
12,100.0	9,194.0	11,447.4	8,624.0	78.9	77.0	-49.23	353.9	2,921.0	872.9	748.8	124.09	7.034	
12,200.0	9,194.0	11,547.4	8,624.0	81.1	79.3	-49.23	353.4	3,021.0	872.9	745.3	127.57	6.842	
12,300.0	9,194.0	11,647.4	8,624.0	83.3	81.5	-49.23	352.9	3,121.0	872.9	741.8	131.05	6.660	
12,400.0	9,194.0	11,747.4	8,624.0	85.6	83.7	-49.23	352.4	3,221.0	872.8	738.3	134.56	6.487	
12,500.0	9,194.0	11,847.4	8,624.0	87.8	86.0	-49.23	351.9	3,321.0	872.8	734.7	138.09	6.321	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.0	9,194.0	11,947.4	8,624.0	90.1	88.3	-49.23	351.4	3,421.0	872.8	731.2	141.62	6.163	
12,700.0	9,194.0	12,047.4	8,624.0	92.3	90.5	-49.23	350.9	3,521.0	872.8	727.6	145.18	6.012	
12,800.0	9,194.0	12,147.4	8,624.0	94.6	92.8	-49.23	350.4	3,621.0	872.8	724.1	148.74	5.868	
12,900.0	9,194.0	12,247.4	8,624.0	96.9	95.1	-49.23	349.9	3,721.0	872.8	720.5	152.32	5.730	
13,000.0	9,194.0	12,347.4	8,624.0	99.2	97.4	-49.23	349.4	3,821.0	872.8	716.9	155.91	5.598	
13,100.0	9,194.0	12,447.4	8,624.0	101.5	99.7	-49.22	348.9	3,921.0	872.8	713.3	159.50	5.472	
13,200.0	9,194.0	12,547.4	8,624.0	103.8	102.0	-49.22	348.4	4,021.0	872.8	709.6	163.11	5.351	
13,300.0	9,194.0	12,647.4	8,624.0	106.1	104.3	-49.22	347.9	4,121.0	872.7	706.0	166.73	5.234	
13,400.0	9,194.0	12,747.4	8,624.0	108.4	106.6	-49.22	347.4	4,221.0	872.7	702.4	170.36	5.123	
13,500.0	9,194.0	12,847.4	8,624.0	110.7	108.9	-49.22	346.9	4,321.0	872.7	698.7	173.99	5.016	
13,600.0	9,194.0	12,947.4	8,624.0	113.0	111.3	-49.22	346.4	4,421.0	872.7	695.1	177.63	4.913	
13,700.0	9,194.0	13,047.4	8,624.0	115.3	113.6	-49.22	345.9	4,521.0	872.7	691.4	181.28	4.814	
13,800.0	9,194.0	13,147.4	8,624.0	117.7	115.9	-49.22	345.4	4,621.0	872.7	687.8	184.93	4.719	
13,900.0	9,194.0	13,247.4	8,624.0	120.0	118.2	-49.22	344.9	4,721.0	872.7	684.1	188.59	4.627	
14,000.0	9,194.0	13,347.4	8,624.0	122.3	120.6	-49.22	344.4	4,821.0	872.7	680.4	192.26	4.539	
14,100.0	9,194.0	13,447.4	8,624.0	124.7	122.9	-49.22	343.9	4,921.0	872.7	676.7	195.93	4.454	
14,200.0	9,194.0	13,547.4	8,624.0	127.0	125.3	-49.22	343.4	5,021.0	872.7	673.0	199.61	4.372	
14,300.0	9,194.0	13,647.4	8,624.0	129.4	127.6	-49.22	342.9	5,121.0	872.6	669.3	203.29	4.293	
14,400.0	9,194.0	13,747.4	8,624.0	131.7	130.0	-49.22	342.4	5,221.0	872.6	665.7	206.98	4.216	
14,500.0	9,194.0	13,847.4	8,624.0	134.1	132.3	-49.22	341.9	5,321.0	872.6	661.9	210.67	4.142	
14,600.0	9,194.0	13,947.4	8,624.0	136.4	134.7	-49.22	341.4	5,421.0	872.6	658.2	214.37	4.071	
14,700.0	9,194.0	14,047.4	8,624.0	138.8	137.0	-49.22	340.9	5,521.0	872.6	654.5	218.07	4.002	
14,800.0	9,194.0	14,147.4	8,624.0	141.1	139.4	-49.21	340.4	5,621.0	872.6	650.8	221.77	3.935	
14,900.0	9,194.0	14,247.4	8,624.0	143.5	141.8	-49.21	339.9	5,721.0	872.6	647.1	225.48	3.870	
15,000.0	9,194.0	14,347.4	8,624.0	145.8	144.1	-49.21	339.4	5,821.0	872.6	643.4	229.19	3.807	
15,100.0	9,194.0	14,447.4	8,624.0	148.2	146.5	-49.21	338.9	5,921.0	872.6	639.7	232.90	3.746	
15,200.0	9,194.0	14,547.4	8,624.0	150.6	148.9	-49.21	338.4	6,021.0	872.5	635.9	236.62	3.688	
15,300.0	9,194.0	14,647.4	8,624.0	152.9	151.2	-49.21	337.9	6,121.0	872.5	632.2	240.34	3.630	
15,400.0	9,194.0	14,747.4	8,624.0	155.3	153.6	-49.21	337.4	6,221.0	872.5	628.5	244.06	3.575	
15,500.0	9,194.0	14,847.4	8,624.0	157.7	156.0	-49.21	336.9	6,321.0	872.5	624.7	247.79	3.521	
15,600.0	9,194.0	14,947.4	8,624.0	160.0	158.3	-49.21	336.4	6,421.0	872.5	621.0	251.51	3.469	
15,700.0	9,194.0	15,047.4	8,624.0	162.4	160.7	-49.21	335.9	6,521.0	872.5	617.3	255.24	3.418	
15,800.0	9,194.0	15,147.4	8,624.0	164.8	163.1	-49.21	335.4	6,621.0	872.5	613.5	258.98	3.369	
15,900.0	9,194.0	15,247.4	8,624.0	167.2	165.5	-49.21	334.9	6,721.0	872.5	609.8	262.71	3.321	
16,000.0	9,194.0	15,347.4	8,624.0	169.5	167.8	-49.21	334.4	6,821.0	872.5	606.0	266.45	3.274	
16,100.0	9,194.0	15,447.4	8,624.0	171.9	170.2	-49.21	333.9	6,921.0	872.5	602.3	270.19	3.229	
16,200.0	9,194.0	15,547.4	8,624.0	174.3	172.6	-49.21	333.4	7,021.0	872.4	598.5	273.93	3.185	
16,300.0	9,194.0	15,647.4	8,624.0	176.7	175.0	-49.21	332.9	7,121.0	872.4	594.8	277.67	3.142	
16,400.0	9,194.0	15,747.4	8,624.0	179.1	177.4	-49.21	332.4	7,221.0	872.4	591.0	281.41	3.100	
16,500.0	9,194.0	15,847.4	8,624.0	181.4	179.8	-49.20	331.9	7,321.0	872.4	587.3	285.16	3.059	
16,600.0	9,194.0	15,947.4	8,624.0	183.8	182.1	-49.20	331.4	7,421.0	872.4	583.5	288.91	3.020	
16,700.0	9,194.0	16,047.4	8,624.0	186.2	184.5	-49.20	330.9	7,521.0	872.4	579.7	292.66	2.981	
16,800.0	9,194.0	16,147.4	8,624.0	188.6	186.9	-49.20	330.4	7,621.0	872.4	576.0	296.41	2.943	
16,900.0	9,194.0	16,247.4	8,624.0	191.0	189.3	-49.20	329.9	7,721.0	872.4	572.2	300.16	2.906	
17,000.0	9,194.0	16,347.4	8,624.0	193.4	191.7	-49.20	329.4	7,821.0	872.4	568.4	303.91	2.870	
17,100.0	9,194.0	16,447.4	8,624.0	195.8	194.1	-49.20	328.9	7,921.0	872.3	564.7	307.67	2.835	
17,200.0	9,194.0	16,547.4	8,624.0	198.1	196.5	-49.20	328.4	8,021.0	872.3	560.9	311.42	2.801	
17,300.0	9,194.0	16,647.4	8,624.0	200.5	198.9	-49.20	327.9	8,121.0	872.3	557.1	315.18	2.768	
17,400.0	9,194.0	16,747.4	8,624.0	202.9	201.3	-49.20	327.4	8,221.0	872.3	553.4	318.94	2.735	
17,500.0	9,194.0	16,847.4	8,624.0	205.3	203.7	-49.20	326.9	8,321.0	872.3	549.6	322.70	2.703	
17,600.0	9,194.0	16,947.4	8,624.0	207.7	206.0	-49.20	326.4	8,421.0	872.3	545.8	326.46	2.672	
17,700.0	9,194.0	17,047.4	8,624.0	210.1	208.4	-49.20	325.8	8,520.9	872.3	542.1	330.22	2.642	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 171H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	9,194.0	17,147.4	8,624.0	212.5	210.8	-49.20	325.3	8,620.9	872.3	538.3	333.99	2.612	
17,900.0	9,194.0	17,247.4	8,624.0	214.9	213.2	-49.20	324.8	8,720.9	872.3	534.5	337.75	2.583	
18,000.0	9,194.0	17,347.4	8,624.0	217.3	215.6	-49.20	324.3	8,820.9	872.3	530.7	341.52	2.554	
18,100.0	9,194.0	17,447.4	8,624.0	219.7	218.0	-49.20	323.8	8,920.9	872.2	527.0	345.28	2.526	
18,200.0	9,194.0	17,547.4	8,624.0	222.1	220.4	-49.19	323.3	9,020.9	872.2	523.2	349.05	2.499	
18,300.0	9,194.0	17,647.4	8,624.0	224.5	222.8	-49.19	322.8	9,120.9	872.2	519.4	352.82	2.472	
18,400.0	9,194.0	17,747.4	8,624.0	226.9	225.2	-49.19	322.3	9,220.9	872.2	515.6	356.59	2.446	
18,500.0	9,194.0	17,847.4	8,624.0	229.3	227.6	-49.19	321.8	9,320.9	872.2	511.8	360.36	2.420	
18,600.0	9,194.0	17,947.4	8,624.0	231.7	230.0	-49.19	321.3	9,420.9	872.2	508.1	364.13	2.395	
18,700.0	9,194.0	18,047.4	8,624.0	234.1	232.4	-49.19	320.8	9,520.9	872.2	504.3	367.90	2.371	
18,800.0	9,194.0	18,147.4	8,624.0	236.5	234.8	-49.19	320.3	9,620.9	872.2	500.5	371.67	2.347	
18,900.0	9,194.0	18,247.4	8,624.0	238.9	237.2	-49.19	319.8	9,720.9	872.2	496.7	375.44	2.323	
19,000.0	9,194.0	18,347.4	8,624.0	241.3	239.6	-49.19	319.3	9,820.9	872.2	492.9	379.21	2.300	
19,100.0	9,194.0	18,447.4	8,624.0	243.7	242.0	-49.19	318.8	9,920.9	872.1	489.2	382.99	2.277	
19,200.0	9,194.0	18,547.4	8,624.0	246.1	244.4	-49.19	318.3	10,020.9	872.1	485.4	386.76	2.255	
19,300.0	9,194.0	18,647.4	8,624.0	248.5	246.8	-49.19	317.8	10,120.9	872.1	481.6	390.54	2.233	
19,400.0	9,194.0	18,747.4	8,624.0	250.9	249.2	-49.19	317.3	10,220.9	872.1	477.8	394.31	2.212	
19,500.0	9,194.0	18,847.4	8,624.0	253.3	251.6	-49.19	316.8	10,320.9	872.1	474.0	398.09	2.191	
19,600.0	9,194.0	18,947.4	8,624.0	255.7	254.0	-49.19	316.3	10,420.9	872.1	470.2	401.87	2.170	
19,700.0	9,194.0	19,047.4	8,624.0	258.1	256.4	-49.19	315.8	10,520.9	872.1	466.4	405.64	2.150	
19,800.0	9,194.0	19,147.4	8,624.0	260.5	258.8	-49.18	315.3	10,620.9	872.1	462.6	409.42	2.130	
19,841.9	9,194.0	19,189.3	8,624.0	261.5	259.8	-49.18	315.1	10,662.8	872.1	461.1	411.00	2.122	
19,847.1	9,194.0	19,190.6	8,624.0	261.6	259.9	-49.18	315.1	10,664.1	872.1	460.9	411.13	2.121	

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** Distance — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-179.88	-33.0	-0.1	33.0				
100.0	100.0	100.0	100.0	0.1	0.1	-179.88	-33.0	-0.1	33.0	32.7	0.25	131.511	
200.0	200.0	200.0	200.0	0.5	0.5	-179.88	-33.0	-0.1	33.0	32.0	0.97	34.095	
300.0	300.0	300.0	300.0	0.8	0.8	-179.88	-33.0	-0.1	33.0	31.3	1.68	19.587	
400.0	400.0	400.0	400.0	1.2	1.2	-179.88	-33.0	-0.1	33.0	30.6	2.40	13.740	
500.0	500.0	500.0	500.0	1.6	1.6	-179.88	-33.0	-0.1	33.0	29.9	3.12	10.581	
600.0	600.0	600.0	600.0	1.9	1.9	-179.88	-33.0	-0.1	33.0	29.2	3.84	8.604	
700.0	700.0	700.0	700.0	2.3	2.3	-179.88	-33.0	-0.1	33.0	28.4	4.55	7.249	
800.0	800.0	800.0	800.0	2.6	2.6	-179.88	-33.0	-0.1	33.0	27.7	5.27	6.262	
900.0	900.0	900.0	900.0	3.0	3.0	-179.88	-33.0	-0.1	33.0	27.0	5.99	5.512	
1,000.0	1,000.0	1,000.0	1,000.0	3.4	3.4	-179.88	-33.0	-0.1	33.0	26.3	6.70	4.923	
1,100.0	1,100.0	1,100.0	1,100.0	3.7	3.7	-179.88	-33.0	-0.1	33.0	25.6	7.42	4.447	
1,200.0	1,200.0	1,200.0	1,200.0	4.1	4.1	-179.88	-33.0	-0.1	33.0	24.9	8.14	4.055	
1,300.0	1,300.0	1,300.0	1,300.0	4.4	4.4	-179.88	-33.0	-0.1	33.0	24.1	8.85	3.727	
1,400.0	1,400.0	1,400.0	1,400.0	4.8	4.8	-179.88	-33.0	-0.1	33.0	23.4	9.57	3.448	
1,500.0	1,500.0	1,500.0	1,500.0	5.1	5.1	-179.88	-33.0	-0.1	33.0	22.7	10.29	3.208	
1,600.0	1,600.0	1,600.0	1,600.0	5.5	5.5	-179.88	-33.0	-0.1	33.0	22.0	11.01	2.999	
1,700.0	1,700.0	1,700.0	1,700.0	5.9	5.9	-179.88	-33.0	-0.1	33.0	21.3	11.72	2.815	
1,800.0	1,800.0	1,800.0	1,800.0	6.2	6.2	-179.88	-33.0	-0.1	33.0	20.6	12.44	2.653	
1,900.0	1,900.0	1,900.0	1,900.0	6.6	6.6	-179.88	-33.0	-0.1	33.0	19.8	13.16	2.508	
2,000.0	2,000.0	2,000.0	2,000.0	6.9	6.9	-179.88	-33.0	-0.1	33.0	19.1	13.87	2.379	CC, ES
2,100.0	2,100.0	2,098.8	2,098.8	7.3	7.3	-179.28	-34.7	-0.4	34.7	20.1	14.56	2.382	
2,200.0	2,200.0	2,197.5	2,197.3	7.7	7.6	-177.80	-39.6	-1.5	39.8	24.5	15.22	2.613	
2,300.0	2,300.0	2,295.6	2,295.1	8.0	7.9	-176.03	-47.9	-3.3	48.3	32.4	15.86	3.042	
2,400.0	2,400.0	2,393.1	2,391.8	8.4	8.2	-174.40	-59.3	-5.8	60.1	43.7	16.48	3.649	
2,500.0	2,500.0	2,491.9	2,489.8	8.7	8.6	-173.14	-72.7	-8.7	74.0	56.8	17.16	4.310	
2,600.0	2,600.0	2,591.0	2,587.8	9.1	8.9	-172.28	-86.2	-11.7	87.8	70.0	17.85	4.921	
2,700.0	2,700.0	2,690.0	2,685.9	9.4	9.3	-171.65	-99.7	-14.6	101.7	83.2	18.54	5.487	
2,800.0	2,800.0	2,789.0	2,783.9	9.8	9.6	-171.17	-113.1	-17.6	115.6	96.4	19.23	6.011	
2,900.0	2,900.0	2,888.3	2,882.2	10.1	10.0	-22.45	-126.6	-20.5	127.9	108.0	19.91	6.424	
3,000.0	2,999.8	2,987.8	2,980.8	10.5	10.4	-22.88	-140.2	-23.5	137.0	116.4	20.58	6.657	
3,050.0	3,049.7	3,037.7	3,030.2	10.6	10.5	-23.29	-146.9	-25.0	140.3	119.4	20.92	6.710	
3,100.0	3,099.5	3,087.6	3,079.6	10.8	10.7	-23.77	-153.7	-26.4	143.3	122.1	21.25	6.743	
3,200.0	3,199.1	3,187.4	3,178.4	11.1	11.1	-24.68	-167.3	-29.4	149.3	127.3	21.93	6.805	
3,300.0	3,298.7	3,287.2	3,277.3	11.5	11.5	-25.52	-180.9	-32.4	155.2	132.6	22.62	6.864	
3,400.0	3,398.4	3,387.0	3,376.1	11.8	11.9	-26.30	-194.4	-35.3	161.2	137.9	23.30	6.920	
3,500.0	3,498.0	3,486.8	3,474.9	12.1	12.3	-27.02	-208.0	-38.3	167.3	143.3	23.99	6.972	
3,600.0	3,597.6	3,586.6	3,573.7	12.5	12.6	-27.69	-221.6	-41.3	173.4	148.7	24.69	7.022	
3,700.0	3,697.2	3,686.4	3,672.6	12.8	13.0	-28.32	-235.1	-44.2	179.4	154.1	25.38	7.069	
3,800.0	3,796.8	3,786.2	3,771.4	13.2	13.4	-28.91	-248.7	-47.2	185.6	159.5	26.08	7.113	
3,900.0	3,896.4	3,886.0	3,870.2	13.5	13.8	-29.45	-262.3	-50.1	191.7	164.9	26.79	7.155	
4,000.0	3,996.1	3,985.8	3,969.0	13.9	14.2	-29.97	-275.9	-53.1	197.8	170.3	27.49	7.195	
4,100.0	4,095.7	4,085.6	4,067.9	14.2	14.6	-30.45	-289.4	-56.1	204.0	175.8	28.20	7.233	
4,200.0	4,195.3	4,185.4	4,166.7	14.6	15.0	-30.91	-303.0	-59.0	210.1	181.2	28.91	7.269	
4,300.0	4,294.9	4,285.2	4,265.5	15.0	15.4	-31.33	-316.6	-62.0	216.3	186.7	29.62	7.303	
4,400.0	4,394.5	4,385.0	4,364.3	15.3	15.8	-31.74	-330.1	-65.0	222.5	192.2	30.34	7.336	
4,500.0	4,494.2	4,484.8	4,463.2	15.7	16.2	-32.12	-343.7	-67.9	228.7	197.7	31.05	7.366	
4,600.0	4,593.8	4,584.5	4,562.0	16.0	16.6	-32.48	-357.3	-70.9	234.9	203.2	31.77	7.396	
4,700.0	4,693.4	4,684.3	4,660.8	16.4	17.0	-32.83	-370.8	-73.9	241.2	208.7	32.49	7.424	
4,800.0	4,793.0	4,784.1	4,759.6	16.8	17.4	-33.16	-384.4	-76.8	247.4	214.2	33.21	7.450	
4,900.0	4,892.6	4,883.9	4,858.5	17.1	17.8	-33.47	-398.0	-79.8	253.6	219.7	33.93	7.476	
5,000.0	4,992.3	4,983.7	4,957.3	17.5	18.2	-33.76	-411.5	-82.7	259.9	225.2	34.65	7.500	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,091.9	5,083.5	5,056.1	17.9	18.7	-34.04	-425.1	-85.7	266.1	230.8	35.38	7.523	
5,200.0	5,191.5	5,183.3	5,154.9	18.2	19.1	-34.31	-438.7	-88.7	272.4	236.3	36.10	7.545	
5,300.0	5,291.1	5,283.1	5,253.8	18.6	19.5	-34.57	-452.2	-91.6	278.7	241.8	36.83	7.566	
5,400.0	5,390.7	5,382.9	5,352.6	19.0	19.9	-34.81	-465.8	-94.6	284.9	247.4	37.56	7.587	
5,500.0	5,490.4	5,482.7	5,451.4	19.3	20.3	-35.05	-479.4	-97.6	291.2	252.9	38.29	7.606	
5,600.0	5,590.0	5,582.5	5,550.2	19.7	20.7	-35.27	-493.0	-100.5	297.5	258.5	39.02	7.625	
5,700.0	5,689.6	5,682.3	5,649.1	20.1	21.1	-35.49	-506.5	-103.5	303.8	264.0	39.75	7.643	
5,800.0	5,789.2	5,782.1	5,747.9	20.4	21.5	-35.70	-520.1	-106.5	310.1	269.6	40.48	7.660	
5,900.0	5,888.8	5,881.9	5,846.7	20.8	21.9	-35.90	-533.7	-109.4	316.4	275.1	41.21	7.677	
6,000.0	5,988.5	5,981.7	5,945.5	21.2	22.3	-36.09	-547.2	-112.4	322.6	280.7	41.94	7.692	
6,100.0	6,088.1	6,081.5	6,044.4	21.6	22.8	-36.27	-560.8	-115.3	328.9	286.3	42.68	7.708	
6,200.0	6,187.7	6,181.3	6,143.2	21.9	23.2	-36.45	-574.4	-118.3	335.2	291.8	43.41	7.722	
6,300.0	6,287.3	6,281.1	6,242.0	22.3	23.6	-36.62	-587.9	-121.3	341.6	297.4	44.15	7.737	
6,400.0	6,386.9	6,380.9	6,340.8	22.7	24.0	-36.78	-601.5	-124.2	347.9	303.0	44.88	7.750	
6,500.0	6,486.6	6,480.7	6,439.7	23.1	24.4	-36.94	-615.1	-127.2	354.2	308.6	45.62	7.763	
6,600.0	6,586.2	6,580.5	6,538.5	23.4	24.8	-37.09	-628.6	-130.2	360.5	314.1	46.36	7.776	
6,700.0	6,685.8	6,680.3	6,637.3	23.8	25.2	-37.24	-642.2	-133.1	366.8	319.7	47.10	7.788	
6,727.2	6,712.9	6,707.4	6,664.2	23.9	25.4	-37.28	-645.9	-133.9	368.5	321.2	47.30	7.792	
6,800.0	6,785.5	6,780.0	6,736.1	24.2	25.7	-37.36	-655.8	-136.1	373.9	326.0	47.83	7.816	
6,900.0	6,885.4	6,879.5	6,834.6	24.5	26.1	-37.23	-669.3	-139.0	383.6	335.0	48.55	7.901	
6,977.2	6,962.5	6,956.1	6,910.4	24.8	26.4	174.51	-679.7	-141.3	393.0	343.9	49.09	8.005	
7,000.0	6,985.4	6,978.7	6,932.8	24.9	26.5	174.65	-682.8	-142.0	396.0	346.8	49.25	8.041	
7,100.0	7,085.4	7,077.7	7,030.9	25.2	26.9	175.24	-696.3	-144.9	409.3	359.4	49.94	8.196	
7,200.0	7,185.4	7,176.7	7,128.9	25.6	27.3	175.79	-709.7	-147.9	422.6	372.0	50.63	8.347	
7,300.0	7,285.4	7,275.8	7,227.0	25.9	27.7	176.31	-723.2	-150.8	436.0	384.7	51.33	8.495	
7,400.0	7,385.4	7,374.8	7,325.1	26.2	28.1	176.80	-736.6	-153.8	449.4	397.4	52.02	8.639	
7,500.0	7,485.4	7,473.8	7,423.1	26.6	28.6	177.26	-750.1	-156.7	462.8	410.1	52.72	8.779	
7,600.0	7,585.4	7,572.8	7,521.2	26.9	29.0	177.70	-763.6	-159.6	476.3	422.9	53.42	8.917	
7,700.0	7,685.4	7,671.9	7,619.3	27.3	29.4	178.11	-777.0	-162.6	489.8	435.7	54.12	9.051	
7,800.0	7,785.4	7,770.9	7,717.3	27.6	29.8	178.50	-790.5	-165.5	503.3	448.5	54.82	9.181	
7,900.0	7,885.4	7,869.9	7,815.4	27.9	30.2	178.86	-804.0	-168.5	516.8	461.3	55.52	9.309	
8,000.0	7,985.4	7,968.9	7,913.4	28.3	30.6	179.21	-817.4	-171.4	530.4	474.2	56.22	9.434	
8,100.0	8,085.4	8,084.9	8,028.5	28.6	31.1	179.57	-831.8	-174.5	542.8	485.7	57.06	9.513	
8,200.0	8,185.4	8,207.3	8,150.4	29.0	31.6	179.81	-842.1	-176.8	551.2	493.3	57.87	9.525	
8,300.0	8,285.4	8,330.5	8,273.5	29.3	32.0	179.93	-847.3	-177.9	555.5	496.9	58.60	9.478	
8,400.0	8,385.4	8,442.4	8,385.4	29.6	32.4	179.95	-848.0	-178.1	556.0	496.7	59.27	9.381	
8,500.0	8,485.4	8,542.4	8,485.4	30.0	32.7	179.95	-848.0	-178.1	556.0	496.1	59.94	9.275	
8,600.0	8,585.4	8,642.4	8,585.4	30.3	33.0	179.95	-848.0	-178.1	556.0	495.4	60.62	9.172	
8,700.0	8,685.4	8,742.4	8,685.4	30.7	33.3	179.95	-848.0	-178.1	556.0	494.7	61.30	9.070	
8,731.1	8,716.5	8,773.5	8,716.5	30.8	33.4	179.95	-848.0	-178.1	556.0	494.5	61.51	9.039	
8,750.0	8,735.4	8,792.4	8,735.4	30.8	33.4	89.70	-848.0	-178.1	556.0	494.4	61.64	9.021	
8,775.0	8,760.3	8,817.3	8,760.3	30.9	33.5	89.87	-848.0	-178.1	556.0	494.2	61.80	8.997	
8,786.8	8,772.0	8,829.1	8,772.0	31.0	33.5	90.00	-848.0	-178.1	556.0	494.1	61.87	8.986	
8,800.0	8,785.1	8,842.2	8,785.1	31.0	33.6	90.17	-848.0	-178.1	556.0	494.0	61.95	8.975	
8,825.0	8,809.8	8,866.8	8,809.8	31.1	33.6	90.60	-848.0	-178.1	556.0	493.9	62.10	8.953	
8,850.0	8,834.1	8,891.2	8,834.1	31.2	33.7	91.15	-848.0	-178.1	556.1	493.9	62.25	8.934	
8,875.0	8,858.2	8,915.2	8,858.2	31.2	33.8	91.80	-848.0	-178.1	556.3	493.9	62.39	8.917	
8,900.0	8,881.9	8,938.9	8,881.9	31.3	33.9	92.54	-848.0	-178.1	556.6	494.1	62.52	8.903	
8,925.0	8,905.1	8,962.1	8,905.1	31.4	33.9	93.36	-848.0	-178.1	557.1	494.5	62.65	8.892	
8,950.0	8,927.8	8,984.0	8,927.0	31.4	34.0	94.20	-848.0	-178.0	557.9	495.1	62.78	8.886	
8,975.0	8,949.9	9,005.2	8,948.1	31.5	34.1	94.99	-848.2	-177.0	559.0	496.1	62.91	8.885	
9,000.0	8,971.4	9,026.7	8,969.6	31.6	34.1	95.76	-848.5	-175.1	560.5	497.5	63.04	8.891	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,025.0	8,992.2	9,048.7	8,991.3	31.6	34.2	96.52	-848.9	-172.2	562.4	499.2	63.17	8.903	
9,050.0	9,012.2	9,071.0	9,013.3	31.7	34.3	97.26	-849.5	-168.3	564.6	501.3	63.29	8.921	
9,075.0	9,031.4	9,093.9	9,035.6	31.7	34.3	97.98	-850.3	-163.2	567.2	503.8	63.41	8.945	
9,100.0	9,049.8	9,117.2	9,058.0	31.8	34.4	98.67	-851.3	-156.9	570.2	506.6	63.53	8.975	
9,125.0	9,067.2	9,141.0	9,080.6	31.8	34.5	99.35	-852.5	-149.3	573.5	509.8	63.65	9.011	
9,150.0	9,083.7	9,165.5	9,103.3	31.8	34.6	100.00	-853.9	-140.5	577.2	513.4	63.76	9.053	
9,175.0	9,099.1	9,190.5	9,126.1	31.9	34.6	100.64	-855.5	-130.2	581.2	517.3	63.86	9.101	
9,200.0	9,113.6	9,216.3	9,148.9	31.9	34.7	101.25	-857.3	-118.4	585.5	521.5	63.95	9.155	
9,225.0	9,126.9	9,242.8	9,171.7	32.0	34.8	101.83	-859.4	-105.0	590.1	526.0	64.03	9.215	
9,250.0	9,139.1	9,270.1	9,194.3	32.1	34.8	102.40	-861.7	-90.0	595.0	530.9	64.10	9.281	
9,275.0	9,150.2	9,298.2	9,216.7	32.1	34.9	102.94	-864.3	-73.1	600.1	535.9	64.16	9.354	
9,300.0	9,160.0	9,327.3	9,238.8	32.3	34.9	103.45	-867.3	-54.4	605.4	541.3	64.19	9.431	
9,325.0	9,168.7	9,357.3	9,260.3	32.4	35.0	103.94	-870.5	-33.7	611.0	546.8	64.22	9.515	
9,350.0	9,176.1	9,388.4	9,281.1	32.5	35.1	104.40	-874.0	-10.9	616.7	552.5	64.22	9.602	
9,375.0	9,182.2	9,420.7	9,301.1	32.6	35.1	104.83	-877.9	14.1	622.5	558.3	64.22	9.694	
9,400.0	9,187.1	9,454.1	9,320.0	32.8	35.2	105.23	-882.2	41.4	628.4	564.2	64.20	9.788	
9,425.0	9,190.7	9,488.9	9,337.4	32.9	35.2	105.59	-886.8	71.1	634.3	570.2	64.19	9.882	
9,450.0	9,193.0	9,524.9	9,353.2	33.0	35.3	105.90	-891.8	103.0	640.3	576.1	64.19	9.974	
9,475.0	9,193.9	9,562.2	9,367.0	33.2	35.4	106.17	-897.1	137.4	646.1	581.9	64.21	10.063	
9,481.1	9,194.0	9,571.6	9,370.0	33.2	35.4	106.23	-898.5	146.1	647.5	583.3	64.22	10.084	
9,500.0	9,194.0	9,601.1	9,378.4	33.4	35.5	106.84	-902.8	174.1	651.8	587.5	64.27	10.141	
9,600.0	9,194.0	9,757.2	9,394.0	34.1	36.0	107.56	-926.4	327.0	668.6	603.2	65.46	10.214	
9,700.0	9,194.0	9,885.3	9,394.0	35.0	36.9	107.18	-941.8	454.2	679.6	612.4	67.26	10.104	
9,800.0	9,194.0	10,014.5	9,394.0	36.0	38.0	106.96	-951.6	583.0	686.4	617.0	69.35	9.897	
9,900.0	9,194.0	10,144.3	9,394.0	37.2	39.3	106.88	-955.5	712.7	688.8	617.1	71.66	9.611	
10,000.0	9,194.0	10,246.0	9,394.0	38.5	40.5	106.88	-956.0	814.5	688.8	614.7	74.08	9.298	
10,100.0	9,194.0	10,346.0	9,394.0	39.9	41.8	106.88	-956.5	914.5	688.8	612.1	76.69	8.982	
10,200.0	9,194.0	10,446.0	9,394.0	41.4	43.2	106.88	-957.0	1,014.4	688.8	609.3	79.49	8.666	
10,300.0	9,194.0	10,546.0	9,394.0	42.9	44.7	106.88	-957.5	1,114.4	688.8	606.4	82.45	8.354	
10,400.0	9,194.0	10,646.0	9,394.0	44.6	46.2	106.88	-958.0	1,214.4	688.9	603.3	85.57	8.050	
10,500.0	9,194.0	10,746.0	9,394.0	46.3	47.9	106.88	-958.5	1,314.4	688.9	600.0	88.82	7.756	
10,600.0	9,194.0	10,846.0	9,394.0	48.0	49.6	106.88	-959.0	1,414.4	688.9	596.7	92.19	7.472	
10,700.0	9,194.0	10,946.0	9,394.0	49.9	51.4	106.88	-959.5	1,514.4	688.9	593.2	95.67	7.200	
10,800.0	9,194.0	11,046.0	9,394.0	51.7	53.2	106.88	-960.0	1,614.4	688.9	589.6	99.25	6.941	
10,900.0	9,194.0	11,146.0	9,394.0	53.7	55.0	106.88	-960.5	1,714.4	688.9	586.0	102.91	6.694	
11,000.0	9,194.0	11,246.0	9,394.0	55.6	56.9	106.88	-961.0	1,814.4	688.9	582.2	106.66	6.459	
11,100.0	9,194.0	11,346.0	9,394.0	57.6	58.9	106.88	-961.5	1,914.4	688.9	578.4	110.47	6.236	
11,200.0	9,194.0	11,446.0	9,394.0	59.6	60.9	106.88	-962.0	2,014.4	688.9	574.6	114.34	6.025	
11,300.0	9,194.0	11,546.0	9,394.0	61.7	62.9	106.88	-962.5	2,114.4	688.9	570.7	118.27	5.825	
11,400.0	9,194.0	11,646.0	9,394.0	63.8	64.9	106.88	-962.9	2,214.4	688.9	566.7	122.26	5.635	
11,500.0	9,194.0	11,746.0	9,394.0	65.9	67.0	106.88	-963.4	2,314.4	688.9	562.7	126.28	5.455	
11,600.0	9,194.0	11,846.0	9,394.0	68.0	69.1	106.88	-963.9	2,414.4	688.9	558.6	130.36	5.285	
11,700.0	9,194.0	11,946.0	9,394.0	70.1	71.2	106.88	-964.4	2,514.4	689.0	554.5	134.46	5.124	
11,800.0	9,194.0	12,046.0	9,394.0	72.3	73.3	106.88	-964.9	2,614.4	689.0	550.4	138.61	4.971	
11,900.0	9,194.0	12,146.0	9,394.0	74.5	75.5	106.88	-965.4	2,714.4	689.0	546.2	142.78	4.825	
12,000.0	9,194.0	12,246.0	9,394.0	76.7	77.6	106.87	-965.9	2,814.4	689.0	542.0	146.99	4.687	
12,100.0	9,194.0	12,346.0	9,394.0	78.9	79.8	106.87	-966.4	2,914.4	689.0	537.8	151.22	4.556	
12,200.0	9,194.0	12,446.0	9,394.0	81.1	82.0	106.87	-966.9	3,014.4	689.0	533.5	155.48	4.432	
12,300.0	9,194.0	12,546.0	9,394.0	83.3	84.2	106.87	-967.4	3,114.4	689.0	529.3	159.76	4.313	
12,400.0	9,194.0	12,646.0	9,394.0	85.6	86.4	106.87	-967.9	3,214.4	689.0	525.0	164.05	4.200	
12,500.0	9,194.0	12,746.0	9,394.0	87.8	88.6	106.87	-968.4	3,314.4	689.0	520.7	168.37	4.092	
12,600.0	9,194.0	12,846.0	9,394.0	90.1	90.9	106.87	-968.9	3,414.4	689.0	516.3	172.71	3.990	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	9,194.0	12,946.0	9,394.0	92.3	93.1	106.87	-969.4	3,514.4	689.0	512.0	177.06	3.892	
12,800.0	9,194.0	13,046.0	9,394.0	94.6	95.4	106.87	-969.9	3,614.4	689.0	507.6	181.43	3.798	
12,900.0	9,194.0	13,146.0	9,394.0	96.9	97.6	106.87	-970.4	3,714.4	689.1	503.2	185.81	3.708	
13,000.0	9,194.0	13,246.0	9,394.0	99.2	99.9	106.87	-970.9	3,814.4	689.1	498.9	190.21	3.623	
13,100.0	9,194.0	13,346.0	9,394.0	101.5	102.2	106.87	-971.4	3,914.4	689.1	494.5	194.62	3.541	
13,200.0	9,194.0	13,446.0	9,394.0	103.8	104.5	106.87	-971.9	4,014.4	689.1	490.0	199.04	3.462	
13,300.0	9,194.0	13,546.0	9,394.0	106.1	106.7	106.87	-972.4	4,114.4	689.1	485.6	203.47	3.387	
13,400.0	9,194.0	13,646.0	9,394.0	108.4	109.0	106.87	-972.9	4,214.4	689.1	481.2	207.91	3.314	
13,500.0	9,194.0	13,746.0	9,394.0	110.7	111.3	106.87	-973.4	4,314.4	689.1	476.8	212.35	3.245	
13,600.0	9,194.0	13,846.0	9,394.0	113.0	113.6	106.87	-973.9	4,414.4	689.1	472.3	216.81	3.178	
13,700.0	9,194.0	13,946.0	9,394.0	115.3	116.0	106.87	-974.4	4,514.4	689.1	467.8	221.28	3.114	
13,800.0	9,194.0	14,046.0	9,394.0	117.7	118.3	106.87	-974.9	4,614.4	689.1	463.4	225.75	3.053	
13,900.0	9,194.0	14,146.0	9,394.0	120.0	120.6	106.87	-975.4	4,714.4	689.1	458.9	230.24	2.993	
14,000.0	9,194.0	14,246.0	9,394.0	122.3	122.9	106.87	-975.9	4,814.4	689.1	454.4	234.73	2.936	
14,100.0	9,194.0	14,346.0	9,394.0	124.7	125.2	106.87	-976.4	4,914.4	689.2	449.9	239.22	2.881	
14,200.0	9,194.0	14,446.0	9,394.0	127.0	127.6	106.87	-976.9	5,014.4	689.2	445.4	243.72	2.828	
14,300.0	9,194.0	14,546.0	9,394.0	129.4	129.9	106.87	-977.4	5,114.4	689.2	440.9	248.23	2.776	
14,400.0	9,194.0	14,646.0	9,394.0	131.7	132.2	106.87	-977.8	5,214.4	689.2	436.4	252.74	2.727	
14,500.0	9,194.0	14,746.0	9,394.0	134.1	134.6	106.87	-978.3	5,314.4	689.2	431.9	257.26	2.679	
14,600.0	9,194.0	14,846.0	9,394.0	136.4	136.9	106.87	-978.8	5,414.4	689.2	427.4	261.78	2.633	
14,700.0	9,194.0	14,946.0	9,394.0	138.8	139.3	106.87	-979.3	5,514.4	689.2	422.9	266.31	2.588	
14,800.0	9,194.0	15,046.0	9,394.0	141.1	141.6	106.87	-979.8	5,614.4	689.2	418.4	270.84	2.545	
14,900.0	9,194.0	15,146.0	9,394.0	143.5	144.0	106.87	-980.3	5,714.4	689.2	413.8	275.38	2.503	
15,000.0	9,194.0	15,246.0	9,394.0	145.8	146.3	106.87	-980.8	5,814.4	689.2	409.3	279.92	2.462	
15,100.0	9,194.0	15,346.0	9,394.0	148.2	148.7	106.87	-981.3	5,914.4	689.2	404.8	284.47	2.423	
15,200.0	9,194.0	15,446.0	9,394.0	150.6	151.0	106.87	-981.8	6,014.4	689.2	400.2	289.01	2.385	
15,300.0	9,194.0	15,546.0	9,394.0	152.9	153.4	106.87	-982.3	6,114.4	689.3	395.7	293.57	2.348	
15,400.0	9,194.0	15,646.0	9,394.0	155.3	155.7	106.87	-982.8	6,214.4	689.3	391.1	298.12	2.312	
15,500.0	9,194.0	15,746.0	9,394.0	157.7	158.1	106.87	-983.3	6,314.4	689.3	386.6	302.68	2.277	
15,600.0	9,194.0	15,846.0	9,394.0	160.0	160.5	106.87	-983.8	6,414.4	689.3	382.0	307.24	2.243	
15,700.0	9,194.0	15,946.0	9,394.0	162.4	162.8	106.87	-984.3	6,514.4	689.3	377.5	311.81	2.211	
15,800.0	9,194.0	16,046.0	9,394.0	164.8	165.2	106.87	-984.8	6,614.4	689.3	372.9	316.37	2.179	
15,900.0	9,194.0	16,146.0	9,394.0	167.2	167.6	106.87	-985.3	6,714.4	689.3	368.4	320.94	2.148	
16,000.0	9,194.0	16,246.0	9,394.0	169.5	169.9	106.87	-985.8	6,814.4	689.3	363.8	325.51	2.118	
16,100.0	9,194.0	16,346.0	9,394.0	171.9	172.3	106.87	-986.3	6,914.4	689.3	359.2	330.09	2.088	
16,200.0	9,194.0	16,446.0	9,394.0	174.3	174.7	106.87	-986.8	7,014.4	689.3	354.7	334.67	2.060	
16,300.0	9,194.0	16,546.0	9,394.0	176.7	177.1	106.87	-987.3	7,114.4	689.3	350.1	339.25	2.032	
16,400.0	9,194.0	16,646.0	9,394.0	179.1	179.4	106.87	-987.8	7,214.4	689.3	345.5	343.83	2.005	
16,500.0	9,194.0	16,746.0	9,394.0	181.4	181.8	106.87	-988.3	7,314.4	689.4	340.9	348.41	1.979	
16,600.0	9,194.0	16,846.0	9,394.0	183.8	184.2	106.87	-988.8	7,414.4	689.4	336.4	353.00	1.953	
16,700.0	9,194.0	16,946.0	9,394.0	186.2	186.6	106.87	-989.3	7,514.4	689.4	331.8	357.58	1.928	
16,800.0	9,194.0	17,046.0	9,394.0	188.6	188.9	106.86	-989.8	7,614.4	689.4	327.2	362.17	1.903	
16,900.0	9,194.0	17,146.0	9,394.0	191.0	191.3	106.86	-990.3	7,714.4	689.4	322.6	366.77	1.880	
17,000.0	9,194.0	17,246.0	9,394.0	193.4	193.7	106.86	-990.8	7,814.4	689.4	318.0	371.36	1.856	
17,100.0	9,194.0	17,346.0	9,394.0	195.8	196.1	106.86	-991.3	7,914.4	689.4	313.5	375.95	1.834	
17,200.0	9,194.0	17,446.0	9,394.0	198.1	198.5	106.86	-991.8	8,014.4	689.4	308.9	380.55	1.812	
17,300.0	9,194.0	17,546.0	9,394.0	200.5	200.9	106.86	-992.2	8,114.4	689.4	304.3	385.15	1.790	
17,400.0	9,194.0	17,646.0	9,394.0	202.9	203.2	106.86	-992.7	8,214.4	689.4	299.7	389.75	1.769	
17,500.0	9,194.0	17,746.0	9,394.0	205.3	205.6	106.86	-993.2	8,314.4	689.4	295.1	394.35	1.748	
17,600.0	9,194.0	17,846.0	9,394.0	207.7	208.0	106.86	-993.7	8,414.4	689.4	290.5	398.95	1.728	
17,700.0	9,194.0	17,946.0	9,394.0	210.1	210.4	106.86	-994.2	8,514.4	689.5	285.9	403.55	1.708	
17,800.0	9,194.0	18,046.0	9,394.0	212.5	212.8	106.86	-994.7	8,614.4	689.5	281.3	408.16	1.689	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - IRONHORSE 35-36 FED 201H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	9,194.0	18,146.0	9,394.0	214.9	215.2	106.86	-995.2	8,714.4	689.5	276.7	412.76	1.670	
18,000.0	9,194.0	18,246.0	9,394.0	217.3	217.6	106.86	-995.7	8,814.4	689.5	272.1	417.37	1.652	
18,100.0	9,194.0	18,346.0	9,394.0	219.7	220.0	106.86	-996.2	8,914.4	689.5	267.5	421.98	1.634	
18,200.0	9,194.0	18,446.0	9,394.0	222.1	222.4	106.86	-996.7	9,014.4	689.5	262.9	426.59	1.616	
18,300.0	9,194.0	18,546.0	9,394.0	224.5	224.8	106.86	-997.2	9,114.3	689.5	258.3	431.20	1.599	
18,400.0	9,194.0	18,646.0	9,394.0	226.9	227.1	106.86	-997.7	9,214.3	689.5	253.7	435.81	1.582	
18,500.0	9,194.0	18,746.0	9,394.0	229.3	229.5	106.86	-998.2	9,314.3	689.5	249.1	440.43	1.566	
18,600.0	9,194.0	18,846.0	9,394.0	231.7	231.9	106.86	-998.7	9,414.3	689.5	244.5	445.04	1.549	
18,700.0	9,194.0	18,946.0	9,394.0	234.1	234.3	106.86	-999.2	9,514.3	689.5	239.9	449.65	1.533	
18,800.0	9,194.0	19,046.0	9,394.0	236.5	236.7	106.86	-999.7	9,614.3	689.5	235.3	454.27	1.518	
18,900.0	9,194.0	19,146.0	9,394.0	238.9	239.1	106.86	-1,000.2	9,714.3	689.6	230.7	458.89	1.503	
19,000.0	9,194.0	19,246.0	9,394.0	241.3	241.5	106.86	-1,000.7	9,814.3	689.6	226.1	463.50	1.488	Level 3
19,100.0	9,194.0	19,346.0	9,394.0	243.7	243.9	106.86	-1,001.2	9,914.3	689.6	221.4	468.12	1.473	Level 3
19,200.0	9,194.0	19,446.0	9,394.0	246.1	246.3	106.86	-1,001.7	10,014.3	689.6	216.8	472.74	1.459	Level 3
19,300.0	9,194.0	19,546.0	9,394.0	248.5	248.7	106.86	-1,002.2	10,114.3	689.6	212.2	477.36	1.445	Level 3
19,400.0	9,194.0	19,646.0	9,394.0	250.9	251.1	106.86	-1,002.7	10,214.3	689.6	207.6	481.98	1.431	Level 3
19,500.0	9,194.0	19,746.0	9,394.0	253.3	253.5	106.86	-1,003.2	10,314.3	689.6	203.0	486.60	1.417	Level 3
19,600.0	9,194.0	19,846.0	9,394.0	255.7	255.9	106.86	-1,003.7	10,414.3	689.6	198.4	491.23	1.404	Level 3
19,700.0	9,194.0	19,946.0	9,394.0	258.1	258.3	106.86	-1,004.2	10,514.3	689.6	193.8	495.85	1.391	Level 3
19,800.0	9,194.0	20,046.0	9,394.0	260.5	260.7	106.86	-1,004.7	10,614.3	689.6	189.2	500.47	1.378	Level 3
19,847.1	9,194.0	20,093.1	9,394.0	261.6	261.8	106.86	-1,004.9	10,661.4	689.6	187.0	502.65	1.372	Level 3, SF

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Osage 34 Fed #1H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 100-MWD+IFR1 — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-8.24	906.1	-131.1	915.7				
100.0	100.0	85.1	85.1	0.1	0.1	-8.23	906.0	-131.1	915.4	915.2	0.25	3,652.055	
200.0	200.0	189.6	189.6	0.5	0.5	-8.20	905.6	-130.5	914.9	914.0	0.95	960.926	
300.0	300.0	289.8	289.8	0.8	0.8	-8.11	905.0	-129.0	914.2	912.5	1.67	547.877	
400.0	400.0	391.0	391.0	1.2	1.2	-7.99	904.5	-127.0	913.4	911.0	2.39	382.302	
500.0	500.0	489.8	489.7	1.6	1.5	-7.87	903.9	-125.0	912.6	909.5	3.10	294.246	
600.0	600.0	586.1	586.0	1.9	1.9	-7.75	903.7	-123.0	912.0	908.2	3.80	239.730	
668.6	668.6	651.7	651.6	2.2	2.1	-7.68	903.7	-121.8	911.9	907.6	4.28	212.846	
700.0	700.0	681.7	681.6	2.3	2.2	-7.64	903.8	-121.3	911.9	907.4	4.50	202.485	
800.0	800.0	781.0	780.9	2.6	2.6	-7.52	904.3	-119.4	912.2	906.9	5.22	174.871	
900.0	900.0	881.1	881.0	3.0	2.9	-7.40	904.8	-117.5	912.4	906.5	5.93	153.814	
1,000.0	1,000.0	981.6	981.5	3.4	3.3	-7.27	905.3	-115.4	912.6	905.9	6.65	137.241	
1,100.0	1,100.0	1,083.5	1,083.3	3.7	3.7	-7.13	905.6	-113.2	912.7	905.3	7.37	123.791	
1,200.0	1,200.0	1,185.5	1,185.3	4.1	4.0	-6.98	905.7	-111.0	912.5	904.4	8.10	112.704	
1,300.0	1,300.0	1,287.8	1,287.6	4.4	4.4	-6.85	905.6	-108.7	912.1	903.3	8.82	103.393	
1,400.0	1,400.0	1,387.6	1,387.4	4.8	4.8	-6.73	905.3	-106.9	911.6	902.1	9.54	95.574	
1,500.0	1,500.0	1,483.8	1,483.5	5.1	5.1	-6.64	905.2	-105.3	911.3	901.1	10.24	88.985	
1,600.0	1,600.0	1,585.2	1,584.9	5.5	5.5	-6.54	905.3	-103.8	911.3	900.3	10.96	83.118	
1,700.0	1,700.0	1,686.8	1,686.5	5.9	5.8	-6.46	905.2	-102.4	911.0	899.3	11.69	77.953	
1,800.0	1,800.0	1,789.0	1,788.7	6.2	6.2	-6.38	904.8	-101.2	910.5	898.1	12.41	73.364	
1,900.0	1,900.0	1,888.9	1,888.6	6.6	6.6	-6.32	904.3	-100.2	909.8	896.7	13.13	69.320	
2,000.0	2,000.0	1,987.6	1,987.3	6.9	6.9	-6.30	903.8	-99.8	909.3	895.5	13.83	65.763	
2,100.0	2,100.0	2,088.6	2,088.3	7.3	7.2	-6.33	903.2	-100.2	908.8	894.2	14.53	62.565	
2,200.0	2,200.0	2,190.8	2,190.5	7.7	7.6	-6.39	902.4	-101.0	908.1	892.8	15.22	59.645	
2,300.0	2,300.0	2,291.6	2,291.3	8.0	7.9	-6.45	901.4	-102.0	907.2	891.3	15.92	56.978	
2,400.0	2,400.0	2,395.0	2,394.7	8.4	8.3	-6.50	900.2	-102.6	906.1	889.5	16.63	54.478	
2,500.0	2,500.0	2,494.3	2,494.0	8.7	8.6	-6.56	898.8	-103.4	904.8	887.5	17.33	52.208	
2,600.0	2,600.0	2,594.5	2,594.1	9.1	9.0	-6.64	897.5	-104.5	903.6	885.6	18.03	50.110	
2,700.0	2,700.0	2,695.1	2,694.7	9.4	9.3	-6.71	896.1	-105.4	902.4	883.6	18.74	48.159	
2,800.0	2,800.0	2,793.9	2,793.5	9.8	9.6	-6.78	894.8	-106.4	901.1	881.7	19.44	46.361	
2,843.6	2,843.6	2,837.7	2,837.3	10.0	9.8	141.76	894.2	-106.7	900.9	881.1	19.74	45.643	CC, ES
2,900.0	2,900.0	2,894.6	2,894.2	10.1	10.0	141.77	893.4	-107.3	901.3	881.2	20.13	44.781	
3,000.0	2,999.8	2,994.5	2,994.1	10.5	10.3	141.87	892.1	-108.2	904.2	883.4	20.80	43.469	
3,050.0	3,049.7	3,044.7	3,044.3	10.6	10.5	141.96	891.4	-108.6	906.6	885.5	21.14	42.888	
3,100.0	3,099.5	3,095.0	3,094.5	10.8	10.7	142.10	890.7	-109.1	909.4	887.9	21.48	42.340	
3,200.0	3,199.1	3,193.7	3,193.2	11.1	11.0	142.36	889.3	-110.0	915.0	892.9	22.15	41.304	
3,300.0	3,298.7	3,291.4	3,291.0	11.5	11.4	142.62	888.1	-110.9	920.8	898.0	22.83	40.338	
3,400.0	3,398.4	3,392.1	3,391.6	11.8	11.7	142.90	887.0	-111.7	926.8	903.2	23.52	39.410	
3,500.0	3,498.0	3,493.1	3,492.6	12.1	12.1	143.15	885.7	-112.8	932.5	908.3	24.21	38.525	
3,600.0	3,597.6	3,591.0	3,590.5	12.5	12.4	143.38	884.4	-114.0	938.4	913.5	24.89	37.705	
3,700.0	3,697.2	3,691.0	3,690.5	12.8	12.8	143.60	883.2	-115.5	944.3	918.8	25.58	36.921	
3,800.0	3,796.8	3,789.5	3,788.9	13.2	13.1	143.81	882.1	-117.0	950.3	924.1	26.26	36.185	
3,900.0	3,896.4	3,889.8	3,889.2	13.5	13.5	144.04	881.0	-118.3	956.4	929.5	26.96	35.477	
4,000.0	3,996.1	3,986.0	3,985.4	13.9	13.8	144.27	880.1	-119.3	962.6	935.0	27.64	34.827	
4,100.0	4,095.7	4,082.9	4,082.3	14.2	14.1	144.50	879.5	-120.3	969.2	940.9	28.32	34.218	
4,200.0	4,195.3	4,183.1	4,182.5	14.6	14.5	144.74	879.1	-121.3	975.9	946.9	29.02	33.627	
4,300.0	4,294.9	4,284.0	4,283.4	15.0	14.8	144.98	878.5	-122.2	982.6	952.9	29.72	33.057	
4,400.0	4,394.5	4,384.0	4,383.5	15.3	15.2	145.21	877.9	-123.2	989.2	958.7	30.42	32.512	
4,500.0	4,494.2	4,480.2	4,479.7	15.7	15.5	145.41	877.4	-124.5	995.9	964.8	31.11	32.014	
4,600.0	4,593.8	4,575.6	4,575.1	16.0	15.9	145.62	877.3	-125.6	1,003.0	971.2	31.79	31.555	
4,700.0	4,693.4	4,671.0	4,670.4	16.4	16.2	145.84	877.6	-126.4	1,010.6	978.2	32.47	31.129	
4,800.0	4,793.0	4,770.6	4,770.0	16.8	16.5	146.08	878.2	-127.0	1,018.5	985.4	33.16	30.716	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Osage 34 Fed #1H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 100-MWD+IFR1 — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.0	4,892.6	4,868.8	4,868.2	17.1	16.9	146.32	878.8	-127.5	1,026.4	992.5	33.85	30.324	
5,000.0	4,992.3	4,968.2	4,967.6	17.5	17.2	146.56	879.6	-128.1	1,034.4	999.9	34.54	29.947	
5,100.0	5,091.9	5,067.0	5,066.4	17.9	17.5	146.78	880.3	-128.9	1,042.5	1,007.2	35.23	29.586	
5,200.0	5,191.5	5,164.2	5,163.6	18.2	17.9	146.99	881.1	-129.7	1,050.7	1,014.8	35.92	29.249	
5,300.0	5,291.1	5,263.5	5,262.9	18.6	18.2	147.19	882.2	-130.8	1,059.1	1,022.5	36.62	28.922	
5,400.0	5,390.7	5,364.9	5,364.3	19.0	18.6	147.38	883.2	-132.0	1,067.4	1,030.1	37.33	28.597	
5,500.0	5,490.4	5,467.3	5,466.6	19.3	18.9	147.56	883.9	-133.6	1,075.5	1,037.5	38.04	28.274	
5,600.0	5,590.0	5,564.5	5,563.9	19.7	19.3	147.68	884.5	-135.7	1,083.6	1,044.8	38.73	27.974	
5,700.0	5,689.6	5,661.0	5,660.3	20.1	19.6	147.80	885.5	-138.0	1,092.0	1,052.5	39.43	27.697	
5,800.0	5,789.2	5,759.3	5,758.6	20.4	19.9	147.94	886.7	-139.8	1,100.5	1,060.4	40.12	27.429	
5,900.0	5,888.8	5,858.5	5,857.7	20.8	20.3	148.13	887.9	-140.8	1,109.2	1,068.4	40.82	27.171	
6,000.0	5,988.5	5,956.8	5,956.1	21.2	20.6	148.32	889.2	-141.7	1,117.9	1,076.4	41.52	26.924	
6,100.0	6,088.1	6,055.4	6,054.7	21.6	21.0	148.49	890.6	-143.0	1,126.8	1,084.6	42.22	26.688	
6,200.0	6,187.7	6,156.0	6,155.2	21.9	21.3	148.64	892.0	-144.6	1,135.7	1,092.7	42.93	26.453	
6,300.0	6,287.3	6,257.1	6,256.3	22.3	21.7	148.78	893.4	-146.3	1,144.4	1,100.8	43.64	26.221	
6,400.0	6,386.9	6,363.1	6,362.2	22.7	22.0	148.91	894.5	-148.4	1,152.9	1,108.5	44.38	25.978	
6,500.0	6,486.6	6,469.1	6,468.2	23.1	22.4	149.05	894.9	-150.5	1,160.7	1,115.6	45.12	25.727	
6,600.0	6,586.2	6,569.2	6,568.3	23.4	22.8	149.17	894.9	-152.4	1,168.3	1,122.4	45.83	25.491	
6,700.0	6,685.8	6,664.1	6,663.2	23.8	23.1	149.27	895.2	-154.6	1,176.0	1,129.5	46.52	25.279	
6,727.2	6,712.9	6,689.4	6,688.5	23.9	23.2	149.30	895.3	-155.2	1,178.2	1,131.5	46.71	25.225	
6,800.0	6,785.5	6,764.4	6,763.5	24.2	23.5	149.42	895.8	-156.6	1,183.3	1,136.0	47.23	25.052	
6,900.0	6,885.4	6,862.5	6,861.6	24.5	23.8	149.54	896.2	-157.2	1,187.5	1,139.5	47.93	24.775	
6,977.2	6,962.5	6,943.6	6,942.7	24.8	24.1	1.01	896.6	-157.7	1,188.8	1,140.3	48.49	24.519	
7,000.0	6,985.4	6,970.1	6,969.1	24.9	24.2	0.99	896.7	-158.1	1,188.8	1,140.2	48.66	24.432	
7,100.0	7,085.4	7,075.3	7,074.4	25.2	24.6	0.91	896.3	-159.8	1,188.4	1,139.1	49.38	24.068	
7,200.0	7,185.4	7,174.5	7,173.5	25.6	24.9	0.82	895.8	-161.6	1,187.9	1,137.9	50.07	23.724	
7,300.0	7,285.4	7,278.9	7,277.9	25.9	25.3	0.73	895.3	-163.5	1,187.4	1,136.6	50.79	23.379	
7,400.0	7,385.4	7,392.6	7,391.5	26.2	25.7	0.63	893.8	-165.6	1,186.1	1,134.6	51.54	23.014	
7,500.0	7,485.4	7,516.6	7,515.3	26.6	26.1	0.27	890.2	-173.0	1,183.2	1,130.9	52.32	22.615	
7,600.0	7,585.4	7,611.5	7,607.7	26.9	26.5	-0.74	886.6	-193.8	1,179.3	1,126.3	53.01	22.248	
7,700.0	7,685.4	7,684.4	7,675.6	27.3	26.7	-2.02	884.5	-220.0	1,177.3	1,123.7	53.61	21.959	
7,716.9	7,702.2	7,695.0	7,685.2	27.3	26.7	-2.23	884.3	-224.5	1,177.2	1,123.5	53.70	21.921	
7,800.0	7,785.4	7,738.5	7,723.6	27.6	26.9	-3.23	884.0	-244.9	1,178.7	1,124.6	54.09	21.793	
7,900.0	7,885.4	7,816.0	7,788.2	27.9	27.1	-5.29	884.3	-287.6	1,184.0	1,129.4	54.62	21.677 SF	
8,000.0	7,985.4	7,862.2	7,824.6	28.3	27.3	-6.66	884.5	-316.0	1,193.2	1,138.3	54.89	21.739	
8,100.0	8,085.4	7,890.5	7,846.1	28.6	27.4	-7.54	885.6	-334.4	1,208.4	1,153.6	54.88	22.021	
8,200.0	8,185.4	7,911.0	7,861.3	29.0	27.5	-8.18	886.9	-348.2	1,230.0	1,175.4	54.63	22.517	
8,300.0	8,285.4	7,943.0	7,884.1	29.3	27.6	-9.22	889.7	-370.4	1,257.3	1,203.0	54.36	23.130	
8,400.0	8,385.4	7,975.0	7,905.7	29.6	27.7	-10.29	893.5	-393.7	1,290.6	1,236.6	53.99	23.904	
8,500.0	8,485.4	8,038.0	7,945.3	30.0	27.9	-12.47	899.8	-442.3	1,328.0	1,274.1	53.95	24.616	
8,600.0	8,585.4	8,070.0	7,963.6	30.3	28.1	-13.64	902.5	-468.4	1,369.8	1,316.4	53.45	25.629	
8,700.0	8,685.4	8,102.0	7,980.2	30.7	28.2	-14.84	904.7	-495.6	1,416.4	1,363.5	52.90	26.776	
8,731.1	8,716.5	8,102.0	7,980.2	30.8	28.2	-14.84	904.7	-495.6	1,431.8	1,379.2	52.59	27.226	
8,750.0	8,735.4	8,102.0	7,980.2	30.8	28.2	-103.81	904.7	-495.6	1,441.4	1,389.0	52.40	27.509	
8,775.0	8,760.3	8,102.0	7,980.2	30.9	28.2	-101.98	904.7	-495.6	1,454.7	1,402.6	52.15	27.896	
8,800.0	8,785.1	8,113.4	7,985.7	31.0	28.3	-100.51	905.4	-505.6	1,468.4	1,416.4	52.05	28.211	
8,825.0	8,809.8	8,115.9	7,986.9	31.1	28.3	-98.57	905.6	-507.9	1,482.7	1,430.8	51.84	28.599	
8,850.0	8,834.1	8,118.0	7,987.8	31.2	28.3	-96.51	905.7	-509.7	1,497.3	1,445.7	51.63	29.000	
8,875.0	8,858.2	8,119.7	7,988.6	31.2	28.3	-94.33	905.8	-511.1	1,512.4	1,461.0	51.42	29.411	
8,900.0	8,881.9	8,120.8	7,989.1	31.3	28.3	-92.05	905.9	-512.2	1,527.8	1,476.5	51.21	29.831	
8,925.0	8,905.1	8,121.5	7,989.4	31.4	28.3	-89.67	905.9	-512.8	1,543.4	1,492.4	51.01	30.258	
8,950.0	8,927.8	8,121.9	7,989.6	31.4	28.3	-87.21	905.9	-513.1	1,559.3	1,508.5	50.81	30.690	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Osage 34 Fed #1H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 100-MWD+IFR1 — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,975.0	8,949.9	8,121.8	7,989.5	31.5	28.3	-84.69	905.9	-513.0	1,575.4	1,524.8	50.62	31.124	
9,000.0	8,971.4	8,121.3	7,989.3	31.6	28.3	-82.12	905.9	-512.6	1,591.7	1,541.2	50.43	31.560	
9,025.0	8,992.2	8,120.5	7,989.0	31.6	28.3	-79.53	905.8	-511.9	1,608.0	1,557.7	50.26	31.995	
9,050.0	9,012.2	8,119.3	7,988.4	31.7	28.3	-76.94	905.8	-510.8	1,624.3	1,574.3	50.09	32.427	
9,075.0	9,031.4	8,117.8	7,987.7	31.7	28.3	-74.36	905.7	-509.5	1,640.7	1,590.8	49.94	32.854	
9,100.0	9,049.8	8,116.0	7,986.9	31.8	28.3	-71.81	905.6	-507.9	1,657.0	1,607.2	49.80	33.274	
9,125.0	9,067.2	8,113.9	7,985.9	31.8	28.3	-69.32	905.4	-506.1	1,673.2	1,623.5	49.67	33.684	
9,150.0	9,083.7	8,102.0	7,980.2	31.8	28.2	-66.53	904.7	-495.6	1,689.3	1,639.9	49.43	34.177	
9,175.0	9,099.1	8,102.0	7,980.2	31.9	28.2	-64.30	904.7	-495.6	1,705.2	1,655.8	49.37	34.539	
9,200.0	9,113.6	8,102.0	7,980.2	31.9	28.2	-62.16	904.7	-495.6	1,720.8	1,671.4	49.33	34.883	
9,225.0	9,126.9	8,102.0	7,980.2	32.0	28.2	-60.12	904.7	-495.6	1,736.1	1,686.8	49.31	35.207	
9,250.0	9,139.1	8,102.0	7,980.2	32.1	28.2	-58.18	904.7	-495.6	1,751.1	1,701.8	49.31	35.511	
9,275.0	9,150.2	8,102.0	7,980.2	32.1	28.2	-56.34	904.7	-495.6	1,765.9	1,716.5	49.33	35.794	
9,300.0	9,160.0	8,089.3	7,973.8	32.3	28.2	-54.27	903.9	-484.7	1,780.1	1,730.9	49.20	36.180	
9,325.0	9,168.7	8,084.2	7,971.2	32.4	28.1	-52.53	903.5	-480.4	1,794.0	1,744.8	49.19	36.468	
9,350.0	9,176.1	8,070.0	7,963.6	32.5	28.1	-50.71	902.5	-468.4	1,807.4	1,758.3	49.07	36.830	
9,375.0	9,182.2	8,070.0	7,963.6	32.6	28.1	-49.34	902.5	-468.4	1,820.2	1,771.0	49.18	37.012	
9,400.0	9,187.1	8,070.0	7,963.6	32.8	28.1	-48.06	902.5	-468.4	1,832.6	1,783.3	49.31	37.168	
9,425.0	9,190.7	8,070.0	7,963.6	32.9	28.1	-46.87	902.5	-468.4	1,844.4	1,795.0	49.45	37.298	
9,450.0	9,193.0	8,056.8	7,956.2	33.0	28.0	-45.55	901.4	-457.4	1,855.5	1,806.1	49.42	37.543	
9,475.0	9,193.9	8,051.0	7,953.0	33.2	28.0	-44.46	901.0	-452.7	1,866.1	1,816.6	49.52	37.682	
9,481.1	9,194.0	8,049.6	7,952.1	33.2	28.0	-44.21	900.8	-451.6	1,868.6	1,819.1	49.55	37.712	
9,500.0	9,194.0	8,038.0	7,945.3	33.4	27.9	-44.03	899.8	-442.3	1,876.4	1,826.9	49.53	37.881	
9,600.0	9,194.0	8,021.0	7,935.0	34.1	27.9	-43.75	898.3	-428.9	1,919.1	1,869.0	50.13	38.282	
9,700.0	9,194.0	7,975.0	7,905.7	35.0	27.7	-42.97	893.5	-393.7	1,964.8	1,914.4	50.36	39.011	
9,800.0	9,194.0	7,958.1	7,894.5	36.0	27.6	-42.67	891.3	-381.2	2,013.0	1,961.9	51.06	39.425	
9,900.0	9,194.0	7,943.0	7,884.1	37.2	27.6	-42.41	889.7	-370.4	2,064.5	2,012.7	51.80	39.856	
10,000.0	9,194.0	7,929.6	7,874.7	38.5	27.5	-42.17	888.5	-360.9	2,119.0	2,066.4	52.57	40.311	
10,100.0	9,194.0	7,911.0	7,861.3	39.9	27.5	-41.84	886.9	-348.2	2,176.2	2,123.0	53.26	40.859	
10,200.0	9,194.0	7,898.4	7,852.0	41.4	27.4	-41.62	886.0	-339.7	2,236.0	2,182.0	54.02	41.390	
10,300.0	9,194.0	7,879.0	7,837.5	42.9	27.4	-41.29	885.0	-326.9	2,298.1	2,243.4	54.68	42.028	
10,400.0	9,194.0	7,879.0	7,837.5	44.6	27.4	-41.29	885.0	-326.9	2,362.5	2,307.0	55.54	42.538	
10,500.0	9,194.0	7,848.0	7,813.6	46.3	27.2	-40.77	884.4	-307.1	2,429.0	2,373.0	56.02	43.357	
10,600.0	9,194.0	7,848.0	7,813.6	48.0	27.2	-40.77	884.4	-307.1	2,497.2	2,440.4	56.81	43.954	
10,700.0	9,194.0	7,816.0	7,788.2	49.9	27.1	-40.25	884.3	-287.6	2,567.3	2,510.0	57.25	44.846	
10,800.0	9,194.0	7,816.0	7,788.2	51.7	27.1	-40.25	884.3	-287.6	2,638.8	2,580.8	57.97	45.522	
10,900.0	9,194.0	7,784.0	7,762.2	53.7	27.0	-39.73	884.3	-269.0	2,711.9	2,653.5	58.36	46.471	
11,000.0	9,194.0	7,784.0	7,762.2	55.6	27.0	-39.73	884.3	-269.0	2,786.2	2,727.2	59.01	47.216	
11,100.0	9,194.0	7,784.0	7,762.2	57.6	27.0	-39.73	884.3	-269.0	2,862.1	2,802.4	59.62	48.004	
11,200.0	9,194.0	7,752.0	7,735.2	59.6	26.9	-39.20	884.1	-251.7	2,939.0	2,879.0	59.94	49.032	
11,300.0	9,194.0	7,752.0	7,735.2	61.7	26.9	-39.20	884.1	-251.7	3,017.1	2,956.6	60.49	49.875	
11,400.0	9,194.0	7,752.0	7,735.2	63.8	26.9	-39.20	884.1	-251.7	3,096.4	3,035.4	61.01	50.751	
11,500.0	9,194.0	7,733.4	7,719.2	65.9	26.9	-38.89	884.0	-242.3	3,176.6	3,115.2	61.37	51.764	
11,600.0	9,194.0	7,720.0	7,707.5	68.0	26.8	-38.66	884.0	-235.8	3,257.9	3,196.1	61.74	52.767	
11,700.0	9,194.0	7,720.0	7,707.5	70.1	26.8	-38.66	884.0	-235.8	3,340.0	3,277.8	62.18	53.714	
11,800.0	9,194.0	7,720.0	7,707.5	72.3	26.8	-38.66	884.0	-235.8	3,423.1	3,360.5	62.60	54.686	
11,900.0	9,194.0	7,720.0	7,707.5	74.5	26.8	-38.66	884.0	-235.8	3,507.0	3,444.0	62.99	55.680	
12,000.0	9,194.0	7,689.0	7,679.8	76.7	26.7	-38.15	884.5	-221.9	3,591.6	3,528.4	63.18	56.850	
12,100.0	9,194.0	7,689.0	7,679.8	78.9	26.7	-38.15	884.5	-221.9	3,676.8	3,613.2	63.53	57.873	
12,200.0	9,194.0	7,689.0	7,679.8	81.1	26.7	-38.15	884.5	-221.9	3,762.7	3,698.8	63.87	58.914	
12,300.0	9,194.0	7,689.0	7,679.8	83.3	26.7	-38.15	884.5	-221.9	3,849.3	3,785.1	64.18	59.972	
12,400.0	9,194.0	7,689.0	7,679.8	85.6	26.7	-38.15	884.5	-221.9	3,936.5	3,872.0	64.48	61.045	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Osage 34 Fed #1H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 100-MWD+IFR1 — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,500.0	9,194.0	7,674.5	7,666.6	87.8	26.7	-37.92	884.8	-216.0	4,024.1	3,959.4	64.70	62.195	
12,600.0	9,194.0	7,657.0	7,650.4	90.1	26.6	-37.63	885.2	-209.2	4,112.4	4,047.5	64.90	63.370	
12,700.0	9,194.0	7,657.0	7,650.4	92.3	26.6	-37.63	885.2	-209.2	4,201.0	4,135.9	65.16	64.474	
12,800.0	9,194.0	7,657.0	7,650.4	94.6	26.6	-37.63	885.2	-209.2	4,290.1	4,224.7	65.41	65.590	
12,900.0	9,194.0	7,657.0	7,650.4	96.9	26.6	-37.63	885.2	-209.2	4,379.7	4,314.1	65.65	66.717	
13,000.0	9,194.0	7,657.0	7,650.4	99.2	26.6	-37.63	885.2	-209.2	4,469.7	4,403.8	65.87	67.853	
13,100.0	9,194.0	7,657.0	7,650.4	101.5	26.6	-37.63	885.2	-209.2	4,560.1	4,494.1	66.09	68.999	
13,200.0	9,194.0	7,641.2	7,635.7	103.8	26.6	-37.38	885.6	-203.5	4,650.7	4,584.5	66.24	70.210	
13,300.0	9,194.0	7,625.0	7,620.5	106.1	26.5	-37.12	886.1	-198.0	4,741.9	4,675.5	66.38	71.432	
13,400.0	9,194.0	7,625.0	7,620.5	108.4	26.5	-37.12	886.1	-198.0	4,833.2	4,766.7	66.58	72.594	
13,500.0	9,194.0	7,625.0	7,620.5	110.7	26.5	-37.12	886.1	-198.0	4,924.9	4,858.1	66.77	73.764	
13,600.0	9,194.0	7,625.0	7,620.5	113.0	26.5	-37.12	886.1	-198.0	5,016.8	4,949.9	66.95	74.939	
13,700.0	9,194.0	7,625.0	7,620.5	115.3	26.5	-37.12	886.1	-198.0	5,109.1	5,042.0	67.12	76.121	
13,800.0	9,194.0	7,625.0	7,620.5	117.7	26.5	-37.12	886.1	-198.0	5,201.7	5,134.4	67.28	77.308	
13,900.0	9,194.0	7,625.0	7,620.5	120.0	26.5	-37.12	886.1	-198.0	5,294.5	5,227.0	67.45	78.500	
14,000.0	9,194.0	7,625.0	7,620.5	122.3	26.5	-37.12	886.1	-198.0	5,387.6	5,320.0	67.60	79.697	
14,100.0	9,194.0	7,625.0	7,620.5	124.7	26.5	-37.12	886.1	-198.0	5,480.9	5,413.1	67.75	80.897	
14,200.0	9,194.0	7,610.0	7,606.2	127.0	26.4	-36.88	886.6	-193.4	5,574.2	5,506.4	67.86	82.146	
14,300.0	9,194.0	7,593.0	7,589.9	129.4	26.4	-36.61	887.3	-188.6	5,668.1	5,600.2	67.96	83.408	
14,400.0	9,194.0	7,593.0	7,589.9	131.7	26.4	-36.61	887.3	-188.6	5,762.0	5,693.9	68.10	84.615	
14,500.0	9,194.0	7,593.0	7,589.9	134.1	26.4	-36.61	887.3	-188.6	5,856.0	5,787.8	68.23	85.824	
14,600.0	9,194.0	7,593.0	7,589.9	136.4	26.4	-36.61	887.3	-188.6	5,950.2	5,881.9	68.36	87.036	
14,700.0	9,194.0	7,593.0	7,589.9	138.8	26.4	-36.61	887.3	-188.6	6,044.6	5,976.1	68.49	88.251	
14,800.0	9,194.0	7,593.0	7,589.9	141.1	26.4	-36.61	887.3	-188.6	6,139.2	6,070.6	68.62	89.468	
14,900.0	9,194.0	7,593.0	7,589.9	143.5	26.4	-36.61	887.3	-188.6	6,234.0	6,165.2	68.74	90.687	
15,000.0	9,194.0	7,593.0	7,589.9	145.8	26.4	-36.61	887.3	-188.6	6,328.9	6,260.0	68.86	91.907	
15,100.0	9,194.0	7,593.0	7,589.9	148.2	26.4	-36.61	887.3	-188.6	6,424.0	6,355.0	68.98	93.129	
15,200.0	9,194.0	7,593.0	7,589.9	150.6	26.4	-36.61	887.3	-188.6	6,519.2	6,450.1	69.09	94.352	
15,300.0	9,194.0	7,593.0	7,589.9	152.9	26.4	-36.61	887.3	-188.6	6,614.5	6,545.3	69.21	95.577	
15,400.0	9,194.0	7,593.0	7,589.9	155.3	26.4	-36.61	887.3	-188.6	6,710.0	6,640.7	69.32	96.802	
15,500.0	9,194.0	7,593.0	7,589.9	157.7	26.4	-36.61	887.3	-188.6	6,805.6	6,736.2	69.43	98.028	
15,600.0	9,194.0	7,593.0	7,589.9	160.0	26.4	-36.61	887.3	-188.6	6,901.4	6,831.9	69.53	99.254	
15,700.0	9,194.0	7,576.9	7,574.4	162.4	26.3	-36.36	887.9	-184.6	6,997.0	6,927.4	69.61	100.519	
15,800.0	9,194.0	7,561.0	7,558.9	164.8	26.3	-36.11	888.6	-181.0	7,093.1	7,023.4	69.68	101.789	
15,900.0	9,194.0	7,561.0	7,558.9	167.2	26.3	-36.11	888.6	-181.0	7,189.1	7,119.3	69.79	103.013	
16,000.0	9,194.0	7,561.0	7,558.9	169.5	26.3	-36.11	888.6	-181.0	7,285.2	7,215.3	69.89	104.238	
16,100.0	9,194.0	7,561.0	7,558.9	171.9	26.3	-36.11	888.6	-181.0	7,381.4	7,311.4	69.99	105.462	
16,200.0	9,194.0	7,561.0	7,558.9	174.3	26.3	-36.11	888.6	-181.0	7,477.7	7,407.6	70.09	106.686	
16,300.0	9,194.0	7,561.0	7,558.9	176.7	26.3	-36.11	888.6	-181.0	7,574.1	7,503.9	70.19	107.910	
16,400.0	9,194.0	7,561.0	7,558.9	179.1	26.3	-36.11	888.6	-181.0	7,670.6	7,600.3	70.29	109.134	
16,500.0	9,194.0	7,561.0	7,558.9	181.4	26.3	-36.11	888.6	-181.0	7,767.2	7,696.8	70.38	110.356	
16,600.0	9,194.0	7,561.0	7,558.9	183.8	26.3	-36.11	888.6	-181.0	7,863.8	7,793.3	70.48	111.579	
16,700.0	9,194.0	7,561.0	7,558.9	186.2	26.3	-36.11	888.6	-181.0	7,960.6	7,890.0	70.57	112.800	
16,800.0	9,194.0	7,561.0	7,558.9	188.6	26.3	-36.11	888.6	-181.0	8,057.4	7,986.7	70.67	114.020	
16,900.0	9,194.0	7,561.0	7,558.9	191.0	26.3	-36.11	888.6	-181.0	8,154.3	8,083.5	70.76	115.240	
17,000.0	9,194.0	7,561.0	7,558.9	193.4	26.3	-36.11	888.6	-181.0	8,251.3	8,180.4	70.85	116.458	
17,100.0	9,194.0	7,561.0	7,558.9	195.8	26.3	-36.11	888.6	-181.0	8,348.3	8,277.4	70.94	117.675	
17,200.0	9,194.0	7,561.0	7,558.9	198.1	26.3	-36.11	888.6	-181.0	8,445.4	8,374.4	71.03	118.891	
17,300.0	9,194.0	7,561.0	7,558.9	200.5	26.3	-36.11	888.6	-181.0	8,542.6	8,471.5	71.13	120.106	
17,400.0	9,194.0	7,561.0	7,558.9	202.9	26.3	-36.11	888.6	-181.0	8,639.8	8,568.6	71.22	121.319	
17,500.0	9,194.0	7,561.0	7,558.9	205.3	26.3	-36.11	888.6	-181.0	8,737.1	8,665.8	71.31	122.531	
17,600.0	9,194.0	7,561.0	7,558.9	207.7	26.3	-36.11	888.6	-181.0	8,834.5	8,763.1	71.40	123.741	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Osage 34 Fed #1H - AWP - FINAL MWD — **Offset Site Error:** 0.0 usft

Survey Program: 100-MWD+IFR1 — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,700.0	9,194.0	7,545.4	7,543.6	210.1	26.2	-35.87	889.2	-177.8	8,931.7	8,860.3	71.46	124.982	
17,800.0	9,194.0	7,544.2	7,542.5	212.5	26.2	-35.85	889.2	-177.6	9,029.2	8,957.6	71.55	126.191	
17,900.0	9,194.0	7,529.0	7,527.5	214.9	26.2	-35.62	889.8	-174.9	9,126.8	9,055.2	71.62	127.434	
18,000.0	9,194.0	7,529.0	7,527.5	217.3	26.2	-35.62	889.8	-174.9	9,224.4	9,152.7	71.71	128.636	
18,100.0	9,194.0	7,529.0	7,527.5	219.7	26.2	-35.62	889.8	-174.9	9,321.9	9,250.1	71.80	129.836	
18,200.0	9,194.0	7,529.0	7,527.5	222.1	26.2	-35.62	889.8	-174.9	9,419.6	9,347.7	71.89	131.034	
18,300.0	9,194.0	7,529.0	7,527.5	224.5	26.2	-35.62	889.8	-174.9	9,517.2	9,445.3	71.97	132.230	
18,400.0	9,194.0	7,529.0	7,527.5	226.9	26.2	-35.62	889.8	-174.9	9,615.0	9,542.9	72.06	133.424	
18,500.0	9,194.0	7,529.0	7,527.5	229.3	26.2	-35.62	889.8	-174.9	9,712.7	9,640.6	72.15	134.616	
18,600.0	9,194.0	7,529.0	7,527.5	231.7	26.2	-35.62	889.8	-174.9	9,810.6	9,738.3	72.24	135.806	
18,700.0	9,194.0	7,529.0	7,527.5	234.1	26.2	-35.62	889.8	-174.9	9,908.4	9,836.1	72.33	136.994	
18,800.0	9,194.0	7,529.0	7,527.5	236.5	26.2	-35.62	889.8	-174.9	10,006.3	9,933.9	72.42	138.179	
18,900.0	9,194.0	7,529.0	7,527.5	238.9	26.2	-35.62	889.8	-174.9	10,104.3	10,031.8	72.50	139.363	
19,000.0	9,194.0	7,529.0	7,527.5	241.3	26.2	-35.62	889.8	-174.9	10,202.2	10,129.7	72.59	140.544	
19,100.0	9,194.0	7,529.0	7,527.5	243.7	26.2	-35.62	889.8	-174.9	10,300.3	10,227.6	72.68	141.722	
19,200.0	9,194.0	7,529.0	7,527.5	246.1	26.2	-35.62	889.8	-174.9	10,398.3	10,325.6	72.77	142.898	
19,300.0	9,194.0	7,529.0	7,527.5	248.5	26.2	-35.62	889.8	-174.9	10,496.4	10,423.6	72.86	144.072	
19,400.0	9,194.0	7,529.0	7,527.5	250.9	26.2	-35.62	889.8	-174.9	10,594.6	10,521.6	72.94	145.243	
19,500.0	9,194.0	7,529.0	7,527.5	253.3	26.2	-35.62	889.8	-174.9	10,692.7	10,619.7	73.03	146.412	
19,600.0	9,194.0	7,529.0	7,527.5	255.7	26.2	-35.62	889.8	-174.9	10,790.9	10,717.8	73.12	147.578	
19,700.0	9,194.0	7,529.0	7,527.5	258.1	26.2	-35.62	889.8	-174.9	10,889.2	10,815.9	73.21	148.742	
19,800.0	9,194.0	7,529.0	7,527.5	260.5	26.2	-35.62	889.8	-174.9	10,987.4	10,914.1	73.30	149.903	
19,847.1	9,194.0	7,529.0	7,527.5	261.6	26.2	-35.62	889.8	-174.9	11,033.7	10,960.4	73.34	150.449	

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY — **Offset Site Error:** 0.0 usft

Survey Program: 355-INC-ONLY — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	8.3	8.3	0.0	0.1	95.08	-662.3	7,457.1	7,486.5				
100.0	100.0	108.3	108.3	0.1	1.0	95.08	-662.3	7,457.1	7,486.5	7,485.3	1.13	6,612.902	
200.0	200.0	208.3	208.3	0.5	1.9	95.08	-662.3	7,457.1	7,486.5	7,484.0	2.42	3,093.506	
300.0	300.0	308.3	308.3	0.8	2.9	95.08	-662.3	7,457.1	7,486.5	7,482.8	3.71	2,018.994	
400.0	400.0	408.3	408.3	1.2	4.4	95.08	-662.3	7,457.1	7,486.5	7,480.9	5.59	1,339.275	
500.0	500.0	508.3	508.3	1.6	6.4	95.08	-662.3	7,457.1	7,486.5	7,478.5	7.99	936.758	
531.1	531.1	538.6	538.6	1.7	7.1	95.07	-661.8	7,457.1	7,486.4	7,477.7	8.72	858.310	
600.0	600.0	605.6	605.6	1.9	8.4	95.07	-662.0	7,457.1	7,486.4	7,476.1	10.34	724.100	
700.0	700.0	708.3	708.3	2.3	10.8	95.08	-662.3	7,457.1	7,486.5	7,473.4	13.11	570.949	
800.0	800.0	808.3	808.3	2.6	13.6	95.08	-662.3	7,457.1	7,486.5	7,470.2	16.23	461.376	
829.5	829.5	836.8	836.8	2.7	14.4	95.07	-661.7	7,457.1	7,486.4	7,469.3	17.12	437.380	
900.0	900.0	904.6	904.5	3.0	16.2	95.07	-662.0	7,457.1	7,486.4	7,467.2	19.24	389.173	
1,000.0	1,000.0	1,008.5	1,008.3	3.4	19.6	95.08	-662.3	7,457.1	7,486.5	7,463.6	22.91	326.798	
1,069.0	1,069.0	1,077.5	1,077.2	3.6	22.0	95.06	-660.9	7,457.1	7,486.3	7,460.7	25.64	292.029	
1,100.0	1,100.0	1,105.0	1,104.7	3.7	23.0	95.07	-660.9	7,457.1	7,486.3	7,459.6	26.74	280.020	
1,200.0	1,200.0	1,208.8	1,208.3	4.1	26.7	95.08	-662.3	7,457.1	7,486.5	7,455.7	30.79	243.123	
1,281.1	1,281.1	1,289.9	1,289.4	4.4	29.3	95.07	-661.3	7,457.1	7,486.4	7,452.7	33.69	222.212	
1,300.0	1,300.0	1,306.0	1,305.5	4.4	29.8	95.07	-661.3	7,457.1	7,486.4	7,452.1	34.27	218.431	
1,400.0	1,400.0	1,408.9	1,408.3	4.8	32.9	95.08	-662.3	7,457.1	7,486.5	7,448.8	37.67	198.720	
1,500.0	1,500.0	1,508.9	1,508.3	5.1	35.2	95.08	-662.3	7,457.1	7,486.5	7,446.1	40.33	185.649	
1,531.9	1,531.9	1,539.6	1,539.0	5.3	35.9	95.07	-661.3	7,457.1	7,486.4	7,445.2	41.14	181.955	
1,600.0	1,600.0	1,603.3	1,602.6	5.5	37.3	95.07	-661.6	7,457.1	7,486.4	7,443.6	42.85	174.720	
1,700.0	1,700.0	1,709.0	1,708.3	5.9	39.7	95.08	-662.3	7,457.1	7,486.5	7,440.9	45.54	164.402	
1,800.0	1,800.0	1,809.0	1,808.3	6.2	41.8	95.08	-662.3	7,457.1	7,486.5	7,438.5	47.97	156.050	
1,832.1	1,832.1	1,840.5	1,839.7	6.3	42.4	95.07	-661.8	7,457.1	7,486.4	7,437.7	48.74	153.588	
1,900.0	1,900.0	1,906.5	1,905.8	6.6	43.8	95.07	-662.0	7,457.1	7,486.4	7,436.1	50.36	148.660	
2,000.0	2,000.0	2,009.1	2,008.3	6.9	45.9	95.08	-662.3	7,457.1	7,486.5	7,433.6	52.86	141.641	
2,100.0	2,100.0	2,109.1	2,108.3	7.3	48.0	95.08	-662.3	7,457.1	7,486.5	7,431.2	55.31	135.365	
2,154.8	2,154.8	2,163.8	2,163.0	7.5	49.2	95.07	-661.3	7,457.1	7,486.4	7,429.7	56.65	132.157	
2,200.0	2,200.0	2,207.4	2,206.7	7.7	50.1	95.07	-661.3	7,457.1	7,486.4	7,428.7	57.72	129.696	
2,300.0	2,300.0	2,303.9	2,303.1	8.0	52.1	95.07	-661.8	7,457.1	7,486.4	7,426.3	60.10	124.569	
2,400.0	2,400.0	2,409.1	2,408.3	8.4	54.2	95.08	-662.3	7,457.1	7,486.5	7,423.9	62.61	119.573	
2,500.0	2,500.0	2,509.1	2,508.3	8.7	56.2	95.08	-662.3	7,457.1	7,486.5	7,421.5	64.97	115.237	
2,539.2	2,539.2	2,548.3	2,547.4	8.9	57.0	95.07	-661.7	7,457.1	7,486.4	7,420.5	65.89	113.623	
2,600.0	2,600.0	2,607.7	2,606.9	9.1	58.2	95.07	-661.8	7,457.1	7,486.4	7,419.1	67.29	111.249	
2,700.0	2,700.0	2,705.5	2,704.7	9.4	60.2	95.07	-662.1	7,457.1	7,486.5	7,416.8	69.61	107.554	
2,800.0	2,800.0	2,809.2	2,808.3	9.8	62.2	95.08	-662.3	7,457.1	7,486.5	7,414.4	72.04	103.915	
2,900.0	2,900.0	2,909.1	2,908.3	10.1	64.2	-116.37	-662.3	7,457.1	7,487.2	7,412.8	74.39	100.643	
3,000.0	2,999.8	3,008.8	3,007.9	10.5	66.3	-116.38	-661.2	7,457.1	7,489.5	7,412.7	76.72	97.618	
3,050.0	3,049.7	3,057.6	3,056.7	10.6	67.2	-116.37	-661.3	7,457.1	7,491.2	7,413.4	77.87	96.207	
3,100.0	3,099.5	3,106.3	3,105.5	10.8	68.2	-116.40	-661.4	7,457.1	7,493.2	7,414.2	79.01	94.838	
3,200.0	3,199.1	3,203.9	3,203.0	11.1	70.2	-116.45	-661.9	7,457.1	7,497.1	7,415.8	81.30	92.213	
3,300.0	3,298.7	3,308.0	3,307.0	11.5	72.3	-116.51	-662.3	7,457.1	7,501.0	7,417.3	83.73	89.586	
3,400.0	3,398.4	3,407.6	3,406.7	11.8	74.3	-116.57	-662.3	7,457.1	7,505.0	7,418.9	86.08	87.189	
3,500.0	3,498.0	3,504.7	3,503.8	12.1	76.2	-116.63	-662.0	7,457.1	7,508.8	7,420.5	88.38	84.965	
3,600.0	3,597.6	3,606.8	3,605.9	12.5	78.3	-116.69	-662.3	7,457.1	7,512.8	7,422.0	90.78	82.758	
3,700.0	3,697.2	3,706.5	3,705.5	12.8	80.3	-116.75	-662.3	7,457.1	7,516.7	7,423.6	93.14	80.704	
3,800.0	3,796.8	3,806.0	3,805.0	13.2	82.3	-116.82	-661.3	7,457.1	7,520.6	7,425.1	95.50	78.751	
3,900.0	3,896.4	3,903.5	3,902.5	13.5	84.3	-116.87	-661.5	7,457.1	7,524.5	7,426.7	97.82	76.923	
4,000.0	3,996.1	4,001.1	4,000.1	13.9	86.3	-116.93	-662.0	7,457.1	7,528.5	7,428.4	100.14	75.179	
4,100.0	4,095.7	4,105.0	4,104.0	14.2	88.3	-116.99	-662.3	7,457.1	7,532.5	7,430.1	102.47	73.508	
4,200.0	4,195.3	4,204.6	4,203.6	14.6	90.1	-117.04	-662.3	7,457.1	7,536.5	7,431.8	104.66	72.012	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY — **Offset Site Error:** 0.0 usft

Survey Program: 355-INC-ONLY — **Offset Well Error:** 0.0 usft

Rule Assigned: Distance

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,300.0	4,294.9	4,303.2	4,302.1	15.0	91.9	-117.11	-661.7	7,457.1	7,540.4	7,433.6	106.82	70.590	
4,400.0	4,394.5	4,401.1	4,400.0	15.3	93.7	-117.16	-662.1	7,457.1	7,544.4	7,435.5	108.98	69.231	
4,500.0	4,494.2	4,503.5	4,502.5	15.7	95.5	-117.22	-662.3	7,457.1	7,548.5	7,437.3	111.12	67.931	
4,600.0	4,593.8	4,603.1	4,602.1	16.0	97.1	-117.28	-662.3	7,457.1	7,552.5	7,439.3	113.14	66.753	
4,700.0	4,693.4	4,702.7	4,701.7	16.4	98.8	-117.34	-662.3	7,457.1	7,556.5	7,441.3	115.16	65.615	
4,800.0	4,793.0	4,802.2	4,801.1	16.8	100.5	-117.40	-661.6	7,457.1	7,560.4	7,443.3	117.19	64.517	
4,900.0	4,892.6	4,901.1	4,900.1	17.1	102.1	-117.46	-661.7	7,457.1	7,564.5	7,445.3	119.20	63.460	
5,000.0	4,992.3	5,000.1	4,999.1	17.5	103.8	-117.52	-661.9	7,457.1	7,568.5	7,447.3	121.22	62.439	
5,100.0	5,091.9	5,099.1	5,098.1	17.9	105.4	-117.57	-662.3	7,457.1	7,572.6	7,449.4	123.23	61.450	
5,200.0	5,191.5	5,200.9	5,199.8	18.2	107.3	-117.63	-662.3	7,457.1	7,576.6	7,451.2	125.48	60.381	
5,300.0	5,291.1	5,300.5	5,299.4	18.6	109.2	-117.69	-662.3	7,457.1	7,580.7	7,453.0	127.70	59.362	
5,400.0	5,390.7	5,399.9	5,398.9	19.0	111.0	-117.75	-662.1	7,457.1	7,584.7	7,454.8	129.92	58.379	
5,500.0	5,490.4	5,499.1	5,498.1	19.3	112.9	-117.81	-662.2	7,457.1	7,588.8	7,456.7	132.14	57.430	
5,600.0	5,590.0	5,598.4	5,597.3	19.7	114.7	-117.86	-662.3	7,457.1	7,592.9	7,458.6	134.36	56.513	
5,700.0	5,689.6	5,699.0	5,697.9	20.1	116.9	-117.92	-662.3	7,457.1	7,597.0	7,460.1	136.93	55.481	
5,800.0	5,789.2	5,798.6	5,797.5	20.4	119.1	-117.98	-662.3	7,457.1	7,601.1	7,461.6	139.50	54.487	
5,900.0	5,888.8	5,897.3	5,896.2	20.8	121.3	-118.04	-661.4	7,457.1	7,605.2	7,463.1	142.06	53.536	
6,000.0	5,988.5	5,995.4	5,994.3	21.2	123.5	-118.10	-661.8	7,457.1	7,609.3	7,464.7	144.60	52.624	
6,100.0	6,088.1	6,097.6	6,096.4	21.6	125.9	-118.15	-662.3	7,457.1	7,613.4	7,466.1	147.33	51.675	
6,200.0	6,187.7	6,197.2	6,196.0	21.9	128.5	-118.21	-662.3	7,457.1	7,617.6	7,467.2	150.35	50.664	
6,300.0	6,287.3	6,296.8	6,295.6	22.3	131.2	-118.27	-662.3	7,457.1	7,621.7	7,468.3	153.37	49.694	
6,400.0	6,386.9	6,394.8	6,393.6	22.7	133.8	-118.33	-661.2	7,457.1	7,625.8	7,469.4	156.35	48.774	
6,500.0	6,486.6	6,492.7	6,491.5	23.1	136.4	-118.38	-661.8	7,457.1	7,630.0	7,470.7	159.32	47.890	
6,600.0	6,586.2	6,595.9	6,594.5	23.4	139.3	-118.44	-662.3	7,457.1	7,634.2	7,471.5	162.63	46.941	
6,700.0	6,685.8	6,695.5	6,694.1	23.8	142.4	-118.50	-662.3	7,457.1	7,638.3	7,472.3	166.04	46.004	
6,727.2	6,712.9	6,721.4	6,720.0	23.9	143.1	-118.52	-660.9	7,457.1	7,639.4	7,472.5	166.93	45.765	
6,800.0	6,785.5	6,790.8	6,789.3	24.2	145.3	-118.60	-661.4	7,457.1	7,642.0	7,472.7	169.31	45.138	
6,900.0	6,885.4	6,895.3	6,893.7	24.5	148.6	-118.66	-662.3	7,457.1	7,644.2	7,471.2	172.99	44.189	
6,977.2	6,962.5	6,972.3	6,970.6	24.8	151.2	92.77	-661.2	7,457.1	7,644.6	7,468.8	175.83	43.476	
7,000.0	6,985.4	6,993.8	6,992.2	24.9	151.9	92.77	-661.2	7,457.1	7,644.6	7,468.0	176.63	43.280	
7,100.0	7,085.4	7,095.6	7,093.7	25.2	155.3	92.78	-662.3	7,457.1	7,644.7	7,464.3	180.38	42.380	
7,200.0	7,185.4	7,195.6	7,193.7	25.6	158.5	92.78	-662.3	7,457.1	7,644.7	7,460.7	183.98	41.552	
7,300.0	7,285.4	7,295.6	7,293.7	25.9	161.4	92.78	-662.3	7,457.1	7,644.7	7,457.5	187.22	40.833	
7,377.7	7,363.1	7,373.4	7,371.4	26.2	163.7	92.76	-660.3	7,457.1	7,644.6	7,454.9	189.74	40.290	
7,400.0	7,385.4	7,394.9	7,392.9	26.2	164.3	92.76	-660.4	7,457.1	7,644.6	7,454.2	190.44	40.142	
7,500.0	7,485.4	7,491.6	7,489.5	26.6	167.1	92.77	-661.0	7,457.1	7,644.6	7,451.0	193.58	39.490	
7,600.0	7,585.4	7,595.9	7,593.7	26.9	170.2	92.78	-662.3	7,457.1	7,644.7	7,447.7	197.01	38.803	
7,700.0	7,685.4	7,695.9	7,693.7	27.3	173.4	92.78	-662.3	7,457.1	7,644.7	7,444.1	200.57	38.114	
7,800.0	7,785.4	7,795.9	7,793.7	27.6	176.7	92.78	-662.3	7,457.1	7,644.7	7,440.6	204.13	37.449	
7,840.0	7,825.4	7,835.4	7,833.2	27.7	177.9	92.76	-660.5	7,457.1	7,644.6	7,439.1	205.54	37.192	
7,900.0	7,885.4	7,894.1	7,891.8	27.9	179.8	92.76	-660.7	7,457.1	7,644.6	7,437.0	207.64	36.817	
8,000.0	7,985.4	7,991.9	7,989.6	28.3	183.0	92.77	-661.5	7,457.1	7,644.6	7,433.5	211.13	36.209	
8,100.0	8,085.4	8,096.3	8,093.7	28.6	186.6	92.78	-662.3	7,457.1	7,644.7	7,429.6	215.05	35.548	
8,149.8	8,135.2	8,146.0	8,143.4	28.8	188.4	92.77	-661.2	7,457.1	7,644.6	7,427.5	217.09	35.214	
8,200.0	8,185.4	8,191.5	8,188.8	29.0	190.1	92.77	-661.5	7,457.1	7,644.6	7,425.7	218.97	34.912	
8,300.0	8,285.4	8,296.6	8,293.7	29.3	194.1	92.78	-662.3	7,457.1	7,644.7	7,421.4	223.27	34.240	
8,324.8	8,310.2	8,321.4	8,318.5	29.4	195.0	92.77	-661.2	7,457.1	7,644.6	7,420.3	224.29	34.083	
8,400.0	8,385.4	8,389.0	8,386.1	29.6	197.6	92.77	-661.9	7,457.1	7,644.7	7,417.6	227.10	33.662	
8,500.0	8,485.4	8,496.8	8,493.7	30.0	201.6	92.78	-662.3	7,457.1	7,644.7	7,413.2	231.45	33.030	
8,600.0	8,585.4	8,596.8	8,593.7	30.3	205.3	92.78	-662.3	7,457.1	7,644.7	7,409.2	235.49	32.463	
8,700.0	8,685.4	8,694.4	8,691.2	30.7	208.9	92.76	-659.5	7,457.1	7,644.6	7,405.1	239.44	31.927	
8,731.1	8,716.5	8,724.3	8,721.1	30.8	210.0	92.76	-659.8	7,457.1	7,644.6	7,403.9	240.65	31.766	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY — **Offset Site Error:** 0.0 usft

Survey Program: 355-INC-ONLY — **Rule Assigned:** Distance — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,746.9	8,732.2	8,739.4	8,736.2	30.8	210.5	2.48	-660.0	7,457.1	7,644.3	7,403.0	241.27	31.684	
8,750.0	8,735.4	8,742.4	8,739.2	30.8	210.7	2.48	-660.0	7,457.1	7,644.2	7,402.8	241.39	31.668	
8,775.0	8,760.3	8,766.4	8,763.2	30.9	211.5	2.49	-660.3	7,457.1	7,642.6	7,400.2	242.36	31.534	
8,800.0	8,785.1	8,790.3	8,787.0	31.0	212.4	2.51	-660.7	7,457.1	7,639.7	7,396.3	243.33	31.397	
8,825.0	8,809.8	8,814.0	8,810.7	31.1	213.3	2.54	-661.2	7,457.1	7,635.4	7,391.2	244.28	31.256	
8,850.0	8,834.1	8,837.4	8,834.1	31.2	214.2	2.58	-661.7	7,457.1	7,630.0	7,384.7	245.23	31.113	
8,875.0	8,858.2	8,870.2	8,866.5	31.2	215.4	2.62	-662.3	7,457.1	7,623.2	7,376.7	246.50	30.925	
8,900.0	8,881.9	8,893.9	8,890.2	31.3	216.2	2.67	-662.3	7,457.1	7,615.2	7,367.8	247.38	30.783	
8,925.0	8,905.1	8,917.1	8,913.4	31.4	217.0	2.73	-662.3	7,457.1	7,605.9	7,357.7	248.25	30.639	
8,950.0	8,927.8	8,939.8	8,936.1	31.4	217.7	2.80	-662.3	7,457.1	7,595.4	7,346.4	249.09	30.493	
8,975.0	8,949.9	8,961.9	8,958.2	31.5	218.5	2.88	-662.3	7,457.1	7,583.8	7,333.9	249.91	30.347	
9,000.0	8,971.4	8,983.4	8,979.7	31.6	219.2	2.98	-662.3	7,457.1	7,571.0	7,320.3	250.70	30.200	
9,025.0	8,992.2	9,004.2	9,000.5	31.6	219.9	3.09	-662.3	7,457.1	7,557.2	7,305.7	251.47	30.052	
9,050.0	9,012.2	9,024.2	9,020.5	31.7	220.6	3.22	-662.3	7,457.1	7,542.2	7,290.0	252.20	29.905	
9,075.0	9,031.4	9,043.4	9,039.7	31.7	221.3	3.37	-662.3	7,457.1	7,526.2	7,273.3	252.91	29.759	
9,100.0	9,049.8	9,061.8	9,058.1	31.8	221.9	3.55	-662.3	7,457.1	7,509.3	7,255.7	253.58	29.613	
9,125.0	9,067.2	9,079.2	9,075.5	31.8	222.5	3.75	-662.3	7,457.1	7,491.4	7,237.2	254.21	29.469	
9,150.0	9,083.7	9,095.7	9,092.0	31.8	223.0	3.99	-662.3	7,457.1	7,472.6	7,217.8	254.81	29.326	
9,175.0	9,099.1	9,111.1	9,107.4	31.9	223.6	4.28	-662.3	7,457.1	7,453.0	7,197.6	255.38	29.184	
9,200.0	9,113.6	9,125.2	9,121.4	31.9	224.0	4.58	-659.3	7,457.1	7,432.4	7,176.6	255.88	29.046	
9,225.0	9,126.9	9,138.1	9,134.3	32.0	224.5	4.98	-659.4	7,457.1	7,411.3	7,155.0	256.35	28.911	
9,250.0	9,139.1	9,149.9	9,146.1	32.1	224.9	5.49	-659.4	7,457.1	7,389.5	7,132.8	256.77	28.778	
9,275.0	9,150.2	9,160.5	9,156.8	32.1	225.2	6.12	-659.5	7,457.1	7,367.1	7,110.0	257.16	28.648	
9,300.0	9,160.0	9,170.1	9,166.3	32.3	225.6	6.93	-659.5	7,457.1	7,344.2	7,086.7	257.50	28.521	
9,325.0	9,168.7	9,178.4	9,174.7	32.4	225.8	8.00	-659.5	7,457.1	7,320.8	7,063.0	257.79	28.398	
9,350.0	9,176.1	9,185.6	9,181.8	32.5	226.1	9.47	-659.6	7,457.1	7,296.9	7,038.9	258.05	28.277	
9,375.0	9,182.2	9,191.6	9,187.8	32.6	226.3	11.64	-659.6	7,457.1	7,272.7	7,014.5	258.26	28.161	
9,400.0	9,187.1	9,196.3	9,192.5	32.8	226.4	15.07	-659.7	7,457.1	7,248.2	6,989.8	258.42	28.048	
9,425.0	9,190.7	9,199.7	9,195.9	32.9	226.6	21.26	-659.7	7,457.1	7,223.5	6,965.0	258.54	27.939	
9,450.0	9,193.0	9,201.9	9,198.1	33.0	226.6	35.02	-659.7	7,457.1	7,198.6	6,940.0	258.62	27.835	
9,475.0	9,193.9	9,202.9	9,199.1	33.2	226.7	73.95	-659.7	7,457.1	7,173.7	6,915.0	258.65	27.735	
9,481.1	9,194.0	9,202.9	9,199.1	33.2	226.7	89.45	-659.7	7,457.1	7,167.6	6,908.9	258.65	27.711	
9,500.0	9,194.0	9,202.9	9,199.1	33.4	226.7	89.45	-659.7	7,457.1	7,148.7	6,890.1	258.65	27.638	
9,600.0	9,194.0	9,202.9	9,199.1	34.1	226.7	89.45	-659.7	7,457.1	7,048.8	6,790.2	258.65	27.252	
9,700.0	9,194.0	9,202.9	9,199.1	35.0	226.7	89.45	-659.7	7,457.1	6,948.9	6,690.3	258.65	26.866	
9,800.0	9,194.0	9,202.9	9,199.1	36.0	226.7	89.45	-659.7	7,457.1	6,849.1	6,590.4	258.65	26.480	
9,900.0	9,194.0	9,202.9	9,199.1	37.2	226.7	89.45	-659.7	7,457.1	6,749.2	6,490.5	258.65	26.094	
10,000.0	9,194.0	9,202.9	9,199.1	38.5	226.7	89.45	-659.7	7,457.1	6,649.3	6,390.6	258.66	25.707	
10,100.0	9,194.0	9,203.0	9,199.1	39.9	226.7	89.46	-659.7	7,457.1	6,549.4	6,290.8	258.66	25.321	
10,200.0	9,194.0	9,203.0	9,199.2	41.4	226.7	89.46	-659.7	7,457.1	6,449.5	6,190.9	258.67	24.934	
10,300.0	9,194.0	9,203.0	9,199.2	42.9	226.7	89.46	-659.7	7,457.1	6,349.7	6,091.0	258.67	24.547	
10,400.0	9,194.0	9,203.0	9,199.2	44.6	226.7	89.46	-659.7	7,457.1	6,249.8	5,991.1	258.68	24.160	
10,500.0	9,194.0	9,203.0	9,199.2	46.3	226.7	89.46	-659.7	7,457.1	6,150.0	5,891.3	258.69	23.773	
10,600.0	9,194.0	9,203.0	9,199.2	48.0	226.7	89.46	-659.7	7,457.1	6,050.1	5,791.4	258.71	23.386	
10,700.0	9,194.0	9,203.0	9,199.2	49.9	226.7	89.46	-659.7	7,457.1	5,950.3	5,691.5	258.72	22.999	
10,800.0	9,194.0	9,203.0	9,199.2	51.7	226.7	89.46	-659.7	7,457.1	5,850.4	5,591.7	258.74	22.611	
10,900.0	9,194.0	9,203.0	9,199.2	53.7	226.7	89.46	-659.7	7,457.1	5,750.6	5,491.8	258.76	22.224	
11,000.0	9,194.0	9,203.0	9,199.2	55.6	226.7	89.46	-659.7	7,457.1	5,650.7	5,392.0	258.78	21.836	
11,100.0	9,194.0	9,203.0	9,199.2	57.6	226.7	89.46	-659.7	7,457.1	5,550.9	5,292.1	258.80	21.449	
11,200.0	9,194.0	9,203.0	9,199.2	59.6	226.7	89.46	-659.7	7,457.1	5,451.1	5,192.3	258.82	21.061	
11,300.0	9,194.0	9,203.0	9,199.2	61.7	226.7	89.46	-659.7	7,457.1	5,351.3	5,092.4	258.85	20.673	
11,400.0	9,194.0	9,203.0	9,199.2	63.8	226.7	89.47	-659.7	7,457.1	5,251.5	4,992.6	258.88	20.285	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY — **Offset Site Error:** 0.0 usft

Survey Program: 355-INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,500.0	9,194.0	9,203.0	9,199.2	65.9	226.7	89.47	-659.7	7,457.1	5,151.7	4,892.8	258.91	19.898	
11,600.0	9,194.0	9,203.0	9,199.2	68.0	226.7	89.47	-659.7	7,457.1	5,051.9	4,793.0	258.95	19.509	
11,700.0	9,194.0	9,203.0	9,199.2	70.1	226.7	89.47	-659.7	7,457.1	4,952.1	4,693.1	258.98	19.121	
11,800.0	9,194.0	9,203.0	9,199.2	72.3	226.7	89.47	-659.7	7,457.1	4,852.3	4,593.3	259.03	18.733	
11,900.0	9,194.0	9,203.0	9,199.2	74.5	226.7	89.47	-659.7	7,457.1	4,752.6	4,493.5	259.07	18.345	
12,000.0	9,194.0	9,203.0	9,199.2	76.7	226.7	89.47	-659.7	7,457.1	4,652.8	4,393.7	259.12	17.956	
12,100.0	9,194.0	9,203.0	9,199.2	78.9	226.7	89.47	-659.7	7,457.1	4,553.1	4,293.9	259.17	17.568	
12,200.0	9,194.0	9,203.0	9,199.2	81.1	226.7	89.47	-659.7	7,457.1	4,453.4	4,194.1	259.23	17.179	
12,300.0	9,194.0	9,203.0	9,199.2	83.3	226.7	89.47	-659.7	7,457.1	4,353.6	4,094.3	259.29	16.790	
12,400.0	9,194.0	9,203.1	9,199.2	85.6	226.7	89.47	-659.7	7,457.1	4,253.9	3,994.6	259.36	16.401	
12,500.0	9,194.0	9,203.1	9,199.3	87.8	226.7	89.47	-659.7	7,457.1	4,154.2	3,894.8	259.44	16.013	
12,600.0	9,194.0	9,203.1	9,199.3	90.1	226.7	89.47	-659.7	7,457.1	4,054.6	3,795.0	259.52	15.623	
12,700.0	9,194.0	9,203.1	9,199.3	92.3	226.7	89.48	-659.7	7,457.1	3,954.9	3,695.3	259.61	15.234	
12,800.0	9,194.0	9,203.1	9,199.3	94.6	226.7	89.48	-659.7	7,457.1	3,855.3	3,595.6	259.70	14.845	
12,900.0	9,194.0	9,203.1	9,199.3	96.9	226.7	89.48	-659.7	7,457.1	3,755.6	3,495.8	259.81	14.456	
13,000.0	9,194.0	9,203.1	9,199.3	99.2	226.7	89.48	-659.7	7,457.1	3,656.0	3,396.1	259.92	14.066	
13,100.0	9,194.0	9,203.1	9,199.3	101.5	226.7	89.48	-659.7	7,457.1	3,556.5	3,296.4	260.05	13.676	
13,200.0	9,194.0	9,203.1	9,199.3	103.8	226.7	89.48	-659.7	7,457.1	3,456.9	3,196.7	260.19	13.286	
13,300.0	9,194.0	9,203.1	9,199.3	106.1	226.7	89.48	-659.7	7,457.1	3,357.4	3,097.0	260.34	12.896	
13,400.0	9,194.0	9,203.1	9,199.3	108.4	226.7	89.48	-659.7	7,457.1	3,257.9	2,997.4	260.51	12.506	
13,500.0	9,194.0	9,203.1	9,199.3	110.7	226.7	89.48	-659.7	7,457.1	3,158.4	2,897.7	260.69	12.115	
13,600.0	9,194.0	9,203.1	9,199.3	113.0	226.7	89.48	-659.7	7,457.1	3,059.0	2,798.1	260.90	11.725	
13,700.0	9,194.0	9,203.1	9,199.3	115.3	226.7	89.48	-659.7	7,457.1	2,959.6	2,698.5	261.13	11.334	
13,800.0	9,194.0	9,203.1	9,199.3	117.7	226.7	89.48	-659.7	7,457.1	2,860.2	2,598.8	261.38	10.943	
13,900.0	9,194.0	9,203.1	9,199.3	120.0	226.7	89.48	-659.7	7,457.1	2,760.9	2,499.3	261.67	10.551	
14,000.0	9,194.0	9,203.1	9,199.3	122.3	226.7	89.49	-659.7	7,457.1	2,661.7	2,399.7	261.99	10.160	
14,100.0	9,194.0	9,203.1	9,199.3	124.7	226.7	89.49	-659.7	7,457.1	2,562.5	2,300.1	262.35	9.768	
14,200.0	9,194.0	9,203.1	9,199.3	127.0	226.7	89.49	-659.7	7,457.1	2,463.3	2,200.6	262.75	9.375	
14,300.0	9,194.0	9,203.1	9,199.3	129.4	226.7	89.49	-659.7	7,457.1	2,364.3	2,101.1	263.21	8.982	
14,400.0	9,194.0	9,203.1	9,199.3	131.7	226.7	89.49	-659.7	7,457.1	2,265.3	2,001.6	263.73	8.589	
14,500.0	9,194.0	9,203.1	9,199.3	134.1	226.7	89.49	-659.7	7,457.1	2,166.4	1,902.1	264.33	8.196	
14,600.0	9,194.0	9,203.2	9,199.3	136.4	226.7	89.49	-659.7	7,457.1	2,067.7	1,802.6	265.01	7.802	
14,700.0	9,194.0	9,203.2	9,199.4	138.8	226.7	89.49	-659.7	7,457.1	1,969.0	1,703.2	265.80	7.408	
14,800.0	9,194.0	9,203.2	9,199.4	141.1	226.7	89.49	-659.7	7,457.1	1,870.5	1,603.8	266.70	7.013	
14,900.0	9,194.0	9,203.2	9,199.4	143.5	226.7	89.49	-659.7	7,457.1	1,772.2	1,504.4	267.76	6.619	
15,000.0	9,194.0	9,203.2	9,199.4	145.8	226.7	89.49	-659.7	7,457.1	1,674.0	1,405.0	268.99	6.223	
15,100.0	9,194.0	9,203.2	9,199.4	148.2	226.7	89.49	-659.7	7,457.1	1,576.1	1,305.7	270.44	5.828	
15,200.0	9,194.0	9,203.2	9,199.4	150.6	226.7	89.49	-659.7	7,457.1	1,478.5	1,206.3	272.15	5.433	
15,300.0	9,194.0	9,203.2	9,199.4	152.9	226.7	89.50	-659.7	7,457.1	1,381.2	1,107.0	274.18	5.038	
15,400.0	9,194.0	9,203.2	9,199.4	155.3	226.7	89.50	-659.7	7,457.1	1,284.3	1,007.7	276.61	4.643	
15,500.0	9,194.0	9,203.2	9,199.4	157.7	226.7	89.50	-659.7	7,457.1	1,188.0	908.4	279.54	4.250	
15,600.0	9,194.0	9,203.2	9,199.4	160.0	226.7	89.50	-659.7	7,457.1	1,092.3	809.2	283.10	3.858	
15,700.0	9,194.0	9,203.2	9,199.4	162.4	226.7	89.50	-659.7	7,457.1	997.4	710.0	287.47	3.470	
15,800.0	9,194.0	9,203.2	9,199.4	164.8	226.7	89.50	-659.7	7,457.1	903.7	610.8	292.87	3.086	
15,900.0	9,194.0	9,203.2	9,199.4	167.2	226.7	89.50	-659.7	7,457.1	811.4	511.8	299.63	2.708	
16,000.0	9,194.0	9,203.2	9,199.4	169.5	226.7	89.50	-659.7	7,457.1	721.2	413.1	308.17	2.340	
16,100.0	9,194.0	9,203.2	9,199.4	171.9	226.7	89.50	-659.7	7,457.1	634.0	315.0	319.04	1.987	
16,200.0	9,194.0	9,203.2	9,199.4	174.3	226.7	89.50	-659.7	7,457.1	551.2	218.2	332.92	1.655	
16,300.0	9,194.0	9,203.2	9,199.4	176.7	226.7	89.50	-659.7	7,457.1	474.9	124.5	350.42	1.355	Level 3
16,400.0	9,194.0	9,203.2	9,199.4	179.1	226.7	89.50	-659.7	7,457.1	409.1	37.7	371.37	1.101	Level 3
16,500.0	9,194.0	9,203.2	9,199.4	181.4	226.7	89.50	-659.7	7,457.1	359.3	-33.8	393.17	0.914	Level 3
16,600.0	9,194.0	9,203.2	9,199.4	183.8	226.7	89.51	-659.7	7,457.1	333.0	-75.8	408.84	0.815	Level 3

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - Parkway ST 36 #1 - AWP - INC ONLY — **Offset Site Error:** 0.0 usft

Survey Program: 355-INC-ONLY — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
16,641.1	9,194.0	9,203.2	9,199.4	184.8	226.7	89.51	-659.7	7,457.1	330.5	-81.0	411.47	0.803	Level 3, CC, ES, SF
16,700.0	9,194.0	9,203.2	9,199.4	186.2	226.7	89.51	-659.7	7,457.1	335.7	-74.8	410.50	0.818	Level 3
16,800.0	9,194.0	9,203.2	9,199.4	188.6	226.7	89.51	-659.7	7,457.1	366.7	-31.6	398.32	0.921	Level 3
16,900.0	9,194.0	9,203.3	9,199.4	191.0	226.7	89.51	-659.7	7,457.1	419.8	39.9	379.98	1.105	Level 3
17,000.0	9,194.0	9,203.3	9,199.5	193.4	226.7	89.51	-659.7	7,457.1	487.9	126.0	361.86	1.348	Level 3
17,100.0	9,194.0	9,203.3	9,199.5	195.8	226.7	89.51	-659.7	7,457.1	565.5	219.1	346.41	1.633	
17,200.0	9,194.0	9,203.3	9,199.5	198.1	226.7	89.51	-659.7	7,457.1	649.3	315.4	333.91	1.945	
17,300.0	9,194.0	9,203.3	9,199.5	200.5	226.7	89.51	-659.7	7,457.1	737.2	413.2	323.92	2.276	
17,400.0	9,194.0	9,203.3	9,199.5	202.9	226.7	89.51	-659.7	7,457.1	827.8	511.8	315.93	2.620	
17,500.0	9,194.0	9,203.3	9,199.5	205.3	226.7	89.51	-659.7	7,457.1	920.3	610.8	309.47	2.974	
17,600.0	9,194.0	9,203.3	9,199.5	207.7	226.7	89.51	-659.7	7,457.1	1,014.3	710.1	304.20	3.334	
17,700.0	9,194.0	9,203.3	9,199.5	210.1	226.7	89.51	-659.7	7,457.1	1,109.3	809.4	299.85	3.699	
17,800.0	9,194.0	9,203.3	9,199.5	212.5	226.7	89.51	-659.7	7,457.1	1,205.1	908.9	296.23	4.068	
17,900.0	9,194.0	9,203.3	9,199.5	214.9	226.7	89.52	-659.7	7,457.1	1,301.6	1,008.4	293.18	4.440	
18,000.0	9,194.0	9,203.3	9,199.5	217.3	226.7	89.52	-659.7	7,457.1	1,398.5	1,107.9	290.59	4.813	
18,100.0	9,194.0	9,203.3	9,199.5	219.7	226.7	89.52	-659.7	7,457.1	1,495.9	1,207.5	288.37	5.187	
18,200.0	9,194.0	9,203.3	9,199.5	222.1	226.7	89.52	-659.7	7,457.1	1,593.6	1,307.1	286.46	5.563	
18,300.0	9,194.0	9,203.3	9,199.5	224.5	226.7	89.52	-659.7	7,457.1	1,691.5	1,406.7	284.80	5.939	
18,400.0	9,194.0	9,203.3	9,199.5	226.9	226.7	89.52	-659.7	7,457.1	1,789.7	1,506.3	283.35	6.316	
18,500.0	9,194.0	9,203.3	9,199.5	229.3	226.7	89.52	-659.7	7,457.1	1,888.1	1,606.0	282.09	6.693	
18,600.0	9,194.0	9,203.3	9,199.5	231.7	226.7	89.52	-659.7	7,457.1	1,986.6	1,705.6	280.97	7.071	
18,700.0	9,194.0	9,203.3	9,199.5	234.1	226.7	89.52	-659.7	7,457.1	2,085.3	1,805.3	279.98	7.448	
18,800.0	9,194.0	9,203.3	9,199.5	236.5	226.7	89.52	-659.7	7,457.1	2,184.1	1,905.0	279.11	7.825	
18,900.0	9,194.0	9,203.3	9,199.5	238.9	226.7	89.52	-659.7	7,457.1	2,283.0	2,004.6	278.32	8.203	
19,000.0	9,194.0	9,203.3	9,199.5	241.3	226.7	89.52	-659.7	7,457.1	2,382.0	2,104.3	277.63	8.580	
19,100.0	9,194.0	9,203.4	9,199.5	243.7	226.7	89.52	-659.7	7,457.1	2,481.0	2,204.0	277.00	8.957	
19,200.0	9,194.0	9,203.4	9,199.6	246.1	226.7	89.53	-659.7	7,457.1	2,580.2	2,303.7	276.44	9.334	
19,300.0	9,194.0	9,203.4	9,199.6	248.5	226.7	89.53	-659.7	7,457.1	2,679.4	2,403.4	275.93	9.710	
19,400.0	9,194.0	9,203.4	9,199.6	250.9	226.7	89.53	-659.7	7,457.1	2,778.6	2,503.2	275.48	10.087	
19,500.0	9,194.0	9,203.4	9,199.6	253.3	226.7	89.53	-659.7	7,457.1	2,878.0	2,602.9	275.07	10.463	
19,600.0	9,194.0	9,203.4	9,199.6	255.7	226.7	89.53	-659.7	7,457.1	2,977.3	2,702.6	274.70	10.839	
19,700.0	9,194.0	9,203.4	9,199.6	258.1	226.7	89.53	-659.7	7,457.1	3,076.7	2,802.4	274.36	11.214	
19,800.0	9,194.0	9,203.4	9,199.6	260.5	226.7	89.53	-659.7	7,457.1	3,176.2	2,902.1	274.06	11.589	
19,847.1	9,194.0	9,203.4	9,199.6	261.6	226.7	89.53	-659.7	7,457.1	3,223.0	2,949.1	273.92	11.766	

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - xxIRONHORSE 35-36 FED STATE COM 174H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-179.88	-99.0	-0.2	99.1				
100.0	100.0	95.0	95.0	0.1	0.1	-179.88	-99.0	-0.2	99.0	98.7	0.25	391.041	
200.0	200.0	195.0	195.0	0.5	0.5	-179.88	-99.0	-0.2	99.0	98.0	0.96	103.242	
300.0	300.0	295.0	295.0	0.8	0.8	-179.88	-99.0	-0.2	99.0	97.3	1.68	59.074	
400.0	400.0	395.0	395.0	1.2	1.2	-179.88	-99.0	-0.2	99.0	96.6	2.39	41.374	
500.0	500.0	495.0	495.0	1.6	1.6	-179.88	-99.0	-0.2	99.0	95.9	3.11	31.836	
600.0	600.0	595.0	595.0	1.9	1.9	-179.88	-99.0	-0.2	99.0	95.2	3.83	25.871	
700.0	700.0	695.0	695.0	2.3	2.3	-179.88	-99.0	-0.2	99.0	94.5	4.54	21.789	
800.0	800.0	795.0	795.0	2.6	2.6	-179.88	-99.0	-0.2	99.0	93.7	5.26	18.819	
900.0	900.0	895.0	895.0	3.0	3.0	-179.88	-99.0	-0.2	99.0	93.0	5.98	16.562	
1,000.0	1,000.0	995.0	995.0	3.4	3.3	-179.88	-99.0	-0.2	99.0	92.3	6.69	14.788	
1,100.0	1,100.0	1,095.0	1,095.0	3.7	3.7	-179.88	-99.0	-0.2	99.0	91.6	7.41	13.358	
1,200.0	1,200.0	1,195.0	1,195.0	4.1	4.1	-179.88	-99.0	-0.2	99.0	90.9	8.13	12.180	
1,300.0	1,300.0	1,295.0	1,295.0	4.4	4.4	-179.88	-99.0	-0.2	99.0	90.2	8.85	11.192	
1,400.0	1,400.0	1,395.0	1,395.0	4.8	4.8	-179.88	-99.0	-0.2	99.0	89.4	9.56	10.353	
1,500.0	1,500.0	1,495.0	1,495.0	5.1	5.1	-179.88	-99.0	-0.2	99.0	88.7	10.28	9.631	
1,600.0	1,600.0	1,595.0	1,595.0	5.5	5.5	-179.88	-99.0	-0.2	99.0	88.0	11.00	9.003	
1,700.0	1,700.0	1,695.0	1,695.0	5.9	5.9	-179.88	-99.0	-0.2	99.0	87.3	11.71	8.452	
1,800.0	1,800.0	1,795.0	1,795.0	6.2	6.2	-179.88	-99.0	-0.2	99.0	86.6	12.43	7.965	
1,900.0	1,900.0	1,895.0	1,895.0	6.6	6.6	-179.88	-99.0	-0.2	99.0	85.9	13.15	7.530	
2,000.0	2,000.0	1,995.0	1,995.0	6.9	6.9	-179.88	-99.0	-0.2	99.0	85.1	13.86	7.141	CC, ES
2,100.0	2,100.0	2,091.9	2,091.8	7.3	7.3	-179.71	-100.4	-0.5	100.5	85.9	14.55	6.908	
2,200.0	2,200.0	2,188.3	2,188.2	7.7	7.6	-179.20	-105.1	-1.5	105.3	90.1	15.20	6.927	
2,300.0	2,300.0	2,284.4	2,283.9	8.0	7.9	-178.43	-112.8	-3.1	113.4	97.6	15.84	7.159	
2,400.0	2,400.0	2,379.8	2,378.7	8.4	8.2	-177.52	-123.6	-5.3	124.8	108.3	16.46	7.582	
2,500.0	2,500.0	2,474.4	2,472.2	8.7	8.5	-176.58	-137.4	-8.2	139.5	122.4	17.06	8.175	
2,600.0	2,600.0	2,571.7	2,568.0	9.1	8.9	-175.67	-153.8	-11.6	156.6	138.8	17.72	8.836	
2,700.0	2,700.0	2,670.1	2,665.0	9.4	9.2	-174.93	-170.5	-15.1	173.8	155.4	18.40	9.443	
2,800.0	2,800.0	2,768.6	2,762.0	9.8	9.6	-174.32	-187.3	-18.6	191.1	172.0	19.09	10.007	
2,900.0	2,900.0	2,867.4	2,859.3	10.1	10.0	-25.33	-204.1	-22.1	206.8	187.0	19.77	10.460	
3,000.0	2,999.8	2,966.6	2,956.9	10.5	10.3	-25.36	-220.9	-25.7	219.4	198.9	20.44	10.735	
3,050.0	3,049.7	3,016.3	3,005.9	10.6	10.5	-25.52	-229.4	-27.4	224.5	203.7	20.77	10.809	
3,100.0	3,099.5	3,066.1	3,054.9	10.8	10.7	-25.76	-237.8	-29.2	229.2	208.1	21.11	10.860	
3,200.0	3,199.1	3,165.6	3,152.9	11.1	11.1	-26.22	-254.7	-32.7	238.7	217.0	21.79	10.957	
3,300.0	3,298.7	3,265.1	3,251.0	11.5	11.5	-26.65	-271.7	-36.2	248.2	225.8	22.47	11.046	
3,400.0	3,398.4	3,364.7	3,349.0	11.8	11.9	-27.04	-288.6	-39.8	257.8	234.6	23.16	11.129	
3,500.0	3,498.0	3,464.2	3,447.0	12.1	12.3	-27.40	-305.5	-43.3	267.3	243.4	23.85	11.205	
3,600.0	3,597.6	3,563.7	3,545.0	12.5	12.7	-27.74	-322.4	-46.8	276.8	252.3	24.55	11.276	
3,700.0	3,697.2	3,663.2	3,643.0	12.8	13.1	-28.06	-339.3	-50.4	286.4	261.1	25.25	11.343	
3,800.0	3,796.8	3,762.8	3,741.1	13.2	13.5	-28.36	-356.3	-53.9	295.9	270.0	25.95	11.404	
3,900.0	3,896.4	3,862.3	3,839.1	13.5	14.0	-28.64	-373.2	-57.4	305.5	278.8	26.65	11.462	
4,000.0	3,996.1	3,961.8	3,937.1	13.9	14.4	-28.90	-390.1	-61.0	315.1	287.7	27.36	11.515	
4,100.0	4,095.7	4,061.4	4,035.1	14.2	14.8	-29.14	-407.0	-64.5	324.6	296.6	28.07	11.566	
4,200.0	4,195.3	4,160.9	4,133.1	14.6	15.2	-29.37	-423.9	-68.0	334.2	305.4	28.78	11.613	
4,300.0	4,294.9	4,260.4	4,231.2	15.0	15.6	-29.59	-440.9	-71.5	343.8	314.3	29.49	11.657	
4,400.0	4,394.5	4,360.0	4,329.2	15.3	16.1	-29.80	-457.8	-75.1	353.4	323.2	30.21	11.698	
4,500.0	4,494.2	4,459.5	4,427.2	15.7	16.5	-30.00	-474.7	-78.6	363.0	332.1	30.93	11.737	
4,600.0	4,593.8	4,559.0	4,525.2	16.0	16.9	-30.18	-491.6	-82.1	372.6	340.9	31.64	11.774	
4,700.0	4,693.4	4,658.6	4,623.2	16.4	17.3	-30.36	-508.5	-85.7	382.2	349.8	32.36	11.809	
4,800.0	4,793.0	4,758.1	4,721.2	16.8	17.8	-30.53	-525.4	-89.2	391.8	358.7	33.09	11.841	
4,900.0	4,892.6	4,857.6	4,819.3	17.1	18.2	-30.68	-542.4	-92.7	401.4	367.6	33.81	11.872	
5,000.0	4,992.3	4,957.2	4,917.3	17.5	18.6	-30.84	-559.3	-96.3	411.0	376.5	34.53	11.902	

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

Colgate Operating

Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - xxIRONHORSE 35-36 FED STATE COM 174H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,091.9	5,056.7	5,015.3	17.9	19.1	-30.98	-576.2	-99.8	420.6	385.4	35.26	11.929	
5,200.0	5,191.5	5,156.2	5,113.3	18.2	19.5	-31.12	-593.1	-103.3	430.2	394.3	35.99	11.956	
5,300.0	5,291.1	5,255.7	5,211.3	18.6	19.9	-31.25	-610.0	-106.9	439.9	403.1	36.71	11.981	
5,400.0	5,390.7	5,355.3	5,309.4	19.0	20.4	-31.38	-627.0	-110.4	449.5	412.0	37.44	12.004	
5,500.0	5,490.4	5,454.8	5,407.4	19.3	20.8	-31.50	-643.9	-113.9	459.1	420.9	38.17	12.027	
5,600.0	5,590.0	5,554.3	5,505.4	19.7	21.3	-31.62	-660.8	-117.4	468.7	429.8	38.90	12.049	
5,700.0	5,689.6	5,653.9	5,603.4	20.1	21.7	-31.73	-677.7	-121.0	478.4	438.7	39.64	12.069	
5,800.0	5,789.2	5,753.4	5,701.4	20.4	22.1	-31.84	-694.6	-124.5	488.0	447.6	40.37	12.089	
5,900.0	5,888.8	5,852.9	5,799.5	20.8	22.6	-31.94	-711.6	-128.0	497.6	456.5	41.10	12.107	
6,000.0	5,988.5	5,952.5	5,897.5	21.2	23.0	-32.04	-728.5	-131.6	507.3	465.4	41.84	12.125	
6,100.0	6,088.1	6,052.0	5,995.5	21.6	23.4	-32.14	-745.4	-135.1	516.9	474.3	42.57	12.142	
6,200.0	6,187.7	6,151.5	6,093.5	21.9	23.9	-32.23	-762.3	-138.6	526.5	483.2	43.31	12.158	
6,300.0	6,287.3	6,251.1	6,191.5	22.3	24.3	-32.32	-779.2	-142.2	536.2	492.1	44.04	12.174	
6,400.0	6,386.9	6,350.6	6,289.6	22.7	24.8	-32.41	-796.2	-145.7	545.8	501.0	44.78	12.189	
6,500.0	6,486.6	6,450.1	6,387.6	23.1	25.2	-32.49	-813.1	-149.2	555.4	509.9	45.52	12.203	
6,600.0	6,586.2	6,549.7	6,485.6	23.4	25.7	-32.57	-830.0	-152.7	565.1	518.8	46.25	12.217	
6,700.0	6,685.8	6,649.2	6,583.6	23.8	26.1	-32.65	-846.9	-156.3	574.7	527.7	46.99	12.230	
6,727.2	6,712.9	6,676.2	6,610.2	23.9	26.2	-32.67	-851.5	-157.2	577.3	530.1	47.19	12.233	
6,800.0	6,785.5	6,748.6	6,681.6	24.2	26.5	-32.76	-863.8	-159.8	585.1	537.4	47.73	12.260	
6,900.0	6,885.4	6,847.7	6,779.2	24.5	27.0	-32.75	-880.7	-163.3	598.4	549.9	48.45	12.349	
6,977.2	6,962.5	6,923.9	6,854.2	24.8	27.3	178.80	-893.6	-166.0	610.6	561.6	49.00	12.460	
7,000.0	6,985.4	6,946.4	6,876.3	24.9	27.4	178.89	-897.4	-166.8	614.4	565.3	49.16	12.499	
7,100.0	7,085.4	7,052.6	6,980.9	25.2	27.9	179.26	-915.3	-170.5	631.2	581.3	49.93	12.642	
7,200.0	7,185.4	7,179.1	7,106.2	25.6	28.4	179.60	-932.5	-174.2	644.8	594.0	50.83	12.686	
7,300.0	7,285.4	7,307.1	7,233.6	25.9	28.9	179.83	-944.5	-176.6	654.2	602.5	51.66	12.664	
7,400.0	7,385.4	7,435.8	7,362.1	26.2	29.4	179.95	-950.9	-178.0	659.1	606.7	52.40	12.580	
7,500.0	7,485.4	7,554.1	7,480.4	26.6	29.8	179.97	-952.0	-178.2	660.0	606.9	53.07	12.437	
7,600.0	7,585.4	7,654.1	7,580.4	26.9	30.0	179.97	-952.0	-178.2	660.0	606.3	53.74	12.282	
7,700.0	7,685.4	7,754.1	7,680.4	27.3	30.3	179.97	-952.0	-178.2	660.0	605.6	54.41	12.130	
7,800.0	7,785.4	7,854.1	7,780.4	27.6	30.6	179.97	-952.0	-178.2	660.0	604.9	55.08	11.982	
7,900.0	7,885.4	7,954.1	7,880.4	27.9	30.9	179.97	-952.0	-178.2	660.0	604.2	55.76	11.837	
8,000.0	7,985.4	8,054.1	7,980.4	28.3	31.2	179.97	-952.0	-178.2	660.0	603.6	56.43	11.696	
8,100.0	8,085.4	8,154.1	8,080.4	28.6	31.5	179.97	-952.0	-178.2	660.0	602.9	57.11	11.557	
8,200.0	8,185.4	8,254.1	8,180.4	29.0	31.8	179.97	-952.0	-178.2	660.0	602.2	57.78	11.422	
8,300.0	8,285.4	8,354.1	8,280.4	29.3	32.1	179.97	-952.0	-178.2	660.0	601.5	58.46	11.289	
8,400.0	8,385.4	8,454.1	8,380.4	29.6	32.4	179.97	-952.0	-178.2	660.0	600.9	59.14	11.160	
8,500.0	8,485.4	8,554.1	8,480.4	30.0	32.8	179.97	-952.0	-178.2	660.0	600.2	59.82	11.033	
8,600.0	8,585.4	8,654.1	8,580.4	30.3	33.1	179.97	-952.0	-178.2	660.0	599.5	60.50	10.909	
8,700.0	8,685.4	8,754.1	8,680.4	30.7	33.4	179.97	-952.0	-178.2	660.0	598.8	61.18	10.787	
8,731.1	8,716.5	8,785.2	8,711.5	30.8	33.5	179.97	-952.0	-178.2	660.0	598.6	61.40	10.750	
8,750.0	8,735.4	8,804.1	8,730.4	30.8	33.5	89.72	-952.0	-178.2	660.0	598.5	61.52	10.728	
8,775.0	8,760.3	8,829.0	8,755.3	30.9	33.6	89.86	-952.0	-178.2	660.0	598.3	61.68	10.700	
8,789.9	8,775.1	8,843.8	8,770.1	31.0	33.6	90.00	-952.0	-178.2	660.0	598.2	61.78	10.683	
8,800.0	8,785.1	8,853.8	8,780.1	31.0	33.7	90.12	-952.0	-178.2	660.0	598.1	61.84	10.672	
8,825.0	8,809.8	8,878.5	8,804.8	31.1	33.7	90.48	-952.0	-178.2	660.0	598.0	61.99	10.646	
8,850.0	8,834.1	8,902.8	8,829.1	31.2	33.8	90.93	-952.0	-178.2	660.1	597.9	62.14	10.622	
8,875.0	8,858.2	8,926.9	8,853.2	31.2	33.9	91.48	-952.0	-178.2	660.2	597.9	62.28	10.600	
8,900.0	8,881.9	8,950.6	8,876.9	31.3	34.0	92.11	-952.0	-178.2	660.5	598.1	62.42	10.581	
8,925.0	8,905.1	8,973.8	8,900.1	31.4	34.0	92.81	-952.0	-178.2	660.9	598.4	62.56	10.565	
8,950.0	8,927.8	8,996.5	8,922.8	31.4	34.1	93.55	-952.0	-178.2	661.6	598.9	62.69	10.553	
8,975.0	8,949.9	9,018.6	8,944.9	31.5	34.2	94.33	-952.0	-178.2	662.5	599.7	62.82	10.546	
9,000.0	8,971.4	9,040.1	8,966.4	31.6	34.3	95.13	-952.0	-178.2	663.7	600.8	62.94	10.545	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - xxIRONHORSE 35-36 FED STATE COM 174H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,025.0	8,992.2	9,060.9	8,987.2	31.6	34.3	95.93	-952.0	-178.2	665.3	602.2	63.07	10.549	
9,050.0	9,012.2	9,080.9	9,007.2	31.7	34.4	96.72	-952.0	-178.2	667.4	604.2	63.19	10.561	
9,075.0	9,031.4	9,100.1	9,026.4	31.7	34.4	97.46	-952.0	-178.2	669.9	606.6	63.32	10.580	
9,100.0	9,049.8	9,118.4	9,044.8	31.8	34.5	98.15	-952.0	-178.2	673.0	609.6	63.45	10.608	
9,125.0	9,067.2	9,135.9	9,062.2	31.8	34.5	98.76	-952.0	-178.2	676.8	613.2	63.58	10.645	
9,150.0	9,083.7	9,152.4	9,078.7	31.8	34.6	99.28	-952.0	-178.2	681.2	617.5	63.71	10.691	
9,175.0	9,099.1	9,167.8	9,094.1	31.9	34.6	99.68	-952.0	-178.2	686.3	622.5	63.85	10.748	
9,200.0	9,113.6	9,182.3	9,108.6	31.9	34.7	99.96	-952.0	-178.2	692.2	628.2	64.00	10.816	
9,225.0	9,126.9	9,195.6	9,121.9	32.0	34.7	100.09	-952.0	-178.2	698.9	634.7	64.15	10.895	
9,250.0	9,139.1	9,207.8	9,134.1	32.1	34.8	100.06	-952.0	-178.2	706.3	642.0	64.30	10.985	
9,275.0	9,150.2	9,218.8	9,145.2	32.1	34.8	99.86	-952.0	-178.2	714.6	650.2	64.46	11.086	
9,300.0	9,160.0	9,228.7	9,155.0	32.3	34.8	99.46	-952.0	-178.2	723.8	659.1	64.62	11.200	
9,325.0	9,168.7	9,237.4	9,163.7	32.4	34.9	98.87	-952.0	-178.2	733.7	668.9	64.79	11.325	
9,350.0	9,176.1	9,244.8	9,171.1	32.5	34.9	98.05	-952.0	-178.2	744.4	679.5	64.95	11.461	
9,375.0	9,182.2	9,250.9	9,177.2	32.6	34.9	97.02	-952.0	-178.2	755.9	690.8	65.12	11.609	
9,400.0	9,187.1	9,255.8	9,182.1	32.8	34.9	95.75	-952.0	-178.2	768.2	702.9	65.28	11.767	
9,425.0	9,190.7	9,259.4	9,185.7	32.9	34.9	94.25	-952.0	-178.2	781.1	715.7	65.44	11.936	
9,450.0	9,193.0	9,261.6	9,188.0	33.0	34.9	92.50	-952.0	-178.2	794.7	729.1	65.60	12.115	
9,475.0	9,193.9	9,262.6	9,188.9	33.2	34.9	90.52	-952.0	-178.2	808.9	743.2	65.75	12.302	
9,481.1	9,194.0	9,262.7	9,189.0	33.2	34.9	90.00	-952.0	-178.2	812.5	746.7	65.79	12.350	
9,500.0	9,194.0	9,262.7	9,189.0	33.4	34.9	90.00	-952.0	-178.2	823.6	757.7	65.90	12.498	
9,600.0	9,194.0	9,262.7	9,189.0	34.1	34.9	90.00	-952.0	-178.2	887.1	820.6	66.49	13.342	
9,700.0	9,194.0	9,262.7	9,189.0	35.0	34.9	90.00	-952.0	-178.2	956.8	889.8	67.04	14.272	
9,800.0	9,194.0	9,262.7	9,189.0	36.0	34.9	90.00	-952.0	-178.2	1,031.5	964.0	67.53	15.274	
9,900.0	9,194.0	10,761.4	10,000.0	37.2	40.4	140.86	-956.4	714.5	1,045.6	991.5	54.14	19.311	
10,000.0	9,194.0	10,861.4	10,000.0	38.5	41.6	140.86	-956.8	814.5	1,045.6	989.9	55.68	18.780	
10,100.0	9,194.0	10,961.4	10,000.0	39.9	42.9	140.86	-957.3	914.5	1,045.6	988.3	57.36	18.229	
10,200.0	9,194.0	11,061.4	10,000.0	41.4	44.2	140.86	-957.8	1,014.5	1,045.6	986.4	59.18	17.669	
10,300.0	9,194.0	11,161.4	10,000.0	42.9	45.7	140.86	-958.3	1,114.5	1,045.6	984.5	61.12	17.108	
10,400.0	9,194.0	11,261.4	10,000.0	44.6	47.2	140.86	-958.8	1,214.5	1,045.6	982.4	63.17	16.552	
10,500.0	9,194.0	11,361.4	10,000.0	46.3	48.8	140.86	-959.3	1,314.5	1,045.6	980.3	65.33	16.006	
10,600.0	9,194.0	11,461.4	10,000.0	48.0	50.5	140.86	-959.8	1,414.5	1,045.6	978.0	67.57	15.474	
10,700.0	9,194.0	11,561.4	10,000.0	49.9	52.3	140.86	-960.3	1,514.5	1,045.6	975.7	69.91	14.958	
10,800.0	9,194.0	11,661.4	10,000.0	51.7	54.0	140.86	-960.7	1,614.5	1,045.6	973.3	72.31	14.460	
10,900.0	9,194.0	11,761.4	10,000.0	53.7	55.9	140.86	-961.2	1,714.5	1,045.6	970.8	74.79	13.982	
11,000.0	9,194.0	11,861.4	10,000.0	55.6	57.8	140.86	-961.7	1,814.5	1,045.6	968.3	77.32	13.523	
11,100.0	9,194.0	11,961.4	10,000.0	57.6	59.7	140.86	-962.2	1,914.5	1,045.6	965.7	79.91	13.085	
11,200.0	9,194.0	12,061.4	10,000.0	59.6	61.6	140.86	-962.7	2,014.5	1,045.6	963.1	82.55	12.666	
11,300.0	9,194.0	12,161.4	10,000.0	61.7	63.6	140.86	-963.2	2,114.5	1,045.6	960.4	85.24	12.267	
11,400.0	9,194.0	12,261.4	10,000.0	63.8	65.6	140.86	-963.7	2,214.5	1,045.6	957.6	87.97	11.886	
11,500.0	9,194.0	12,361.4	10,000.0	65.9	67.7	140.86	-964.2	2,314.5	1,045.6	954.9	90.74	11.524	
11,600.0	9,194.0	12,461.4	10,000.0	68.0	69.7	140.86	-964.7	2,414.5	1,045.6	952.1	93.54	11.179	
11,700.0	9,194.0	12,561.4	10,000.0	70.1	71.8	140.86	-965.1	2,514.5	1,045.6	949.2	96.37	10.850	
11,800.0	9,194.0	12,661.4	10,000.0	72.3	73.9	140.86	-965.6	2,614.5	1,045.6	946.4	99.23	10.537	
11,900.0	9,194.0	12,761.4	10,000.0	74.5	76.0	140.86	-966.1	2,714.5	1,045.6	943.5	102.12	10.239	
12,000.0	9,194.0	12,861.4	10,000.0	76.7	78.2	140.86	-966.6	2,814.5	1,045.6	940.6	105.03	9.956	
12,100.0	9,194.0	12,961.4	10,000.0	78.9	80.3	140.86	-967.1	2,914.5	1,045.6	937.7	107.96	9.685	
12,200.0	9,194.0	13,061.4	10,000.0	81.1	82.5	140.86	-967.6	3,014.5	1,045.6	934.7	110.92	9.427	
12,300.0	9,194.0	13,161.4	10,000.0	83.3	84.7	140.86	-968.1	3,114.5	1,045.6	931.7	113.89	9.181	
12,400.0	9,194.0	13,261.4	10,000.0	85.6	86.9	140.86	-968.6	3,214.5	1,045.6	928.7	116.88	8.946	
12,500.0	9,194.0	13,361.4	10,000.0	87.8	89.1	140.86	-969.0	3,314.5	1,045.6	925.7	119.89	8.722	
12,600.0	9,194.0	13,461.4	10,000.0	90.1	91.3	140.86	-969.5	3,414.5	1,045.6	922.7	122.91	8.507	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - xxIRONHORSE 35-36 FED STATE COM 174H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Rule Assigned: Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	9,194.0	13,561.4	10,000.0	92.3	93.6	140.86	-970.0	3,514.5	1,045.6	919.7	125.94	8.302	
12,800.0	9,194.0	13,661.4	10,000.0	94.6	95.8	140.86	-970.5	3,614.5	1,045.6	916.6	128.99	8.106	
12,900.0	9,194.0	13,761.4	10,000.0	96.9	98.1	140.86	-971.0	3,714.5	1,045.6	913.6	132.05	7.918	
13,000.0	9,194.0	13,861.4	10,000.0	99.2	100.3	140.86	-971.5	3,814.5	1,045.6	910.5	135.12	7.738	
13,100.0	9,194.0	13,961.4	10,000.0	101.5	102.6	140.86	-972.0	3,914.5	1,045.6	907.4	138.20	7.566	
13,200.0	9,194.0	14,061.4	10,000.0	103.8	104.9	140.86	-972.5	4,014.5	1,045.6	904.3	141.29	7.400	
13,300.0	9,194.0	14,161.4	10,000.0	106.1	107.1	140.86	-972.9	4,114.5	1,045.6	901.2	144.39	7.241	
13,400.0	9,194.0	14,261.4	10,000.0	108.4	109.4	140.86	-973.4	4,214.5	1,045.6	898.1	147.50	7.089	
13,500.0	9,194.0	14,361.4	10,000.0	110.7	111.7	140.86	-973.9	4,314.5	1,045.6	895.0	150.62	6.942	
13,600.0	9,194.0	14,461.4	10,000.0	113.0	114.0	140.86	-974.4	4,414.5	1,045.6	891.9	153.75	6.801	
13,700.0	9,194.0	14,561.4	10,000.0	115.3	116.3	140.86	-974.9	4,514.5	1,045.6	888.7	156.88	6.665	
13,800.0	9,194.0	14,661.4	10,000.0	117.7	118.6	140.86	-975.4	4,614.5	1,045.6	885.6	160.02	6.534	
13,900.0	9,194.0	14,761.4	10,000.0	120.0	120.9	140.86	-975.9	4,714.5	1,045.6	882.5	163.16	6.409	
14,000.0	9,194.0	14,861.4	10,000.0	122.3	123.2	140.86	-976.4	4,814.5	1,045.6	879.3	166.31	6.287	
14,100.0	9,194.0	14,961.4	10,000.0	124.7	125.6	140.86	-976.9	4,914.5	1,045.6	876.1	169.47	6.170	
14,200.0	9,194.0	15,061.4	10,000.0	127.0	127.9	140.86	-977.3	5,014.5	1,045.6	873.0	172.63	6.057	
14,300.0	9,194.0	15,161.4	10,000.0	129.4	130.2	140.86	-977.8	5,114.5	1,045.6	869.8	175.79	5.948	
14,400.0	9,194.0	15,261.4	10,000.0	131.7	132.5	140.86	-978.3	5,214.4	1,045.6	866.7	178.96	5.843	
14,500.0	9,194.0	15,361.4	10,000.0	134.1	134.9	140.86	-978.8	5,314.4	1,045.6	863.5	182.14	5.741	
14,600.0	9,194.0	15,461.4	10,000.0	136.4	137.2	140.86	-979.3	5,414.4	1,045.6	860.3	185.32	5.642	
14,700.0	9,194.0	15,561.4	10,000.0	138.8	139.5	140.86	-979.8	5,514.4	1,045.6	857.1	188.50	5.547	
14,800.0	9,194.0	15,661.4	10,000.0	141.1	141.9	140.86	-980.3	5,614.4	1,045.6	853.9	191.69	5.455	
14,900.0	9,194.0	15,761.4	10,000.0	143.5	144.2	140.86	-980.8	5,714.4	1,045.6	850.7	194.88	5.365	
15,000.0	9,194.0	15,861.4	10,000.0	145.8	146.6	140.86	-981.2	5,814.4	1,045.6	847.5	198.08	5.279	
15,100.0	9,194.0	15,961.4	10,000.0	148.2	148.9	140.86	-981.7	5,914.4	1,045.6	844.3	201.28	5.195	
15,200.0	9,194.0	16,061.4	10,000.0	150.6	151.3	140.86	-982.2	6,014.4	1,045.6	841.1	204.48	5.114	
15,300.0	9,194.0	16,161.4	10,000.0	152.9	153.6	140.86	-982.7	6,114.4	1,045.6	837.9	207.68	5.035	
15,400.0	9,194.0	16,261.4	10,000.0	155.3	156.0	140.86	-983.2	6,214.4	1,045.6	834.7	210.89	4.958	
15,500.0	9,194.0	16,361.4	10,000.0	157.7	158.3	140.86	-983.7	6,314.4	1,045.6	831.5	214.10	4.884	
15,600.0	9,194.0	16,461.4	10,000.0	160.0	160.7	140.86	-984.2	6,414.4	1,045.6	828.3	217.31	4.812	
15,700.0	9,194.0	16,561.4	10,000.0	162.4	163.1	140.86	-984.7	6,514.4	1,045.6	825.1	220.53	4.741	
15,800.0	9,194.0	16,661.4	10,000.0	164.8	165.4	140.86	-985.1	6,614.4	1,045.6	821.9	223.74	4.673	
15,900.0	9,194.0	16,761.4	10,000.0	167.2	167.8	140.86	-985.6	6,714.4	1,045.6	818.7	226.96	4.607	
16,000.0	9,194.0	16,861.4	10,000.0	169.5	170.2	140.86	-986.1	6,814.4	1,045.6	815.4	230.19	4.542	
16,100.0	9,194.0	16,961.4	10,000.0	171.9	172.5	140.86	-986.6	6,914.4	1,045.6	812.2	233.41	4.480	
16,200.0	9,194.0	17,061.4	10,000.0	174.3	174.9	140.86	-987.1	7,014.4	1,045.6	809.0	236.64	4.419	
16,300.0	9,194.0	17,161.4	10,000.0	176.7	177.3	140.86	-987.6	7,114.4	1,045.6	805.8	239.86	4.359	
16,400.0	9,194.0	17,261.4	10,000.0	179.1	179.6	140.86	-988.1	7,214.4	1,045.6	802.5	243.09	4.301	
16,500.0	9,194.0	17,361.4	10,000.0	181.4	182.0	140.86	-988.6	7,314.4	1,045.6	799.3	246.32	4.245	
16,600.0	9,194.0	17,461.4	10,000.0	183.8	184.4	140.86	-989.1	7,414.4	1,045.6	796.1	249.56	4.190	
16,700.0	9,194.0	17,561.4	10,000.0	186.2	186.8	140.86	-989.5	7,514.4	1,045.6	792.8	252.79	4.136	
16,800.0	9,194.0	17,661.4	10,000.0	188.6	189.1	140.86	-990.0	7,614.4	1,045.6	789.6	256.03	4.084	
16,900.0	9,194.0	17,761.4	10,000.0	191.0	191.5	140.86	-990.5	7,714.4	1,045.6	786.3	259.27	4.033	
17,000.0	9,194.0	17,861.4	10,000.0	193.4	193.9	140.86	-991.0	7,814.4	1,045.6	783.1	262.51	3.983	
17,100.0	9,194.0	17,961.4	10,000.0	195.8	196.3	140.86	-991.5	7,914.4	1,045.6	779.9	265.75	3.935	
17,200.0	9,194.0	18,061.4	10,000.0	198.1	198.7	140.86	-992.0	8,014.4	1,045.6	776.6	268.99	3.887	
17,300.0	9,194.0	18,161.4	10,000.0	200.5	201.0	140.86	-992.5	8,114.4	1,045.6	773.4	272.23	3.841	
17,400.0	9,194.0	18,261.4	10,000.0	202.9	203.4	140.86	-993.0	8,214.4	1,045.6	770.1	275.48	3.796	
17,500.0	9,194.0	18,361.4	10,000.0	205.3	205.8	140.86	-993.4	8,314.4	1,045.6	766.9	278.73	3.751	
17,600.0	9,194.0	18,461.4	10,000.0	207.7	208.2	140.86	-993.9	8,414.4	1,045.6	763.6	281.97	3.708	
17,700.0	9,194.0	18,561.4	10,000.0	210.1	210.6	140.86	-994.4	8,514.4	1,045.6	760.4	285.22	3.666	
17,800.0	9,194.0	18,661.4	10,000.0	212.5	213.0	140.86	-994.9	8,614.4	1,045.6	757.1	288.47	3.625	

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

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Offset Design: IRONHORSE 35-36 FED STATE - xxIRONHORSE 35-36 FED STATE COM 174H - OWB - PWP0 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Rule Assigned:** — **Offset Well Error:** 0.0 usft

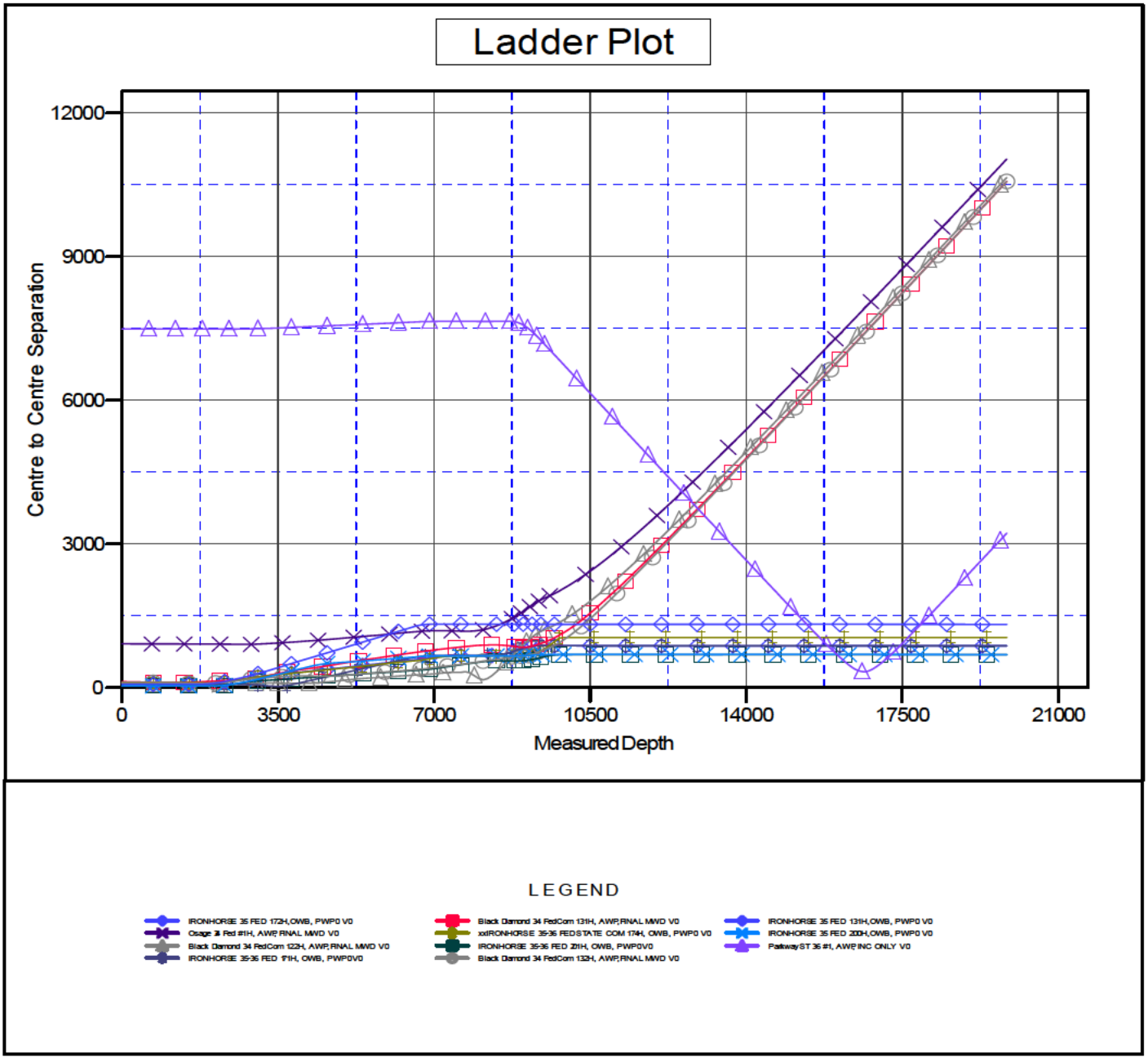
Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	9,194.0	18,761.4	10,000.0	214.9	215.3	140.86	-995.4	8,714.4	1,045.6	753.9	291.72	3.584	
18,000.0	9,194.0	18,861.4	10,000.0	217.3	217.7	140.86	-995.9	8,814.4	1,045.6	750.6	294.97	3.545	
18,100.0	9,194.0	18,961.4	10,000.0	219.7	220.1	140.86	-996.4	8,914.4	1,045.6	747.4	298.23	3.506	
18,200.0	9,194.0	19,061.4	10,000.0	222.1	222.5	140.86	-996.9	9,014.4	1,045.6	744.1	301.48	3.468	
18,300.0	9,194.0	19,161.4	10,000.0	224.5	224.9	140.86	-997.3	9,114.4	1,045.6	740.9	304.74	3.431	
18,400.0	9,194.0	19,261.4	10,000.0	226.9	227.3	140.86	-997.8	9,214.4	1,045.6	737.6	307.99	3.395	
18,500.0	9,194.0	19,361.4	10,000.0	229.3	229.7	140.86	-998.3	9,314.4	1,045.6	734.4	311.25	3.359	
18,600.0	9,194.0	19,461.4	10,000.0	231.7	232.1	140.86	-998.8	9,414.4	1,045.6	731.1	314.50	3.325	
18,700.0	9,194.0	19,561.4	10,000.0	234.1	234.5	140.86	-999.3	9,514.4	1,045.6	727.9	317.76	3.291	
18,800.0	9,194.0	19,661.4	10,000.0	236.5	236.9	140.86	-999.8	9,614.4	1,045.6	724.6	321.02	3.257	
18,900.0	9,194.0	19,761.4	10,000.0	238.9	239.3	140.86	-1,000.3	9,714.4	1,045.6	721.3	324.28	3.224	
19,000.0	9,194.0	19,861.4	10,000.0	241.3	241.6	140.86	-1,000.8	9,814.4	1,045.6	718.1	327.54	3.192	
19,100.0	9,194.0	19,961.4	10,000.0	243.7	244.0	140.86	-1,001.3	9,914.4	1,045.6	714.8	330.80	3.161	
19,200.0	9,194.0	20,061.4	10,000.0	246.1	246.4	140.86	-1,001.7	10,014.4	1,045.6	711.6	334.06	3.130	
19,300.0	9,194.0	20,161.4	10,000.0	248.5	248.8	140.86	-1,002.2	10,114.4	1,045.6	708.3	337.33	3.100	
19,400.0	9,194.0	20,261.4	10,000.0	250.9	251.2	140.86	-1,002.7	10,214.4	1,045.6	705.0	340.59	3.070	
19,500.0	9,194.0	20,361.4	10,000.0	253.3	253.6	140.86	-1,003.2	10,314.4	1,045.6	701.8	343.85	3.041	
19,600.0	9,194.0	20,461.4	10,000.0	255.7	256.0	140.86	-1,003.7	10,414.4	1,045.6	698.5	347.12	3.012	
19,700.0	9,194.0	20,561.4	10,000.0	258.1	258.4	140.86	-1,004.2	10,514.4	1,045.6	695.2	350.38	2.984	
19,800.0	9,194.0	20,661.4	10,000.0	260.5	260.8	140.86	-1,004.7	10,614.4	1,045.6	692.0	353.65	2.957	
19,847.1	9,194.0	20,708.5	10,000.0	261.6	262.0	140.86	-1,004.9	10,661.5	1,045.6	690.4	355.19	2.944 SF	

Colgate Operating
Anticollision Report

Company:	NEW MEXICO	**Local Co-ordinate Reference:**	Well IRONHORSE 35 FED 132H
Project:	(SP) EDDY	**TVD Reference:**	KB=30' @ 3344.0usft
Reference Site:	IRONHORSE 35-36 FED STATE	**MD Reference:**	KB=30' @ 3344.0usft
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	IRONHORSE 35 FED 132H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	Compass
Reference Design:	PWP0	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=30' @ 3344.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: IRONHORSE 35 FED 132H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.15°



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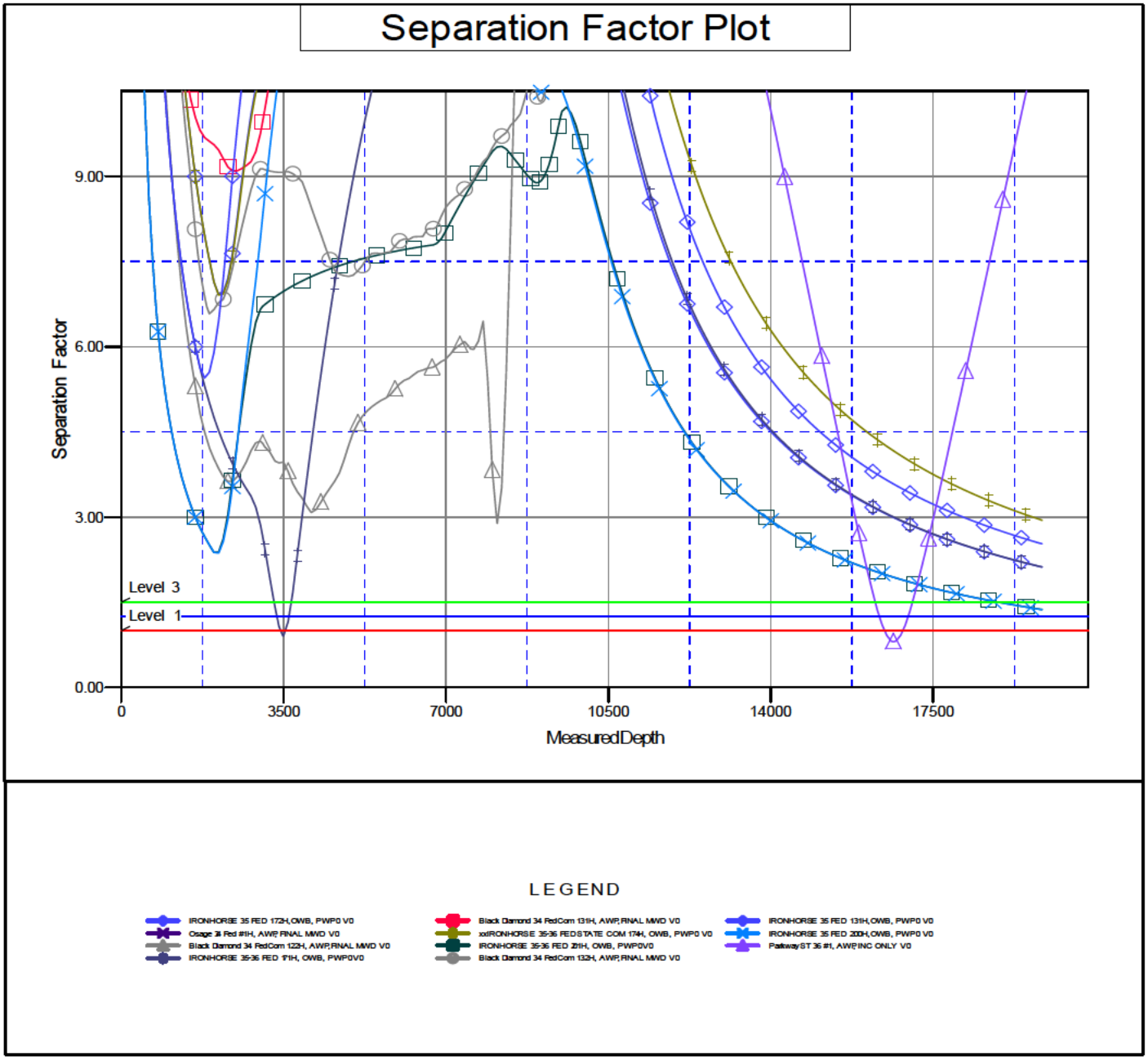


PERMIAN RESOURCES

H_2S CONTINGENCY PLAN

FOR

Colgate Operating LLC

Ironhorse 35 Fed Com 131H, 132H, 171H, 172H, 200H, 201H

Eddy County, New Mexico

Table of Contents

Colgate Operating LLC	H_2S Contingency Plan Ironhorse 35 Fed Com	Eddy County, New Mexico

Section 5.0 - Emergency Contact List

EMERGENCY CONTACT LIST				
Colgate Operating LLC.				
POSITION	**NAME**	**OFFICE**	**CELL**	**ALT PHONE**
Operations				
Operations Superintendent	Rick Lawson		432.530.3188	
TX Operations Superintendent	Josh Graham	432.940.3191	432.940.3191	
NM Operations Superintendent	Manual Mata	432.664.0278	575.408.0216	
Drilling Manager	Jason Fitzgerald	432.315.0146	318.347.3916	
Drilling Engineer	Ronny Hise	432.315.0144	432.770.4786	
Production Manager	Levi Harris	432.219.8568	720.261.4633	
SVP Development Ops	Clayton Smith	720.499.1416	361.215.2494	
SVP Production Ops	Casey McCain	432.695.4239	432.664.6140	
HSE & Regulatory				
H&S Manager	Adam Hicks	720.499.2377	903.426.4556	
Regulatory Manager	Stephanie Rabadue	432.695.4222	432.260.4388	
Environmental Manager	Montgomery Floyd	432-315-0123	432-425-8321	
HSE Consultant	Blake Wisdom		918-323-2343	
Local, State, & Federal Agencies				
Eddy County Sheriff		575-887-7551		911
New Mexico State Highway Patrol		505-757-2297		911
Carlsbad Fire / EMS		575-885-3125		911
Carlsbad Memorial Hospital		575-887-4100		
Secorp – Safety Contractor	Ricky Stephens		(325)-262-0707	
New Mexico Oil Conservation Division – District 1 Office – Hobbs, NM.		575-393-6161		
New Mexico Environment Department – District III Office – Hobbs, NM		575-397-6910		
New Mexico Oil Conservation Division – Hobbs, NM	24 Hour Emergency	575-393-6161		
Bureau of Land Management – Carlsbad, NM		575-234-5972		
U.S. Fish & Wildlife		502-248-6911		

II. H_2S CONTINGENCY PLAN SECTION

Scope:

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

Objective:

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

Purpose, Distribution and Updating of Contingency Plan:

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

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

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

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

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

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

Discussion of Plan:

Suspected Problem Zones:

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

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

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

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

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

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

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

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

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

III. OPERATING PROCEDURES

A. Blowout Preventer Drills

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

B. H_2S Alarm Drills

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

C. Surface Annular Preventer/ Diverter System Testing

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

D. Blowout Preventer

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

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

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

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

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

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

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

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

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

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

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

F. Outside Service Personnel

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

G. Onsite/ off shift workers

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

H. Simultaneous Operations (SIMOPS)

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

I. Area Residences/ Occupied Locations/ Public Roads

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

J. Drilling Fluids

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

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

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

IV. OPERATING CONDITIONS

A. Posting Well Condition Flags

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

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

B. Requiring Air Masks Conditions

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

C. Kick Procedure

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

V. EMERGENCY PROCEDURES

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

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

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

IV. Actions to be taken

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

EMERGENCY PROCEDURE IMPLEMENTATION

I. Drilling or Tripping

a. *All Personnel*

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

b. *Drilling Consultant*

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

c. *Tool Pusher*

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

d. *Driller*

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

e. *Derrick Man and Floor Hands*

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

f. *Mud Engineer*

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

g. *Safety Personnel*

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

II. Taking a Kick

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

III. Open Hole Logging

a. All unnecessary personnel should leave the rig floor.

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

IV. Running Casing or Plugging

a. Follow “Drilling or Tripping” procedures.

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

VI. POST EMERGENCY ACTIONS

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

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

VII. IGNITION PROCEDURES

Responsibilities:

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

1. Human life and property are endangered.

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

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

Instructions for Igniting the Well:

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

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

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

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

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

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

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

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

VIII. TRAINING PROGRAM

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

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

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

IX. EMERGENCY EQUIPMENT

Lease Entrance Sign:

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

CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

Respiratory Equipment:

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

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

Windsocks or Wind Streamers:

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

Hydrogen Sulfide Detector and Alarms:

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

Well Condition Sign and Flags:

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

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

Auxiliary Rescue Equipment:

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

Mud Inspection Equipment:

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

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

Blowout Preventer:

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

Confined Space Monitor:

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

Communication Equipment:

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

Special Control Equipment:

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

Evacuation Plan:

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

Designated Areas:

Parking and Visitor area:

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

Safe Briefing Areas:

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

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

Note:

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

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

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

X. CHECKLISTS

Rig-up & Equipment Status Check List

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

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

Procedural Check List

Perform the following on each tour:

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

Perform the following each week:

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

XI. BRIEFING PROCEDURES

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

Pre-Spud Meeting

Date: Prior to spudding the well.

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

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

XII. EVACUATION PLAN

General Plan

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

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

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

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

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

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

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

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

XIII. APPENDICES AND GENERAL INFORMATION

Radius of Exposure
Affected Notification List

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

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

Evacuee Description:
Residents:

Notification Process:

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

Evacuation Plan:

All evacuees will migrate lateral to the wind direction.

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

Toxic Effects of H_2S Poisoning

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

Table 1
Permissible Exposure Limits of Various Gases

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

Definitions

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

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

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

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

Toxicity Table of H_2S

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

PHYSICAL PROPERTIES OF H_2S

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

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

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

COLOR – TRANSPARENT

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

ODOR – ROTTEN EGGS

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

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

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

EXPLOSIVE LIMITS – 4.0% TO 44%

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

FLAMMABILITY

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

SOLUBILITY – 4 TO 1 RATIO WITH WATER

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

BOILING POINT – (-77° Fahrenheit)

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

RESPIRATOR USE

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

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

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

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

Respirators shall be worn during the following conditions:

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

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

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

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

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

EMERGENCY RESCUE PROCEDURES

DO NOT PANIC!!!

Remain Calm – Think

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

2. Sound alarm and activate the 911 system.

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

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

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

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

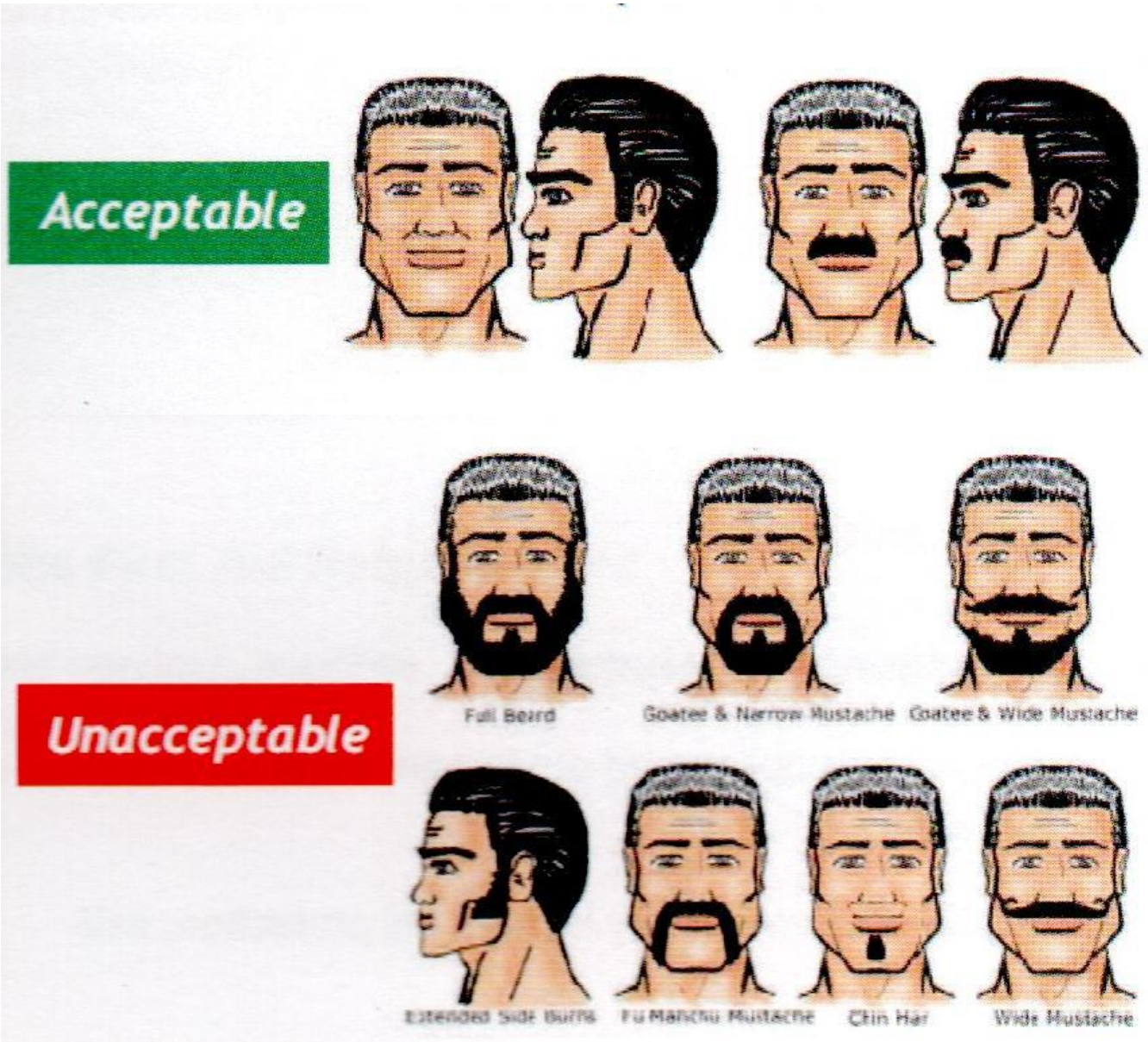
7. If the eyes are affected by H_2S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.

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

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

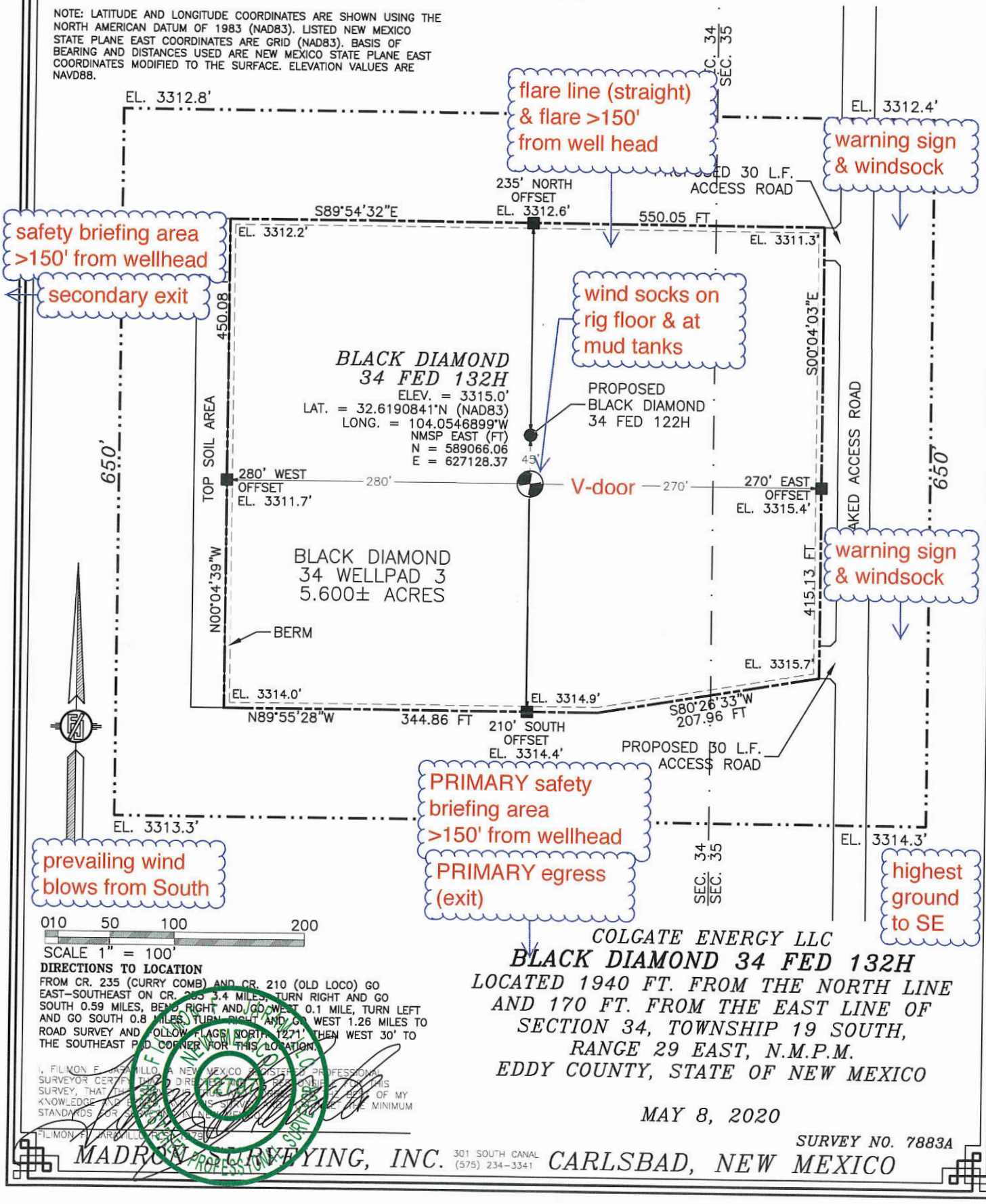
Facial Hair – Clean Shaven Examples

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



SECTION 34, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. ELEVATION VALUES ARE NAVD88.



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR. 235 (CURRY COMB) AND CR. 210 (OLD LOCO) GO EAST–SOUTHEAST ON CR. 235 3.4 MILES, TURN RIGHT AND GO SOUTH 0.59 MILES, BEND RIGHT AND GO WEST 0.1 MILE, TURN LEFT AND GO SOUTH 0.8 MILES, TURN RIGHT AND GO WEST 1.26 MILES TO ROAD SURVEY AND FOLLOW FLAGS NORTH 1271' THEN WEST 30' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

I, FILMON F. JARAMILLO, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT THIS DRAWING AND PLAT ACCURATELY REPRESENTS THIS SURVEY, THAT THIS SURVEY WAS PERFORMED BY ME OR UNDER MY SUPERVISION, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT IT MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

FILMON F. JARAMILLO PLS 12797

NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR

COLGATE ENERGY LLC

BLACK DIAMOND 34 FED 132H

LOCATED 1940 FT. FROM THE NORTH LINE AND 170 FT. FROM THE EAST LINE OF SECTION 34, TOWNSHIP 19 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

MAY 8, 2020

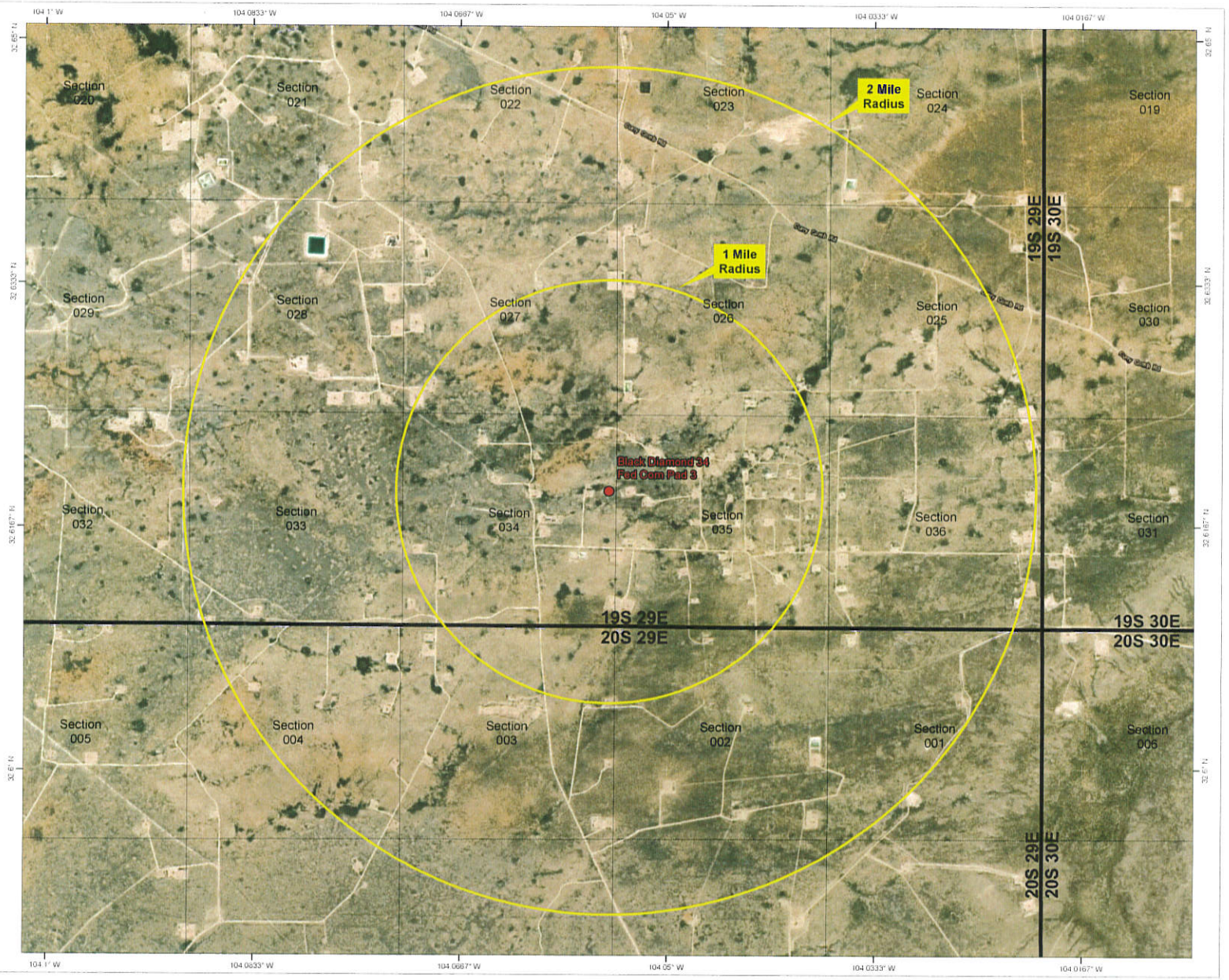
SURVEY NO. 7883A

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

Colgate Energy, LLC

Black Diamond 34 Fed Com
132H
H2S Contingency Plan:
Radius Map

Section 34, Township 19S, Range 29E
Eddy County, New Mexico



1:27,000

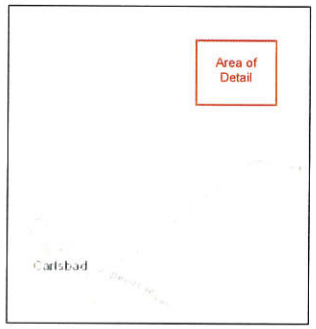
0 0.25 0.5 1

Miles

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., March 10, 2020
for Colgate Energy, LLC



Operator Name: COLGATE OPERATING LLC **Well Name:** IRONHORSE 35 FED COM **Well Number:** 132H

Section 7 - Methods for Handling

Waste type: DRILLING

Waste content description: Drill cuttings, mud, salts, and other chemicals

Amount of waste: 550 barrels

Waste disposal frequency : Daily

Safe containment description: Steel mud tanks

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Mud tanks will be hauled to R360s state approved (NM-01-0006) disposal site at Halfway, NM.

Waste type: SEWAGE

Waste content description: Portable, self-contained toilets will be provided for human waste disposal.

Amount of waste: 5 barrels

Waste disposal frequency : Daily

Safe containment description: Plastic holding tanks and chemical toilets

Safe containmant attachment:

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

Disposal type description:

Disposal location description: A NMOCD approved facility. Carlsbad wastewater treatment plant.

Waste type: GARBAGE

Waste content description: Trash

Amount of waste: 10

Waste disposal frequency : Daily

Safe containment description: Portable trash cage

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Hauled to NMOCD approved location. Eddy County landfill.

Reserve Pit

Reserve Pit being used? NO

Operator Name: COLGATE OPERATING LLC **Well Name:** IRONHORSE 35 FED COM **Well Number:** 132H

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

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

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? Y

Description of cuttings location The well will be drilled utilizing a closed-loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to a New Mexico Oil Conservation Division (NMOCD) approved disposal site.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Ironhorse_Federal_WSL1_20240729043732.pdf

Comments: There is one (1) multi-well pad required for the Ironhorse 35 Federal anticipated project with no additional surface disturbance. This well pad allows for enough space for cuts and fills, topsoil storage, and storm water control. Interim reclamation of the pad is anticipated after the drilling and completion of all wells on the pad. The well site layout for all pads is attached.: 1. Existing Black Diamond 34 Federal 1 Pad: 451x497 (5.19 Acres)

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 388617

CONDITIONS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 388617
	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	10/29/2024
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	10/29/2024
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	10/29/2024
ward.rikala	Cement is required to circulate on both surface and production strings of casing	10/29/2024
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	10/29/2024
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	10/29/2024
ward.rikala	This well is within the Capitan Reed. The 1st intermediate string shall be sat and cemented back to surface immediately above the top of the Capitan Reef. The 2nd intermediate string shall be sat and cemented immediately below the base of the Capitan Reef.	10/29/2024
ward.rikala	Submit C-102 on new C-102 form.	10/29/2024