

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit one copy to appropriate District Office

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address Colgate Operating, LLC 300 N Marienfeld Street, Suite 1000 Midland, Tx 79701		² OGRID Number 371449	
		³ Reason for Filing Code/ Effective Date NW	
⁴ API Number 30 – 015 – 47822	⁵ Pool Name PARKWAY; BONE SPRING		⁶ Pool Code 49622
⁷ Property Code 329892	⁸ Property Name BLACK DIAMOND 34 FED		⁹ Well Number 131H

II. ¹⁰ Surface Location

UL or lot no. A	Section 34	Township 19S	Range 29E	Lot Idn	Feet from the 1290	North/South Line North	Feet from the 301	East/West line East	County Eddy
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¹¹ Bottom Hole Location

UL or lot no. B	Section 33	Township 19S	Range 29E	Lot Idn	Feet from the 926	North/South line North	Feet from the 2577	East/West line East	County Eddy
¹² Lse Code F	¹³ Producing Method Code	¹⁴ Gas Connection Date 01/01/2021	¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date		

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
329097	LM TOUCHDOWN, LLC	O
329097	LM TOUCHDOWN, LLC	G

IV. Well Completion Data

²¹ Spud Date 10/12/2021	²² Ready Date 03/05/2022	²³ TD 16,670 MD 9,070 TVD	²⁴ PBSD 16,557 MD 8,978 TVD	²⁵ Perforations 9,375 – 16,435	²⁶ DHC, MC
²⁷ Hole Size		²⁸ Casing & Tubing Size		²⁹ Depth Set	³⁰ Sacks Cement
22.375		18.625		332	355
17.5		13.375		1,517	520 Lead 225 Tail
12.25		9.625		3,389	700 Lead 230 Tail
8.75		5.5		16,648	835 Lead 1,325 Tail

V. Well Test Data

³¹ Date New Oil 3/23/2022	³² Gas Delivery Date 3/21/2022	³³ Test Date 4/14/2022	³⁴ Test Length 24	³⁵ Tbg. Pressure 1170	³⁶ Csg. Pressure 190
³⁷ Choke Size 88/88	³⁸ Oil 701	³⁹ Water 1608	⁴⁰ Gas 953		⁴¹ Test Method
⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: 			OIL CONSERVATION DIVISION		
Printed name: Mikah Thomas			Approved by: PATRICIA MARTINEZ		
Title: Sr. Regulatory Analyst			Title: PETROLEUM SPECIALIST		
E-mail Address: mthomas@colgateenergy.com			Approval Date: 6/14/2022		
Date: 05/15/2022		Phone: 432-695-4272			

DISTRICT I
1825 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6181 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 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, N.M. 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

AS-DRILLED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-47822	² Pool Code 49622	³ Pool Name PARKWAY; BONE SPRING
⁴ Property Code 329892	⁵ Property Name Black Diamond 34 Fed	⁶ Well Number 131H
⁷ OGRID No. 371449	⁸ Operator Name Colgate Operating, LLC	⁹ Elevation 3314

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	34	19 S	29 E		1290	North	301	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
B	33	19 S	29 E		926	North	2577	East	Eddy

¹² Dedicated Acres 240	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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

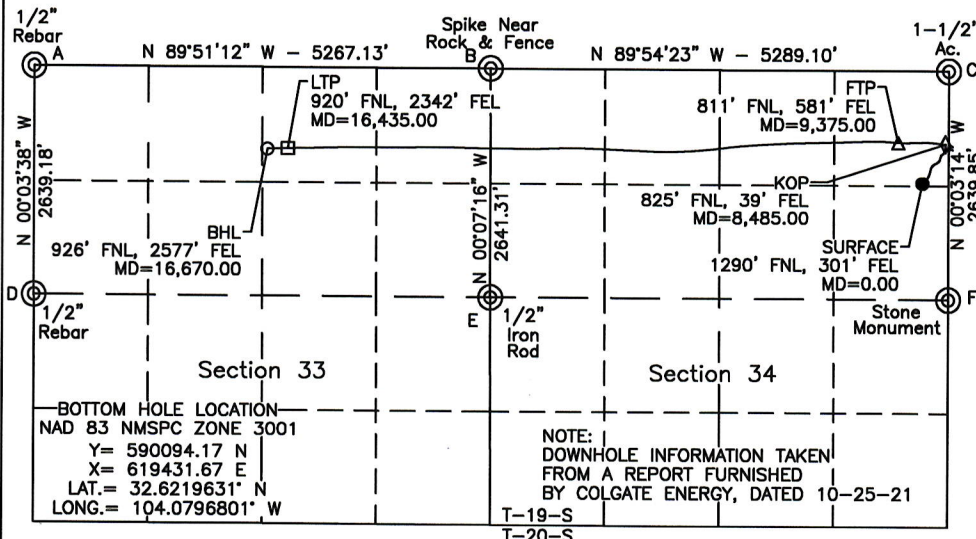
Legend:	SURFACE LOCATION	KICK OFF POINT
● = Surface Location	NAD 83 NMSPC ZONE 3001	NAD 83 NMSPC ZONE 3001
○ = Bottom Hole Location	Y= 589715.76 N	Y= 590180.29 N
◇ = Kick Off Point (KOP)	X= 626996.28 E	X= 627257.85 E
△ = First Take Point (FTP)	LAT.= 32.6208709° N	LAT.= 32.6221459° N
□ = Last Take Point (LTP)	LONG.= 104.0551134° W	LONG.= 104.0542599° W
⊙ = Found 1916 USGLO Brass Cap	FIRST TAKE POINT	LAST TAKE POINT
⊙ = Found Monument	NAD 83 NMSPC ZONE 3001	NAD 83 NMSPC ZONE 3001
	Y= 590194.82 N	Y= 590099.74 N
	X= 626715.87 E	X= 619666.48 E
	LAT.= 32.6221897° N	LAT.= 32.6219768° N
	LONG.= 104.0560201° W	LONG.= 104.0789174° W

CORNER COORDINATES TABLE
NAD 83 NME

A - Y= 591027.43 N, X= 616739.51 E
B - Y= 591013.94 N, X= 622006.62 E
C - Y= 591005.32 N, X= 627295.72 E
D - Y= 588388.25 N, X= 616742.30 E
E - Y= 588372.64 N, X= 622012.21 E
F - Y= 588365.48 N, X= 627298.21 E

CORNER COORDINATES TABLE
NAD 83 NME

A - LAT.=32.6245457° N, LONG.=104.0884173° W
B - LAT.=32.6244741° N, LONG.=104.0713093° W
C - LAT.=32.6244134° N, LONG.=104.0541298° W
D - LAT.=32.6172913° N, LONG.=104.0884280° W
E - LAT.=32.6172139° N, LONG.=104.0713123° W
F - LAT.=32.6171572° N, LONG.=104.0541443° W

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.

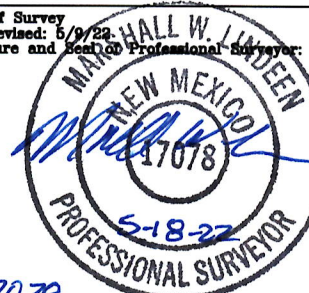
Signature: Mikah Thomas Date: 05.22.2022
Printed Name: Mikah Thomas
E-mail Address: mthomas@colgateenergy.com

¹⁸ SURVEYOR CERTIFICATION

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

3/27/21

Date of Survey
Plat Revised: 5/9/22
Signature and Seal of Professional Surveyor:



Certificate Number



Colgate Energy

Eddy County, NM (N83-NME)

Black Diamond 34 Fed Com

Black Diamond 34 Fed Com 131H

30-015-47822

131H

Design: 131H

Standard Survey Report

25 October, 2021



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Project	Eddy County, NM (N83-NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Black Diamond 34 Fed Com		
Site Position:		Northing:	589,010.96 usft
From:	Map	Easting:	627,173.41 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.61893234
		Longitude:	-104.05454408

Well	Black Diamond 34 Fed Com 131H		
Well Position	+N/-S	0.00 usft	Northing: 589,715.76 usft
	+E/-W	0.00 usft	Easting: 626,996.28 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
Grid Convergence:	0.15 °	Ground Level:	3,315.00 usft

Wellbore	131H		
Magnetics	Model Name	Sample Date	Declination (°)
	IFR	10/10/2021	6.97
			Dip Angle (°)
			60.34
			Field Strength (nT)
			47,807.80000000

Design	131H		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			270.11

Survey Program	Date	10/25/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
13.92	16,609.00	Survey #1 - FRID through TD (131H)	MWD+IFR1+SAG+FDIR (SQ OWSG MWD + IFR1 + Sag + FDIR Correction	
16,670.00	16,670.00	Survey #2_PTB (131H)	BLIND	BLIND

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
00 OsageFed#013(BD-131H) - 00 OsageFed#009(BD-131H)									
13.92	0.08	110.52	13.92	0.00	0.01	-0.01	0.57	0.57	0.00
27.83	0.16	110.50	27.83	-0.01	0.04	-0.04	0.58	0.58	-0.14
41.75	0.24	110.48	41.75	-0.03	0.08	-0.08	0.57	0.57	-0.14
55.67	0.32	110.45	55.67	-0.05	0.15	-0.15	0.57	0.57	-0.22
69.58	0.40	110.43	69.58	-0.08	0.23	-0.23	0.58	0.58	-0.14
83.50	0.48	110.40	83.50	-0.12	0.33	-0.33	0.57	0.57	-0.22
97.42	0.56	110.38	97.42	-0.17	0.45	-0.45	0.57	0.57	-0.14



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
110.00	0.63	110.36	110.00	-0.21	0.57	-0.57	0.58	0.58	-0.15	
Rustler										
111.33	0.64	110.36	111.33	-0.22	0.58	-0.58	0.58	0.58	-0.13	
125.25	0.72	110.33	125.25	-0.27	0.74	-0.74	0.57	0.57	-0.22	
139.17	0.80	110.31	139.17	-0.34	0.91	-0.91	0.57	0.57	-0.14	
153.08	0.88	110.29	153.07	-0.41	1.10	-1.10	0.58	0.58	-0.14	
167.00	0.96	110.26	166.99	-0.49	1.31	-1.31	0.57	0.57	-0.22	
181.62	0.96	109.46	181.61	-0.57	1.54	-1.54	0.09	0.00	-5.47	
196.23	0.96	108.67	196.22	-0.65	1.77	-1.77	0.09	0.00	-5.41	
210.85	0.97	107.87	210.84	-0.73	2.01	-2.01	0.11	0.07	-5.47	
225.46	0.97	107.08	225.44	-0.80	2.24	-2.24	0.09	0.00	-5.41	
240.08	0.98	106.29	240.06	-0.87	2.48	-2.48	0.11	0.07	-5.40	
254.69	0.98	105.50	254.67	-0.94	2.72	-2.72	0.09	0.00	-5.41	
269.31	0.99	104.71	269.29	-1.01	2.96	-2.97	0.12	0.07	-5.40	
283.92	0.99	103.93	283.90	-1.07	3.21	-3.21	0.09	0.00	-5.34	
298.54	1.00	103.14	298.51	-1.13	3.46	-3.46	0.12	0.07	-5.40	
313.15	1.00	102.36	313.12	-1.18	3.70	-3.71	0.09	0.00	-5.34	
327.77	1.01	101.59	327.74	-1.24	3.96	-3.96	0.11	0.07	-5.27	
342.38	1.23	105.87	342.35	-1.31	4.23	-4.23	1.61	1.51	29.30	
345.03	1.32	126.89	345.00	-1.33	4.28	-4.29	17.81	3.33	791.83	
Top of Salt										
357.00	1.23	105.72	356.96	-1.39	4.53	-4.54	3.98	-0.74	-176.94	
371.38	1.23	105.82	371.34	-1.48	4.83	-4.83	0.01	0.00	0.70	
385.75	1.22	106.05	385.71	-1.56	5.13	-5.13	0.08	-0.07	1.60	
400.13	1.22	106.31	400.08	-1.65	5.42	-5.42	0.04	0.00	1.81	
414.50	1.21	106.54	414.45	-1.73	5.71	-5.72	0.08	-0.07	1.60	
428.88	1.20	106.65	428.83	-1.82	6.00	-6.01	0.07	-0.07	0.76	
443.25	1.20	106.54	443.19	-1.90	6.29	-6.29	0.02	0.00	-0.77	
457.63	1.21	106.09	457.57	-1.99	6.58	-6.59	0.10	0.07	-3.13	
472.00	1.23	105.14	471.94	-2.07	6.88	-6.88	0.20	0.14	-6.61	
487.00	1.26	103.40	486.93	-2.15	7.19	-7.20	0.32	0.20	-11.60	
502.00	1.31	101.32	501.93	-2.22	7.52	-7.52	0.46	0.33	-13.87	
517.00	1.37	99.12	516.93	-2.29	7.87	-7.87	0.53	0.40	-14.67	
532.00	1.43	96.96	531.92	-2.34	8.23	-8.23	0.53	0.40	-14.40	
547.00	1.50	94.92	546.92	-2.38	8.61	-8.61	0.58	0.47	-13.60	
562.00	1.56	93.04	561.91	-2.40	9.01	-9.01	0.52	0.40	-12.53	
577.00	1.63	91.34	576.90	-2.42	9.43	-9.43	0.56	0.47	-11.33	
592.00	1.68	89.83	591.90	-2.42	9.86	-9.86	0.44	0.33	-10.07	
606.13	1.71	88.25	606.02	-2.42	10.28	-10.28	0.39	0.21	-11.18	
620.25	1.73	86.84	620.14	-2.40	10.70	-10.71	0.33	0.14	-9.99	
634.38	1.75	85.57	634.26	-2.37	11.13	-11.13	0.31	0.14	-8.99	
648.50	1.76	84.43	648.37	-2.33	11.56	-11.56	0.26	0.07	-8.07	
662.63	1.78	83.41	662.50	-2.29	11.99	-12.00	0.26	0.14	-7.22	
676.75	1.81	82.57	676.61	-2.23	12.43	-12.44	0.28	0.21	-5.95	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
690.88	1.84	81.93	690.73	-2.17	12.88	-12.88	0.26	0.21	-4.53
705.00	1.88	81.60	704.84	-2.11	13.33	-13.34	0.29	0.28	-2.34
719.00	1.95	81.53	718.84	-2.04	13.79	-13.80	0.50	0.50	-0.50
733.00	2.03	81.65	732.83	-1.97	14.28	-14.28	0.57	0.57	0.86
747.00	2.12	81.85	746.82	-1.89	14.78	-14.78	0.64	0.64	1.43
761.00	2.21	82.08	760.81	-1.82	15.30	-15.30	0.65	0.64	1.64
775.00	2.31	82.28	774.80	-1.74	15.85	-15.85	0.72	0.71	1.43
789.00	2.41	82.42	788.79	-1.67	16.42	-16.42	0.72	0.71	1.00
803.00	2.50	82.47	802.77	-1.59	17.01	-17.02	0.64	0.64	0.36
817.00	2.59	82.38	816.76	-1.51	17.63	-17.63	0.64	0.64	-0.64
831.00	2.68	82.10	830.74	-1.42	18.27	-18.27	0.65	0.64	-2.00
845.00	2.75	81.54	844.73	-1.33	18.92	-18.93	0.53	0.50	-4.00
859.00	2.81	80.57	858.71	-1.22	19.60	-19.60	0.54	0.43	-6.93
872.43	2.85	79.10	872.13	-1.10	20.25	-20.25	0.62	0.30	-10.95
885.86	2.88	77.26	885.54	-0.97	20.90	-20.91	0.72	0.22	-13.70
899.29	2.91	75.26	898.95	-0.80	21.56	-21.56	0.78	0.22	-14.89
912.71	2.95	73.27	912.35	-0.62	22.22	-22.22	0.81	0.30	-14.83
926.14	2.99	71.43	925.77	-0.41	22.89	-22.89	0.77	0.30	-13.70
939.57	3.04	69.95	939.18	-0.17	23.55	-23.55	0.69	0.37	-11.02
953.00	3.10	69.03	952.59	0.08	24.23	-24.23	0.58	0.45	-6.85
966.57	3.19	61.69	966.14	0.39	24.90	-24.90	3.04	0.66	-54.09
980.14	3.32	51.86	979.69	0.81	25.54	-25.54	4.22	0.96	-72.44
993.71	3.48	51.55	993.23	1.31	26.17	-26.17	1.19	1.18	-2.28
1,007.29	3.66	52.17	1,006.79	1.83	26.84	-26.84	1.36	1.33	4.57
1,020.86	3.85	52.80	1,020.33	2.37	27.54	-27.54	1.43	1.40	4.64
1,034.43	4.02	53.29	1,033.87	2.93	28.29	-28.28	1.28	1.25	3.61
1,048.00	4.16	53.51	1,047.40	3.51	29.07	-29.06	1.04	1.03	1.62
1,061.43	4.25	53.66	1,060.79	4.09	29.86	-29.85	0.68	0.67	1.12
1,074.86	4.30	53.40	1,074.19	4.69	30.66	-30.65	0.40	0.37	-1.94
1,088.29	4.33	52.86	1,087.58	5.30	31.47	-31.46	0.38	0.22	-4.02
1,100.75	4.34	52.18	1,100.00	5.87	32.22	-32.21	0.42	0.07	-5.44
Base of Salt									
1,101.71	4.34	52.13	1,100.96	5.91	32.28	-32.27	0.42	0.08	-5.44
1,115.14	4.33	51.24	1,114.35	6.54	33.07	-33.06	0.51	-0.07	-6.63
1,128.57	4.31	50.21	1,127.74	7.18	33.86	-33.84	0.60	-0.15	-7.67
1,142.00	4.26	49.03	1,141.14	7.83	34.62	-34.61	0.75	-0.37	-8.79
1,155.57	4.16	47.84	1,154.67	8.49	35.37	-35.35	0.98	-0.74	-8.77
1,169.14	4.03	46.53	1,168.21	9.15	36.08	-36.06	1.18	-0.96	-9.65
1,182.71	3.90	45.09	1,181.74	9.81	36.75	-36.73	1.21	-0.96	-10.61
1,196.29	3.75	43.53	1,195.29	10.45	37.38	-37.36	1.34	-1.10	-11.49
1,209.86	3.61	41.83	1,208.83	11.09	37.97	-37.95	1.31	-1.03	-12.53
1,223.43	3.47	40.02	1,222.38	11.73	38.52	-38.50	1.32	-1.03	-13.34
1,237.00	3.35	38.10	1,235.92	12.35	39.03	-39.01	1.22	-0.88	-14.15



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,250.43	3.22	36.50	1,249.33	12.97	39.50	-39.47	1.18	-0.97	-11.91
1,263.86	3.11	34.84	1,262.74	13.57	39.93	-39.90	1.07	-0.82	-12.36
1,277.29	3.01	33.11	1,276.15	14.16	40.33	-40.30	1.01	-0.74	-12.88
1,290.71	2.92	31.33	1,289.56	14.75	40.70	-40.67	0.96	-0.67	-13.26
1,304.14	2.85	29.51	1,302.97	15.33	41.04	-41.01	0.86	-0.52	-13.55
1,317.57	2.79	27.70	1,316.38	15.91	41.36	-41.33	0.80	-0.45	-13.48
1,331.00	2.74	25.95	1,329.80	16.49	41.65	-41.62	0.73	-0.37	-13.03
1,344.78	2.71	24.41	1,343.56	17.08	41.93	-41.90	0.57	-0.22	-11.18
1,350.23	2.71	23.84	1,349.00	17.32	42.04	-42.00	0.50	-0.08	-10.43
Yates									
1,358.56	2.70	22.97	1,357.33	17.68	42.19	-42.16	0.50	-0.07	-10.46
1,372.33	2.70	21.65	1,371.08	18.28	42.44	-42.40	0.45	0.00	-9.59
1,386.11	2.72	20.47	1,384.84	18.89	42.67	-42.64	0.43	0.15	-8.56
1,399.89	2.74	19.46	1,398.61	19.50	42.90	-42.86	0.38	0.15	-7.33
1,413.67	2.79	18.68	1,412.37	20.13	43.11	-43.08	0.45	0.36	-5.66
1,427.44	2.85	18.18	1,426.13	20.77	43.33	-43.29	0.47	0.44	-3.63
1,441.22	2.93	18.08	1,439.89	21.43	43.54	-43.50	0.58	0.58	-0.73
1,455.00	3.05	18.48	1,453.65	22.12	43.77	-43.73	0.88	0.87	2.90
1,469.64	3.22	19.65	1,468.27	22.87	44.03	-43.99	1.24	1.16	7.99
1,484.27	3.43	21.12	1,482.87	23.67	44.33	-44.28	1.55	1.44	10.05
1,498.91	3.66	22.64	1,497.49	24.51	44.66	-44.62	1.70	1.57	10.38
1,513.55	3.90	24.06	1,512.09	25.39	45.05	-45.00	1.76	1.64	9.70
1,528.18	4.13	25.33	1,526.69	26.32	45.48	-45.43	1.69	1.57	8.68
1,542.82	4.24	26.04	1,541.29	27.29	45.94	-45.89	0.83	0.75	4.85
1,557.45	3.80	23.92	1,555.88	28.22	46.37	-46.32	3.17	-3.01	-14.49
1,572.09	3.36	21.22	1,570.49	29.06	46.73	-46.67	3.22	-3.01	-18.44
1,586.73	3.45	20.86	1,585.11	29.87	47.04	-46.98	0.63	0.61	-2.46
1,601.36	3.62	21.03	1,599.71	30.71	47.36	-47.30	1.16	1.16	1.16
1,616.00	3.75	21.04	1,614.32	31.59	47.70	-47.64	0.89	0.89	0.07
1,629.43	3.81	21.46	1,627.72	32.42	48.02	-47.96	0.49	0.45	3.13
1,642.86	3.84	21.34	1,641.12	33.25	48.35	-48.28	0.23	0.22	-0.89
1,656.29	3.87	20.89	1,654.52	34.09	48.67	-48.60	0.32	0.22	-3.35
1,669.71	3.89	20.22	1,667.91	34.94	48.99	-48.92	0.37	0.15	-4.99
1,683.14	3.91	19.43	1,681.31	35.80	49.30	-49.23	0.43	0.15	-5.88
1,696.57	3.93	18.58	1,694.71	36.67	49.60	-49.53	0.46	0.15	-6.33
1,710.00	3.95	17.75	1,708.11	37.55	49.89	-49.81	0.45	0.15	-6.18
1,723.57	3.97	16.93	1,721.64	38.44	50.16	-50.09	0.44	0.15	-6.04
1,737.14	3.99	16.16	1,735.18	39.35	50.43	-50.36	0.42	0.15	-5.67
1,750.71	4.02	15.42	1,748.72	40.26	50.69	-50.61	0.44	0.22	-5.45
1,764.29	4.05	14.72	1,762.26	41.18	50.94	-50.86	0.42	0.22	-5.15
1,777.86	4.08	14.04	1,775.80	42.11	51.18	-51.10	0.42	0.22	-5.01
1,791.43	4.11	13.40	1,789.33	43.05	51.41	-51.33	0.40	0.22	-4.72
1,805.00	4.14	12.79	1,802.87	44.00	51.63	-51.54	0.39	0.22	-4.50
1,818.43	4.17	12.18	1,816.26	44.95	51.84	-51.75	0.40	0.22	-4.54



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,831.86	4.20	11.62	1,829.66	45.91	52.04	-51.95	0.38	0.22	-4.17
1,845.29	4.22	11.13	1,843.05	46.88	52.24	-52.15	0.31	0.15	-3.65
1,858.71	4.24	10.73	1,856.44	47.85	52.42	-52.33	0.27	0.15	-2.98
1,872.14	4.26	10.46	1,869.83	48.83	52.61	-52.51	0.21	0.15	-2.01
1,885.57	4.27	10.37	1,883.22	49.81	52.79	-52.69	0.09	0.07	-0.67
1,899.00	4.28	10.54	1,896.61	50.80	52.97	-52.87	0.12	0.07	1.27
1,912.43	4.27	11.12	1,910.01	51.78	53.16	-53.06	0.33	-0.07	4.32
1,925.86	4.26	11.96	1,923.40	52.76	53.36	-53.26	0.47	-0.07	6.25
1,939.29	4.25	12.98	1,936.79	53.73	53.57	-53.47	0.57	-0.07	7.59
1,952.71	4.23	14.10	1,950.18	54.70	53.80	-53.70	0.63	-0.15	8.35
1,966.14	4.22	15.26	1,963.57	55.65	54.06	-53.95	0.64	-0.07	8.64
1,979.57	4.21	16.42	1,976.96	56.60	54.32	-54.22	0.64	-0.07	8.64
1,993.00	4.21	17.52	1,990.36	57.55	54.61	-54.50	0.60	0.00	8.19
2,006.57	4.20	18.47	2,003.89	58.49	54.92	-54.81	0.52	-0.07	7.00
2,020.14	4.20	19.33	2,017.42	59.43	55.24	-55.13	0.46	0.00	6.34
2,033.71	4.19	20.14	2,030.96	60.37	55.58	-55.46	0.44	-0.07	5.97
2,047.29	4.19	20.93	2,044.50	61.30	55.92	-55.81	0.43	0.00	5.82
2,060.86	4.17	21.71	2,058.04	62.22	56.28	-56.16	0.44	-0.15	5.75
2,074.43	4.15	22.51	2,071.57	63.13	56.65	-56.53	0.45	-0.15	5.90
2,088.00	4.11	23.37	2,085.10	64.03	57.04	-56.91	0.54	-0.29	6.34
2,101.43	4.04	24.28	2,098.50	64.90	57.42	-57.30	0.71	-0.52	6.78
2,114.86	3.95	25.26	2,111.90	65.75	57.81	-57.69	0.84	-0.67	7.30
2,128.29	3.86	26.28	2,125.30	66.58	58.21	-58.08	0.85	-0.67	7.59
2,141.71	3.76	27.33	2,138.69	67.37	58.61	-58.48	0.91	-0.75	7.82
2,155.14	3.67	28.39	2,152.09	68.14	59.02	-58.89	0.84	-0.67	7.89
2,168.57	3.60	29.40	2,165.49	68.89	59.43	-59.30	0.71	-0.52	7.52
2,182.00	3.54	30.30	2,178.90	69.61	59.85	-59.71	0.61	-0.45	6.70
2,195.43	3.51	30.95	2,192.30	70.32	60.27	-60.13	0.37	-0.22	4.84
2,208.86	3.51	31.45	2,205.70	71.03	60.69	-60.56	0.23	0.00	3.72
2,222.29	3.52	31.84	2,219.11	71.73	61.13	-60.99	0.19	0.07	2.90
2,235.71	3.55	32.10	2,232.50	72.43	61.56	-61.42	0.25	0.22	1.94
2,249.14	3.58	32.26	2,245.91	73.13	62.01	-61.87	0.24	0.22	1.19
2,262.57	3.63	32.28	2,259.31	73.85	62.46	-62.32	0.37	0.37	0.15
2,276.00	3.69	32.15	2,272.71	74.57	62.92	-62.77	0.45	0.45	-0.97
2,289.43	3.77	31.78	2,286.12	75.32	63.38	-63.23	0.62	0.60	-2.76
2,302.86	3.86	31.29	2,299.52	76.08	63.85	-63.70	0.71	0.67	-3.65
2,316.29	3.96	30.74	2,312.91	76.86	64.32	-64.17	0.80	0.74	-4.10
2,329.71	4.06	30.15	2,326.30	77.67	64.79	-64.64	0.81	0.75	-4.40
2,343.14	4.16	29.57	2,339.70	78.51	65.27	-65.12	0.81	0.74	-4.32
2,356.57	4.26	28.99	2,353.09	79.37	65.75	-65.60	0.81	0.74	-4.32
2,370.00	4.35	28.44	2,366.48	80.25	66.24	-66.08	0.74	0.67	-4.10
2,383.57	4.43	27.83	2,380.01	81.17	66.73	-66.57	0.68	0.59	-4.50
2,397.14	4.49	27.25	2,393.54	82.10	67.22	-67.06	0.55	0.44	-4.27



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,410.71	4.55	26.70	2,407.07	83.05	67.70	-67.54	0.55	0.44	-4.05	
2,424.29	4.60	26.19	2,420.61	84.02	68.18	-68.02	0.47	0.37	-3.76	
2,437.86	4.66	25.72	2,434.13	85.01	68.66	-68.50	0.52	0.44	-3.46	
2,451.43	4.71	25.30	2,447.66	86.01	69.14	-68.98	0.45	0.37	-3.10	
2,465.00	4.75	24.94	2,461.18	87.02	69.62	-69.45	0.37	0.29	-2.65	
2,478.43	4.80	24.66	2,474.56	88.04	70.08	-69.92	0.41	0.37	-2.08	
2,491.86	4.84	24.43	2,487.95	89.06	70.55	-70.38	0.33	0.30	-1.71	
2,505.29	4.87	24.23	2,501.33	90.10	71.02	-70.85	0.26	0.22	-1.49	
2,518.71	4.91	24.05	2,514.70	91.14	71.49	-71.31	0.32	0.30	-1.34	
2,532.14	4.94	23.87	2,528.08	92.20	71.96	-71.78	0.25	0.22	-1.34	
2,545.57	4.97	23.68	2,541.46	93.26	72.43	-72.25	0.25	0.22	-1.41	
2,559.00	4.99	23.46	2,554.84	94.33	72.89	-72.71	0.21	0.15	-1.64	
2,572.57	5.01	23.19	2,568.36	95.41	73.36	-73.18	0.23	0.15	-1.99	
2,586.14	5.02	22.89	2,581.88	96.51	73.82	-73.64	0.21	0.07	-2.21	
2,599.71	5.02	22.58	2,595.39	97.60	74.28	-74.10	0.20	0.00	-2.28	
2,613.29	5.03	22.25	2,608.92	98.70	74.74	-74.55	0.23	0.07	-2.43	
2,626.86	5.03	21.94	2,622.44	99.80	75.18	-74.99	0.20	0.00	-2.28	
2,640.43	5.03	21.63	2,635.96	100.91	75.63	-75.43	0.20	0.00	-2.28	
2,654.00	5.03	21.35	2,649.47	102.01	76.06	-75.87	0.18	0.00	-2.06	
2,667.43	5.03	21.12	2,662.85	103.11	76.49	-76.29	0.15	0.00	-1.71	
2,680.86	5.02	20.92	2,676.23	104.21	76.91	-76.71	0.15	-0.07	-1.49	
2,694.29	5.02	20.73	2,689.61	105.31	77.33	-77.13	0.12	0.00	-1.41	
2,707.71	5.02	20.54	2,702.98	106.41	77.74	-77.54	0.12	0.00	-1.42	
2,721.14	5.03	20.36	2,716.36	107.51	78.15	-77.95	0.14	0.07	-1.34	
2,721.79	5.03	20.28	2,717.00	107.56	78.17	-77.97	1.26	0.68	-12.18	
Capitan										
2,734.57	5.04	20.18	2,729.73	108.62	78.56	-78.35	0.08	0.04	-0.79	
2,748.00	5.05	19.98	2,743.11	109.72	78.97	-78.76	0.15	0.07	-1.49	
2,761.57	5.09	19.75	2,756.63	110.85	79.37	-79.16	0.33	0.29	-1.69	
2,775.14	5.13	19.51	2,770.15	111.99	79.78	-79.56	0.33	0.29	-1.77	
2,788.71	5.17	19.26	2,783.66	113.14	80.18	-79.97	0.34	0.29	-1.84	
2,802.29	5.22	19.01	2,797.19	114.30	80.59	-80.37	0.40	0.37	-1.84	
2,815.86	5.26	18.75	2,810.70	115.47	80.99	-80.77	0.34	0.29	-1.92	
2,829.43	5.31	18.50	2,824.21	116.66	81.39	-81.16	0.41	0.37	-1.84	
2,843.00	5.35	18.25	2,837.72	117.85	81.78	-81.56	0.34	0.29	-1.84	
2,856.43	5.38	17.98	2,851.09	119.05	82.17	-81.95	0.29	0.22	-2.01	
2,869.86	5.40	17.73	2,864.46	120.25	82.56	-82.33	0.23	0.15	-1.86	
2,883.29	5.42	17.48	2,877.83	121.46	82.94	-82.71	0.23	0.15	-1.86	
2,896.71	5.43	17.25	2,891.19	122.67	83.32	-83.09	0.18	0.07	-1.71	
2,910.14	5.45	17.06	2,904.56	123.88	83.70	-83.46	0.20	0.15	-1.41	
2,923.57	5.47	16.90	2,917.93	125.11	84.07	-83.83	0.19	0.15	-1.19	
2,937.00	5.48	16.81	2,931.30	126.33	84.44	-84.20	0.10	0.07	-0.67	
2,950.57	5.50	16.81	2,944.81	127.57	84.82	-84.57	0.15	0.15	0.00	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,964.14	5.52	16.87	2,958.32	128.82	85.20	-84.95	0.15	0.15	0.44	
2,977.71	5.54	16.95	2,971.82	130.07	85.58	-85.33	0.16	0.15	0.59	
2,991.29	5.56	17.03	2,985.34	131.33	85.96	-85.71	0.16	0.15	0.59	
3,004.86	5.59	17.08	2,998.85	132.59	86.35	-86.09	0.22	0.22	0.37	
3,018.43	5.62	17.06	3,012.35	133.86	86.74	-86.48	0.22	0.22	-0.15	
3,032.00	5.65	16.94	3,025.85	135.13	87.13	-86.87	0.24	0.22	-0.88	
3,045.57	5.69	16.66	3,039.36	136.41	87.51	-87.25	0.36	0.29	-2.06	
3,059.14	5.74	16.28	3,052.86	137.71	87.90	-87.63	0.46	0.37	-2.80	
3,072.71	5.79	15.85	3,066.36	139.02	88.27	-88.01	0.49	0.37	-3.17	
3,086.29	5.83	15.41	3,079.87	140.34	88.64	-88.37	0.44	0.29	-3.24	
3,099.86	5.88	14.98	3,093.37	141.68	89.01	-88.73	0.49	0.37	-3.17	
3,113.43	5.93	14.59	3,106.87	143.03	89.36	-89.09	0.47	0.37	-2.87	
3,127.00	5.96	14.27	3,120.37	144.39	89.71	-89.44	0.33	0.22	-2.36	
3,140.43	5.99	14.06	3,133.72	145.75	90.06	-89.78	0.28	0.22	-1.56	
3,153.86	6.01	13.92	3,147.08	147.11	90.39	-90.11	0.18	0.15	-1.04	
3,167.29	6.03	13.84	3,160.44	148.48	90.73	-90.45	0.16	0.15	-0.60	
3,180.71	6.04	13.78	3,173.78	149.85	91.07	-90.78	0.09	0.07	-0.45	
3,194.14	6.06	13.74	3,187.14	151.22	91.41	-91.12	0.15	0.15	-0.30	
3,207.57	6.07	13.70	3,200.49	152.60	91.74	-91.45	0.08	0.07	-0.30	
3,221.00	6.09	13.65	3,213.85	153.98	92.08	-91.78	0.15	0.15	-0.37	
3,234.57	6.11	13.56	3,227.34	155.38	92.42	-92.12	0.16	0.15	-0.66	
3,248.14	6.13	13.45	3,240.83	156.79	92.76	-92.45	0.17	0.15	-0.81	
3,261.71	6.16	13.33	3,254.32	158.20	93.09	-92.79	0.24	0.22	-0.88	
3,275.29	6.19	13.19	3,267.83	159.62	93.43	-93.12	0.25	0.22	-1.03	
3,288.86	6.22	13.02	3,281.32	161.05	93.76	-93.45	0.26	0.22	-1.25	
3,302.43	6.25	12.82	3,294.81	162.49	94.09	-93.78	0.27	0.22	-1.47	
3,316.00	6.29	12.58	3,308.29	163.94	94.42	-94.10	0.35	0.29	-1.77	
3,330.56	6.34	12.23	3,322.77	165.50	94.76	-94.44	0.43	0.34	-2.40	
3,345.11	6.39	11.84	3,337.23	167.08	95.10	-94.77	0.45	0.34	-2.68	
3,359.67	6.44	11.45	3,351.70	168.67	95.42	-95.10	0.46	0.34	-2.68	
3,374.22	6.49	11.08	3,366.15	170.28	95.74	-95.42	0.45	0.34	-2.54	
3,388.78	6.54	10.75	3,380.62	171.90	96.06	-95.73	0.43	0.34	-2.27	
3,403.33	6.58	10.49	3,395.07	173.53	96.36	-96.03	0.34	0.27	-1.79	
3,417.89	6.61	10.34	3,409.54	175.18	96.67	-96.33	0.24	0.21	-1.03	
3,432.44	6.62	10.36	3,423.99	176.83	96.97	-96.63	0.07	0.07	0.14	
3,447.00	6.60	10.61	3,438.45	178.47	97.27	-96.93	0.24	-0.14	1.72	
3,460.43	6.56	11.24	3,451.80	179.99	97.56	-97.22	0.61	-0.30	4.69	
3,460.64	6.56	11.24	3,452.00	180.01	97.57	-97.22	0.00	0.00	0.00	
Dlwr Mnt Group										
3,473.86	6.49	12.09	3,465.14	181.48	97.87	-97.52	0.90	-0.53	6.43	
3,487.29	6.41	13.08	3,478.48	182.95	98.20	-97.85	1.02	-0.60	7.37	
3,500.71	6.33	14.13	3,491.82	184.40	98.55	-98.20	1.05	-0.60	7.82	
3,514.14	6.25	15.17	3,505.17	185.82	98.92	-98.57	1.04	-0.60	7.74	
3,527.57	6.18	16.10	3,518.52	187.22	99.31	-98.95	0.91	-0.52	6.92	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,541.00	6.05	19.41	3,531.87	188.59	99.75	-99.39	2.80	-0.97	24.65	
3,554.57	5.92	24.81	3,545.37	189.89	100.28	-99.92	4.26	-0.96	39.79	
3,568.14	5.88	24.85	3,558.87	191.16	100.87	-100.50	0.30	-0.29	0.29	
3,581.71	5.86	24.75	3,572.37	192.42	101.45	-101.08	0.17	-0.15	-0.74	
3,595.29	5.83	24.61	3,585.88	193.68	102.03	-101.65	0.24	-0.22	-1.03	
3,608.86	5.80	24.52	3,599.38	194.93	102.60	-102.22	0.23	-0.22	-0.66	
3,622.43	5.76	24.58	3,612.88	196.17	103.17	-102.79	0.30	-0.29	0.44	
3,636.00	5.70	24.95	3,626.38	197.40	103.73	-103.35	0.52	-0.44	2.73	
3,649.43	5.61	25.91	3,639.74	198.60	104.30	-103.92	0.97	-0.67	7.15	
3,662.86	5.51	27.22	3,653.11	199.76	104.88	-104.50	1.20	-0.74	9.75	
3,676.29	5.40	28.79	3,666.48	200.89	105.48	-105.10	1.38	-0.82	11.69	
3,689.71	5.29	30.50	3,679.84	201.97	106.10	-105.71	1.44	-0.82	12.74	
3,703.14	5.19	32.26	3,693.22	203.02	106.74	-106.35	1.41	-0.74	13.10	
3,716.57	5.10	33.96	3,706.59	204.03	107.40	-107.01	1.32	-0.67	12.66	
3,730.00	5.02	37.07	3,719.97	204.99	108.08	-107.69	2.13	-0.60	23.16	
3,743.57	4.98	44.43	3,733.49	205.89	108.85	-108.46	4.73	-0.29	54.24	
3,757.14	4.92	45.17	3,747.01	206.72	109.68	-109.28	0.65	-0.44	5.45	
3,770.71	4.86	45.75	3,760.53	207.53	110.50	-110.11	0.57	-0.44	4.27	
3,784.29	4.80	46.20	3,774.06	208.32	111.33	-110.93	0.52	-0.44	3.31	
3,797.86	4.75	46.52	3,787.58	209.10	112.14	-111.74	0.42	-0.37	2.36	
3,811.43	4.70	46.70	3,801.11	209.87	112.96	-112.55	0.38	-0.37	1.33	
3,825.00	4.63	46.70	3,814.63	210.63	113.76	-113.35	0.52	-0.52	0.00	
3,838.43	4.56	46.50	3,828.02	211.37	114.54	-114.14	0.53	-0.52	-1.49	
3,851.86	4.48	46.13	3,841.41	212.10	115.31	-114.90	0.63	-0.60	-2.76	
3,865.29	4.39	45.60	3,854.80	212.82	116.05	-115.64	0.74	-0.67	-3.95	
3,878.71	4.29	44.94	3,868.18	213.54	116.77	-116.36	0.83	-0.75	-4.92	
3,892.14	4.20	44.13	3,881.57	214.25	117.47	-117.06	0.81	-0.67	-6.03	
3,905.57	4.10	43.16	3,894.97	214.95	118.14	-117.73	0.91	-0.74	-7.22	
3,919.00	4.00	41.97	3,908.36	215.65	118.78	-118.37	0.97	-0.74	-8.86	
3,932.57	3.89	40.66	3,921.90	216.35	119.40	-118.98	1.05	-0.81	-9.65	
3,946.14	3.77	39.18	3,935.44	217.04	119.98	-119.56	1.15	-0.88	-10.91	
3,959.71	3.66	37.62	3,948.98	217.73	120.53	-120.11	1.10	-0.81	-11.50	
3,973.29	3.56	36.11	3,962.53	218.42	121.04	-120.62	1.02	-0.74	-11.12	
3,986.86	3.47	34.81	3,976.08	219.09	121.52	-121.10	0.89	-0.66	-9.58	
4,000.43	3.40	33.96	3,989.62	219.76	121.98	-121.56	0.64	-0.52	-6.26	
4,014.00	3.34	33.89	4,003.17	220.43	122.43	-122.00	0.44	-0.44	-0.52	
4,027.43	3.33	35.20	4,016.58	221.07	122.87	-122.45	0.57	-0.07	9.75	
4,040.86	3.35	37.21	4,029.99	221.70	123.33	-122.91	0.88	0.15	14.97	
4,054.29	3.39	39.59	4,043.39	222.32	123.82	-123.40	1.08	0.30	17.72	
4,067.71	3.45	42.07	4,056.79	222.93	124.35	-123.92	1.19	0.45	18.48	
4,081.14	3.51	44.44	4,070.19	223.52	124.91	-124.48	1.16	0.45	17.65	
4,094.57	3.58	46.55	4,083.60	224.10	125.50	-125.07	1.10	0.52	15.71	
4,108.00	3.64	48.25	4,097.00	224.67	126.12	-125.69	0.91	0.45	12.66	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,121.43	3.88	55.37	4,110.40	225.21	126.81	-126.38	3.91	1.79	53.02	
4,134.86	4.09	59.94	4,123.80	225.71	127.60	-127.17	2.83	1.56	34.03	
4,148.29	4.07	60.20	4,137.20	226.19	128.43	-127.99	0.20	-0.15	1.94	
4,161.71	4.05	60.23	4,150.58	226.66	129.25	-128.82	0.15	-0.15	0.22	
4,175.14	4.03	60.09	4,163.98	227.13	130.07	-129.64	0.17	-0.15	-1.04	
4,188.57	4.01	59.82	4,177.38	227.60	130.89	-130.45	0.21	-0.15	-2.01	
4,202.00	3.99	59.47	4,190.77	228.08	131.70	-131.26	0.24	-0.15	-2.61	
4,215.57	3.98	59.07	4,204.31	228.56	132.51	-132.07	0.22	-0.07	-2.95	
4,229.14	3.97	58.61	4,217.85	229.05	133.31	-132.87	0.25	-0.07	-3.39	
4,242.71	3.97	58.15	4,231.39	229.54	134.11	-133.67	0.23	0.00	-3.39	
4,256.29	3.98	57.69	4,244.93	230.04	134.91	-134.47	0.25	0.07	-3.39	
4,269.86	3.99	57.28	4,258.47	230.55	135.71	-135.26	0.22	0.07	-3.02	
4,283.43	4.00	56.97	4,272.01	231.06	136.50	-136.06	0.18	0.07	-2.28	
4,297.00	4.01	56.81	4,285.54	231.58	137.29	-136.85	0.11	0.07	-1.18	
4,310.43	4.02	56.89	4,298.94	232.09	138.08	-137.63	0.09	0.07	0.60	
4,323.86	4.04	57.13	4,312.34	232.60	138.87	-138.43	0.19	0.15	1.79	
4,337.29	4.06	57.45	4,325.73	233.12	139.67	-139.22	0.22	0.15	2.38	
4,350.71	4.09	57.84	4,339.12	233.63	140.48	-140.03	0.30	0.22	2.91	
4,364.14	4.12	58.26	4,352.52	234.14	141.29	-140.84	0.32	0.22	3.13	
4,377.57	4.16	58.69	4,365.91	234.64	142.12	-141.67	0.38	0.30	3.20	
4,391.00	4.21	59.12	4,379.30	235.15	142.96	-142.51	0.44	0.37	3.20	
4,404.57	4.27	59.58	4,392.84	235.66	143.82	-143.37	0.51	0.44	3.39	
4,418.14	4.35	60.02	4,406.37	236.17	144.70	-144.25	0.64	0.59	3.24	
4,431.71	4.43	60.45	4,419.90	236.69	145.60	-145.15	0.64	0.59	3.17	
4,445.29	4.52	60.86	4,433.44	237.21	146.53	-146.07	0.70	0.66	3.02	
4,458.86	4.61	61.25	4,446.97	237.73	147.47	-147.02	0.70	0.66	2.87	
4,472.43	4.70	61.61	4,460.49	238.26	148.44	-147.98	0.70	0.66	2.65	
4,486.00	4.79	61.95	4,474.01	238.79	149.43	-148.97	0.69	0.66	2.51	
4,499.43	4.88	62.29	4,487.40	239.32	150.43	-149.97	0.70	0.67	2.53	
4,512.86	4.96	62.60	4,500.78	239.85	151.45	-150.99	0.63	0.60	2.31	
4,526.29	5.04	62.89	4,514.16	240.39	152.49	-152.03	0.62	0.60	2.16	
4,539.71	5.12	63.13	4,527.52	240.93	153.55	-153.09	0.62	0.60	1.79	
4,553.14	5.18	63.32	4,540.90	241.47	154.63	-154.16	0.46	0.45	1.41	
4,566.57	5.23	63.44	4,554.27	242.01	155.72	-155.25	0.38	0.37	0.89	
4,580.00	5.27	63.47	4,567.65	242.56	156.81	-156.35	0.30	0.30	0.22	
4,593.57	5.28	63.36	4,581.16	243.12	157.93	-157.46	0.10	0.07	-0.81	
4,607.14	5.27	63.14	4,594.67	243.68	159.04	-158.58	0.17	-0.07	-1.62	
4,620.71	5.25	62.87	4,608.18	244.25	160.15	-159.68	0.23	-0.15	-1.99	
4,634.29	5.23	62.55	4,621.71	244.82	161.26	-160.79	0.26	-0.15	-2.36	
4,647.86	5.20	62.22	4,635.22	245.39	162.35	-161.88	0.31	-0.22	-2.43	
4,661.43	5.18	61.87	4,648.74	245.96	163.43	-162.96	0.28	-0.15	-2.58	
4,675.00	5.13	60.79	4,662.25	246.55	164.50	-164.03	0.80	-0.37	-7.96	
4,688.43	4.86	54.77	4,675.63	247.17	165.49	-165.02	4.39	-2.01	-44.83	
4,701.86	4.89	54.46	4,689.01	247.83	166.42	-165.95	0.30	0.22	-2.31	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,715.29	4.92	54.14	4,702.39	248.50	167.35	-166.88	0.30	0.22	-2.38
4,728.71	4.95	53.81	4,715.76	249.18	168.29	-167.81	0.31	0.22	-2.46
4,742.14	4.98	53.46	4,729.14	249.87	169.22	-168.74	0.32	0.22	-2.61
4,755.57	5.01	53.07	4,742.52	250.57	170.16	-169.68	0.34	0.22	-2.90
4,769.00	5.02	52.63	4,755.90	251.28	171.10	-170.61	0.30	0.07	-3.28
4,782.43	5.02	52.08	4,769.28	252.00	172.03	-171.54	0.36	0.00	-4.10
4,795.86	5.00	51.49	4,782.66	252.72	172.95	-172.46	0.41	-0.15	-4.39
4,809.29	4.97	50.86	4,796.04	253.45	173.86	-173.37	0.46	-0.22	-4.69
4,822.71	4.94	50.22	4,809.41	254.19	174.75	-174.26	0.47	-0.22	-4.77
4,836.14	4.91	49.61	4,822.79	254.93	175.63	-175.15	0.45	-0.22	-4.54
4,849.57	4.88	49.07	4,836.17	255.68	176.50	-176.01	0.41	-0.22	-4.02
4,863.00	4.85	48.64	4,849.55	256.43	177.36	-176.87	0.35	-0.22	-3.20
4,876.57	4.83	48.43	4,863.07	257.19	178.22	-177.73	0.20	-0.15	-1.55
4,890.14	4.81	48.35	4,876.59	257.94	179.07	-178.58	0.16	-0.15	-0.59
4,903.71	4.80	48.31	4,890.12	258.70	179.92	-179.42	0.08	-0.07	-0.29
4,917.29	4.78	48.30	4,903.65	259.45	180.77	-180.27	0.15	-0.15	-0.07
4,930.86	4.76	48.25	4,917.17	260.20	181.61	-181.11	0.15	-0.15	-0.37
4,944.43	4.75	48.13	4,930.69	260.95	182.45	-181.95	0.10	-0.07	-0.88
4,958.00	4.72	47.87	4,944.22	261.70	183.28	-182.78	0.27	-0.22	-1.92
4,971.43	4.69	47.37	4,957.60	262.45	184.10	-183.59	0.38	-0.22	-3.72
4,984.86	4.66	46.72	4,970.99	263.19	184.90	-184.39	0.45	-0.22	-4.84
4,998.29	4.62	45.97	4,984.37	263.94	185.68	-185.18	0.54	-0.30	-5.58
5,011.71	4.59	45.14	4,997.75	264.70	186.45	-185.94	0.54	-0.22	-6.18
5,025.14	4.55	44.28	5,011.14	265.46	187.20	-186.69	0.59	-0.30	-6.40
5,038.57	4.50	43.40	5,024.53	266.22	187.94	-187.43	0.64	-0.37	-6.55
5,052.00	4.46	42.53	5,037.92	266.99	188.65	-188.14	0.59	-0.30	-6.48
5,065.43	4.40	41.76	5,051.30	267.76	189.35	-188.83	0.63	-0.45	-5.73
5,078.86	4.34	41.03	5,064.70	268.53	190.03	-189.51	0.61	-0.45	-5.44
5,092.29	4.28	40.31	5,078.09	269.29	190.68	-190.17	0.60	-0.45	-5.36
5,105.71	4.22	39.60	5,091.47	270.05	191.32	-190.80	0.59	-0.45	-5.29
5,119.14	4.16	38.90	5,104.87	270.81	191.94	-191.42	0.59	-0.45	-5.21
5,132.57	4.10	38.21	5,118.26	271.57	192.55	-192.02	0.58	-0.45	-5.14
5,146.00	4.04	37.54	5,131.66	272.32	193.13	-192.61	0.57	-0.45	-4.99
5,159.57	3.98	36.95	5,145.19	273.08	193.71	-193.18	0.54	-0.44	-4.35
5,173.14	3.92	36.39	5,158.73	273.83	194.26	-193.74	0.53	-0.44	-4.13
5,186.71	3.87	35.84	5,172.27	274.57	194.81	-194.28	0.46	-0.37	-4.05
5,200.29	3.81	35.29	5,185.82	275.31	195.34	-194.81	0.52	-0.44	-4.05
5,213.86	3.76	34.72	5,199.36	276.04	195.85	-195.32	0.46	-0.37	-4.20
5,227.43	3.71	34.13	5,212.90	276.77	196.35	-195.82	0.46	-0.37	-4.35
5,241.00	3.67	33.51	5,226.44	277.50	196.84	-196.30	0.42	-0.29	-4.57
5,254.43	3.63	32.87	5,239.85	278.22	197.30	-196.77	0.43	-0.30	-4.77
5,267.86	3.60	32.20	5,253.25	278.93	197.76	-197.22	0.39	-0.22	-4.99
5,281.29	3.57	31.47	5,266.65	279.64	198.20	-197.67	0.41	-0.22	-5.44



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,294.71	3.54	30.68	5,280.05	280.36	198.63	-198.09	0.43	-0.22	-5.89	
5,308.14	3.50	29.80	5,293.45	281.07	199.05	-198.51	0.50	-0.30	-6.55	
5,321.57	3.45	28.78	5,306.86	281.78	199.45	-198.90	0.59	-0.37	-7.59	
5,335.00	3.39	27.56	5,320.26	282.48	199.82	-199.28	0.70	-0.45	-9.08	
5,342.75	3.34	26.72	5,328.00	282.89	200.03	-199.49	0.92	-0.67	-10.85	
Lower Brushy Canyon										
5,348.57	3.30	26.07	5,333.81	283.19	200.18	-199.64	0.92	-0.66	-11.15	
5,362.14	3.19	24.33	5,347.36	283.88	200.51	-199.96	1.09	-0.81	-12.82	
5,375.71	3.08	22.38	5,360.91	284.57	200.80	-200.26	1.13	-0.81	-14.37	
5,389.29	2.98	20.24	5,374.47	285.23	201.06	-200.52	1.11	-0.74	-15.76	
5,402.86	2.88	17.98	5,388.02	285.89	201.29	-200.74	1.13	-0.74	-16.65	
5,416.43	2.79	15.65	5,401.57	286.53	201.49	-200.93	1.08	-0.66	-17.17	
5,430.00	2.73	13.39	5,415.13	287.16	201.65	-201.10	0.92	-0.44	-16.65	
5,443.43	2.68	11.60	5,428.54	287.78	201.79	-201.23	0.73	-0.37	-13.33	
5,456.86	2.65	9.92	5,441.96	288.40	201.90	-201.35	0.62	-0.22	-12.51	
5,470.29	2.63	8.33	5,455.37	289.01	202.00	-201.45	0.57	-0.15	-11.84	
5,483.71	2.62	6.80	5,468.78	289.62	202.08	-201.53	0.53	-0.07	-11.40	
5,497.14	2.61	5.32	5,482.20	290.23	202.15	-201.59	0.51	-0.07	-11.02	
5,510.57	2.59	3.85	5,495.61	290.83	202.20	-201.64	0.52	-0.15	-10.95	
5,524.00	2.56	2.35	5,509.03	291.44	202.23	-201.67	0.55	-0.22	-11.17	
5,537.57	2.50	0.80	5,522.59	292.03	202.24	-201.68	0.67	-0.44	-11.42	
5,551.14	2.43	359.23	5,536.14	292.62	202.24	-201.68	0.72	-0.52	-11.57	
5,564.71	2.36	357.69	5,549.70	293.18	202.23	-201.67	0.70	-0.52	-11.35	
5,578.29	2.29	356.29	5,563.27	293.73	202.20	-201.64	0.66	-0.52	-10.31	
5,591.86	2.22	355.15	5,576.83	294.27	202.16	-201.60	0.61	-0.52	-8.40	
5,605.43	2.17	354.51	5,590.39	294.78	202.11	-201.55	0.41	-0.37	-4.72	
5,619.00	2.14	354.68	5,603.95	295.29	202.07	-201.50	0.23	-0.22	1.25	
5,632.43	2.16	356.11	5,617.37	295.79	202.03	-201.46	0.43	0.15	10.65	
5,645.86	2.20	358.17	5,630.79	296.30	202.00	-201.43	0.66	0.30	15.34	
5,659.29	2.26	0.46	5,644.21	296.83	201.99	-201.42	0.80	0.45	17.05	
5,669.09	2.31	2.12	5,654.00	297.22	202.00	-201.43	0.85	0.52	16.98	
Bone Spring Line										
5,672.71	2.33	2.72	5,657.62	297.36	202.01	-201.44	0.85	0.53	16.47	
5,686.14	2.41	4.74	5,671.04	297.92	202.05	-201.47	0.86	0.60	15.04	
5,699.57	2.48	6.37	5,684.46	298.49	202.10	-201.53	0.73	0.52	12.14	
5,713.00	2.81	13.46	5,697.87	299.10	202.21	-201.64	3.46	2.46	52.79	
5,726.43	3.29	19.65	5,711.28	299.78	202.42	-201.84	4.33	3.57	46.09	
5,739.86	3.40	20.79	5,724.69	300.52	202.69	-202.11	0.96	0.82	8.49	
5,753.29	3.41	20.86	5,738.10	301.26	202.97	-202.39	0.08	0.07	0.52	
5,766.71	3.41	20.80	5,751.49	302.01	203.25	-202.67	0.03	0.00	-0.45	
5,780.14	3.42	20.66	5,764.90	302.76	203.54	-202.96	0.10	0.07	-1.04	
5,793.57	3.41	20.50	5,778.31	303.50	203.82	-203.24	0.10	-0.07	-1.19	
5,807.00	3.40	20.36	5,791.71	304.25	204.10	-203.51	0.10	-0.07	-1.04	
5,820.57	3.37	20.31	5,805.26	305.00	204.38	-203.79	0.22	-0.22	-0.37	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,834.14	3.34	20.30	5,818.80	305.75	204.65	-204.06	0.22	-0.22	-0.07
5,847.71	3.30	20.29	5,832.35	306.49	204.92	-204.34	0.29	-0.29	-0.07
5,861.29	3.26	20.25	5,845.91	307.21	205.19	-204.60	0.30	-0.29	-0.29
5,874.86	3.21	20.15	5,859.46	307.93	205.46	-204.87	0.37	-0.37	-0.74
5,888.43	3.15	19.93	5,873.01	308.64	205.72	-205.12	0.45	-0.44	-1.62
5,902.00	3.09	19.51	5,886.56	309.34	205.97	-205.37	0.47	-0.44	-3.10
5,915.43	3.01	18.73	5,899.97	310.01	206.20	-205.60	0.67	-0.60	-5.81
5,928.86	2.94	17.74	5,913.38	310.67	206.42	-205.82	0.65	-0.52	-7.37
5,942.29	2.86	16.64	5,926.79	311.32	206.62	-206.02	0.73	-0.60	-8.19
5,955.71	2.80	15.53	5,940.20	311.96	206.80	-206.20	0.61	-0.45	-8.27
5,969.14	2.75	14.56	5,953.61	312.59	206.97	-206.37	0.51	-0.37	-7.22
5,982.57	2.73	13.89	5,967.02	313.21	207.13	-206.53	0.28	-0.15	-4.99
5,996.00	2.75	13.78	5,980.44	313.83	207.28	-206.68	0.15	0.15	-0.82
6,009.43	2.84	14.35	5,993.85	314.47	207.44	-206.84	0.70	0.67	4.24
6,022.86	2.97	15.27	6,007.27	315.12	207.62	-207.01	1.03	0.97	6.85
6,036.29	3.12	16.33	6,020.68	315.81	207.81	-207.20	1.19	1.12	7.89
6,049.71	3.27	17.38	6,034.08	316.53	208.03	-207.42	1.20	1.12	7.82
6,063.14	3.42	18.35	6,047.48	317.27	208.27	-207.66	1.19	1.12	7.22
6,076.57	3.54	19.20	6,060.89	318.04	208.53	-207.92	0.97	0.89	6.33
6,090.00	3.83	21.70	6,074.29	318.85	208.83	-208.22	2.47	2.16	18.62
6,103.57	4.30	25.25	6,087.83	319.73	209.22	-208.60	3.93	3.46	26.16
6,117.14	4.79	28.99	6,101.35	320.69	209.71	-209.09	4.22	3.61	27.56
6,130.71	4.72	29.33	6,114.88	321.67	210.26	-209.64	0.56	-0.52	2.51
6,144.29	4.61	29.60	6,128.41	322.63	210.80	-210.18	0.83	-0.81	1.99
6,157.86	4.47	29.77	6,141.94	323.57	211.33	-210.71	1.04	-1.03	1.25
6,171.43	4.30	29.74	6,155.47	324.47	211.85	-211.22	1.25	-1.25	-0.22
6,185.00	4.08	29.40	6,169.00	325.33	212.34	-211.71	1.63	-1.62	-2.51
6,198.71	3.78	28.65	6,182.68	326.15	212.79	-212.17	2.22	-2.19	-5.47
6,212.43	3.45	27.40	6,196.37	326.91	213.20	-212.57	2.47	-2.41	-9.11
6,226.14	3.10	25.65	6,210.06	327.62	213.55	-212.92	2.65	-2.55	-12.76
6,239.86	2.75	23.30	6,223.76	328.25	213.84	-213.21	2.70	-2.55	-17.13
6,253.57	2.42	20.32	6,237.46	328.83	214.07	-213.44	2.60	-2.41	-21.74
6,267.29	2.12	16.73	6,251.17	329.34	214.24	-213.61	2.42	-2.19	-26.17
6,281.00	1.89	12.85	6,264.87	329.80	214.37	-213.73	1.95	-1.68	-28.30
6,294.43	1.74	11.35	6,278.29	330.22	214.46	-213.82	1.17	-1.12	-11.17
6,307.86	1.64	10.14	6,291.72	330.61	214.53	-213.90	0.79	-0.74	-9.01
6,321.29	1.57	9.17	6,305.14	330.98	214.59	-213.96	0.56	-0.52	-7.22
6,334.71	1.53	8.38	6,318.56	331.34	214.65	-214.01	0.34	-0.30	-5.89
6,348.14	1.49	7.73	6,331.98	331.69	214.70	-214.06	0.32	-0.30	-4.84
6,361.57	1.60	6.68	6,345.41	332.05	214.74	-214.11	0.85	0.82	-7.82
6,375.00	1.73	6.07	6,358.83	332.44	214.79	-214.15	0.98	0.97	-4.54
6,388.57	2.02	12.45	6,372.40	332.87	214.86	-214.22	2.63	2.14	47.02
6,402.14	2.35	18.02	6,385.96	333.37	215.00	-214.36	2.89	2.43	41.05



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,415.71	2.28	17.23	6,399.51	333.89	215.16	-214.52	0.57	-0.52	-5.82	
6,429.29	2.20	16.28	6,413.08	334.40	215.32	-214.67	0.65	-0.59	-7.00	
6,442.86	2.12	15.22	6,426.64	334.89	215.46	-214.81	0.66	-0.59	-7.81	
6,456.43	2.06	14.09	6,440.21	335.37	215.58	-214.94	0.54	-0.44	-8.33	
6,470.00	2.02	12.94	6,453.77	335.84	215.69	-215.05	0.42	-0.29	-8.47	
6,483.43	2.00	11.89	6,467.19	336.30	215.80	-215.15	0.31	-0.15	-7.82	
6,496.86	2.00	10.91	6,480.61	336.76	215.89	-215.24	0.25	0.00	-7.30	
6,510.29	2.01	10.11	6,494.03	337.22	215.97	-215.33	0.22	0.07	-5.96	
6,523.71	2.01	9.60	6,507.44	337.69	216.05	-215.41	0.13	0.00	-3.80	
6,537.14	2.01	9.54	6,520.87	338.15	216.13	-215.48	0.02	0.00	-0.45	
6,550.57	1.99	10.15	6,534.29	338.61	216.21	-215.56	0.22	-0.15	4.54	
6,564.00	2.14	14.44	6,547.71	339.09	216.32	-215.67	1.60	1.12	31.94	
6,577.29	2.46	19.95	6,560.99	339.59	216.48	-215.82	2.92	2.41	41.46	
6,590.57	2.86	23.60	6,574.25	340.17	216.71	-216.05	3.27	3.01	27.48	
6,603.86	2.88	27.82	6,587.53	340.76	216.99	-216.34	1.60	0.15	31.75	
6,617.14	2.65	34.24	6,600.79	341.31	217.32	-216.67	2.90	-1.73	48.34	
6,630.43	2.46	42.34	6,614.07	341.78	217.69	-217.03	3.07	-1.43	60.95	
6,643.71	2.34	51.07	6,627.34	342.16	218.09	-217.43	2.89	-0.90	65.74	
6,657.00	2.33	58.55	6,640.62	342.47	218.53	-217.87	2.29	-0.08	56.28	
6,670.43	2.29	62.73	6,654.04	342.74	219.00	-218.34	1.29	-0.30	31.12	
6,683.86	2.34	65.53	6,667.45	342.97	219.49	-218.83	0.92	0.37	20.85	
6,697.29	2.43	67.37	6,680.87	343.20	220.00	-219.34	0.88	0.67	13.70	
6,710.71	2.56	68.64	6,694.28	343.41	220.55	-219.89	1.05	0.97	9.46	
6,724.14	2.68	69.63	6,707.70	343.63	221.12	-220.46	0.95	0.89	7.37	
6,737.57	2.82	70.15	6,721.11	343.85	221.72	-221.06	1.06	1.04	3.87	
6,751.00	3.19	64.38	6,734.52	344.13	222.37	-221.71	3.56	2.76	-42.96	
6,764.57	3.65	59.61	6,748.07	344.51	223.08	-222.42	3.98	3.39	-35.15	
6,778.14	4.14	55.90	6,761.61	345.00	223.86	-223.20	4.06	3.61	-27.34	
6,791.71	4.63	52.78	6,775.14	345.61	224.70	-224.04	4.01	3.61	-22.99	
6,805.29	4.81	52.95	6,788.67	346.28	225.60	-224.93	1.33	1.33	1.25	
6,818.86	4.89	54.49	6,802.19	346.96	226.52	-225.85	1.13	0.59	11.35	
6,832.43	4.99	55.95	6,815.71	347.63	227.48	-226.81	1.18	0.74	10.76	
6,846.00	5.14	57.06	6,829.23	348.29	228.48	-227.81	1.32	1.11	8.18	
6,859.43	5.36	57.73	6,842.60	348.95	229.51	-228.84	1.70	1.64	4.99	
6,872.86	5.58	58.11	6,855.97	349.63	230.60	-229.93	1.66	1.64	2.83	
6,886.29	5.89	55.43	6,869.33	350.37	231.72	-231.05	3.05	2.31	-19.96	
6,899.71	6.31	51.01	6,882.68	351.22	232.86	-232.19	4.69	3.13	-32.94	
6,913.14	6.78	47.44	6,896.02	352.22	234.02	-233.34	4.63	3.50	-26.58	
6,926.57	7.09	46.02	6,909.35	353.33	235.20	-234.52	2.64	2.31	-10.57	
6,940.00	7.20	45.76	6,922.68	354.50	236.40	-235.72	0.85	0.82	-1.94	
6,953.43	7.20	45.19	6,936.00	355.68	237.60	-236.92	0.53	0.00	-4.24	
6,966.86	7.15	44.43	6,949.33	356.87	238.78	-238.10	0.80	-0.37	-5.66	
6,980.29	7.07	43.55	6,962.65	358.06	239.94	-239.25	1.01	-0.60	-6.55	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,993.71	6.98	42.63	6,975.97	359.26	241.06	-240.37	1.07	-0.67	-6.86	
7,007.14	6.88	41.75	6,989.30	360.46	242.15	-241.45	1.09	-0.74	-6.55	
7,020.57	6.83	40.47	7,002.64	361.67	243.20	-242.50	1.20	-0.37	-9.53	
7,034.00	7.01	36.21	7,015.97	362.94	244.20	-243.50	4.05	1.34	-31.72	
7,047.43	7.03	31.79	7,029.30	364.30	245.12	-244.42	4.02	0.15	-32.91	
7,048.14	7.03	31.57	7,030.00	364.37	245.16	-244.46	3.75	0.25	-30.56	
1st Bone Spring SD										
7,060.86	7.08	27.71	7,042.63	365.73	245.94	-245.23	3.75	0.38	-30.37	
7,074.29	7.09	27.88	7,055.96	367.20	246.71	-246.00	0.17	0.07	1.27	
7,087.71	7.11	28.10	7,069.27	368.66	247.49	-246.78	0.25	0.15	1.64	
7,101.14	7.13	28.30	7,082.60	370.13	248.27	-247.56	0.24	0.15	1.49	
7,114.57	7.15	28.39	7,095.93	371.60	249.07	-248.35	0.17	0.15	0.67	
7,128.00	7.16	28.27	7,109.25	373.07	249.86	-249.14	0.13	0.07	-0.89	
7,141.57	7.15	27.76	7,122.72	374.56	250.65	-249.93	0.47	-0.07	-3.76	
7,155.14	7.13	27.02	7,136.18	376.06	251.43	-250.71	0.69	-0.15	-5.45	
7,168.71	7.10	26.15	7,149.65	377.56	252.18	-251.46	0.82	-0.22	-6.41	
7,182.29	7.06	25.21	7,163.12	379.07	252.91	-252.18	0.90	-0.29	-6.92	
7,195.86	7.03	24.28	7,176.59	380.58	253.60	-252.87	0.87	-0.22	-6.85	
7,209.43	6.99	23.42	7,190.06	382.10	254.27	-253.54	0.83	-0.29	-6.34	
7,223.00	6.95	22.74	7,203.53	383.61	254.92	-254.18	0.68	-0.29	-5.01	
7,236.43	7.11	20.48	7,216.86	385.14	255.52	-254.78	2.38	1.19	-16.83	
7,249.86	7.23	16.97	7,230.18	386.73	256.06	-255.32	3.38	0.89	-26.14	
7,252.70	7.27	16.33	7,233.00	387.07	256.16	-255.42	3.11	1.28	-22.46	
2nd Bone Spring LM										
7,263.29	7.41	14.01	7,243.50	388.37	256.52	-255.77	3.11	1.36	-21.93	
7,276.71	7.38	14.39	7,256.81	390.05	256.94	-256.19	0.43	-0.22	2.83	
7,290.14	7.34	14.92	7,270.13	391.71	257.38	-256.62	0.59	-0.30	3.95	
7,303.57	7.29	15.54	7,283.45	393.36	257.83	-257.07	0.70	-0.37	4.62	
7,317.00	7.22	16.20	7,296.77	394.99	258.29	-257.53	0.81	-0.52	4.91	
7,330.57	7.11	16.79	7,310.24	396.62	258.77	-258.01	0.98	-0.81	4.35	
7,344.14	6.98	17.34	7,323.71	398.21	259.26	-258.49	1.08	-0.96	4.05	
7,357.71	6.84	17.86	7,337.18	399.76	259.75	-258.98	1.13	-1.03	3.83	
7,371.29	6.69	18.31	7,350.66	401.29	260.25	-259.48	1.17	-1.10	3.31	
7,384.86	6.54	18.66	7,364.14	402.77	260.74	-259.97	1.14	-1.11	2.58	
7,398.43	6.39	18.85	7,377.63	404.21	261.24	-260.46	1.12	-1.11	1.40	
7,412.00	6.24	18.78	7,391.11	405.63	261.72	-260.94	1.11	-1.11	-0.52	
7,425.43	6.12	18.22	7,404.47	407.00	262.18	-261.39	1.00	-0.89	-4.17	
7,438.86	6.00	17.38	7,417.82	408.35	262.61	-261.82	1.11	-0.89	-6.25	
7,452.29	5.89	16.37	7,431.18	409.68	263.01	-262.23	1.13	-0.82	-7.52	
7,465.71	5.78	15.27	7,444.53	410.99	263.39	-262.60	1.17	-0.82	-8.20	
7,479.14	5.67	14.18	7,457.89	412.29	263.73	-262.93	1.15	-0.82	-8.12	
7,492.57	5.55	13.19	7,471.26	413.56	264.04	-263.24	1.15	-0.89	-7.37	
7,506.00	5.71	10.19	7,484.62	414.85	264.30	-263.51	2.49	1.19	-22.34	
7,519.57	5.98	6.55	7,498.12	416.22	264.50	-263.70	3.38	1.99	-26.82	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,533.14	6.18	4.01	7,511.62	417.65	264.63	-263.83	2.47	1.47	-18.72	
7,546.71	5.93	4.41	7,525.11	419.08	264.74	-263.93	1.87	-1.84	2.95	
7,560.29	5.66	5.01	7,538.62	420.44	264.85	-264.04	2.04	-1.99	4.42	
7,573.86	5.39	5.74	7,552.13	421.75	264.97	-264.16	2.06	-1.99	5.38	
7,587.43	5.14	6.50	7,565.64	422.98	265.11	-264.29	1.91	-1.84	5.60	
7,601.00	4.92	7.16	7,579.16	424.16	265.25	-264.43	1.68	-1.62	4.86	
7,614.43	4.77	7.29	7,592.54	425.29	265.39	-264.57	1.12	-1.12	0.97	
7,627.86	4.66	7.25	7,605.92	426.39	265.53	-264.71	0.82	-0.82	-0.30	
7,641.29	4.57	7.10	7,619.31	427.46	265.67	-264.84	0.68	-0.67	-1.12	
7,654.71	4.51	6.88	7,632.69	428.51	265.79	-264.97	0.47	-0.45	-1.64	
7,668.14	4.44	6.64	7,646.08	429.55	265.92	-265.09	0.54	-0.52	-1.79	
7,681.57	4.38	6.43	7,659.47	430.58	266.04	-265.21	0.46	-0.45	-1.56	
7,695.00	4.49	5.68	7,672.86	431.61	266.15	-265.32	0.93	0.82	-5.58	
7,708.57	4.94	4.34	7,686.38	432.72	266.24	-265.41	3.41	3.32	-9.87	
7,722.14	5.44	4.53	7,699.90	433.95	266.34	-265.50	3.69	3.68	1.40	
7,735.71	5.72	3.96	7,713.40	435.26	266.43	-265.60	2.10	2.06	-4.20	
7,749.29	5.60	4.61	7,726.92	436.60	266.53	-265.70	1.00	-0.88	4.79	
7,762.86	5.48	5.35	7,740.42	437.90	266.65	-265.81	1.03	-0.88	5.45	
7,776.43	5.36	6.05	7,753.93	439.18	266.78	-265.93	1.01	-0.88	5.16	
7,790.00	5.25	6.57	7,767.44	440.42	266.91	-266.07	0.88	-0.81	3.83	
7,803.43	5.14	6.58	7,780.82	441.63	267.05	-266.20	0.82	-0.82	0.07	
7,816.86	5.05	6.30	7,794.20	442.82	267.19	-266.34	0.70	-0.67	-2.08	
7,830.29	4.95	5.79	7,807.57	443.98	267.31	-266.46	0.81	-0.74	-3.80	
7,843.71	4.85	5.10	7,820.94	445.12	267.42	-266.56	0.86	-0.75	-5.14	
7,857.14	4.75	4.23	7,834.33	446.24	267.51	-266.65	0.92	-0.74	-6.48	
7,870.57	4.63	3.19	7,847.71	447.34	267.58	-266.72	1.10	-0.89	-7.74	
7,884.00	4.49	1.94	7,861.10	448.41	267.63	-266.77	1.28	-1.04	-9.31	
7,884.90	4.48	1.86	7,862.00	448.48	267.63	-266.77	1.52	-1.33	-9.22	
2nd Bone Spring SD										
7,897.57	4.31	0.64	7,874.63	449.45	267.65	-266.79	1.52	-1.33	-9.61	
7,911.14	4.10	359.14	7,888.16	450.44	267.65	-266.79	1.75	-1.55	-11.05	
7,924.71	3.89	357.44	7,901.70	451.39	267.62	-266.76	1.78	-1.55	-12.53	
7,938.29	3.68	355.56	7,915.25	452.28	267.57	-266.70	1.80	-1.55	-13.84	
7,951.86	3.49	353.55	7,928.79	453.13	267.49	-266.62	1.68	-1.40	-14.81	
7,965.43	3.31	351.51	7,942.34	453.92	267.38	-266.51	1.60	-1.33	-15.03	
7,979.00	3.17	349.63	7,955.89	454.68	267.26	-266.39	1.30	-1.03	-13.85	
7,992.43	3.06	348.64	7,969.30	455.40	267.12	-266.25	0.91	-0.82	-7.37	
8,005.86	2.99	347.92	7,982.71	456.09	266.98	-266.10	0.59	-0.52	-5.36	
8,019.29	2.93	347.37	7,996.12	456.77	266.83	-265.95	0.49	-0.45	-4.10	
8,032.71	2.88	346.92	8,009.53	457.43	266.68	-265.80	0.41	-0.37	-3.35	
8,046.14	2.83	346.51	8,022.94	458.08	266.52	-265.64	0.40	-0.37	-3.05	
8,059.57	2.76	346.09	8,036.35	458.72	266.37	-265.49	0.54	-0.52	-3.13	
8,073.00	2.66	345.58	8,049.77	459.33	266.21	-265.33	0.77	-0.74	-3.80	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,086.57	2.52	344.72	8,063.32	459.93	266.06	-265.17	1.07	-1.03	-6.34	
8,100.14	2.36	343.63	8,076.88	460.48	265.90	-265.02	1.23	-1.18	-8.03	
8,113.71	2.18	342.31	8,090.44	461.00	265.74	-264.86	1.38	-1.33	-9.73	
8,127.29	1.99	340.76	8,104.01	461.46	265.59	-264.70	1.46	-1.40	-11.41	
8,140.86	1.81	339.02	8,117.57	461.89	265.43	-264.54	1.39	-1.33	-12.82	
8,154.43	1.64	337.17	8,131.14	462.27	265.28	-264.39	1.32	-1.25	-13.63	
8,168.00	1.49	335.41	8,144.70	462.61	265.13	-264.24	1.16	-1.11	-12.97	
8,181.43	1.38	334.91	8,158.13	462.91	264.99	-264.10	0.82	-0.82	-3.72	
8,194.86	1.28	334.81	8,171.56	463.19	264.86	-263.97	0.74	-0.74	-0.74	
8,208.29	1.20	334.97	8,184.98	463.46	264.73	-263.84	0.60	-0.60	1.19	
8,221.71	1.13	335.24	8,198.40	463.70	264.62	-263.73	0.52	-0.52	2.01	
8,226.31	1.13	335.99	8,203.00	463.79	264.58	-263.69	0.33	0.07	16.36	
3rd Bone Spring LM										
8,235.14	1.14	337.42	8,211.83	463.95	264.51	-263.62	0.33	0.08	16.17	
8,248.57	1.19	339.33	8,225.25	464.20	264.41	-263.52	0.47	0.37	14.22	
8,262.00	1.24	341.08	8,238.68	464.47	264.32	-263.42	0.46	0.37	13.03	
8,275.57	1.14	339.92	8,252.25	464.74	264.22	-263.33	0.76	-0.74	-8.55	
8,289.14	1.03	338.41	8,265.82	464.98	264.13	-263.24	0.84	-0.81	-11.13	
8,302.71	0.93	336.65	8,279.38	465.19	264.04	-263.15	0.77	-0.74	-12.97	
8,316.29	0.75	330.46	8,292.96	465.37	263.95	-263.06	1.48	-1.33	-45.58	
8,329.86	0.66	324.85	8,306.53	465.51	263.87	-262.97	0.84	-0.66	-41.34	
8,343.43	0.58	317.57	8,320.10	465.62	263.77	-262.88	0.83	-0.59	-53.65	
8,357.00	0.51	308.12	8,333.67	465.71	263.68	-262.79	0.84	-0.52	-69.64	
8,372.00	0.52	285.19	8,348.67	465.77	263.56	-262.67	1.37	0.07	-152.87	
8,387.00	0.60	266.06	8,363.67	465.78	263.42	-262.52	1.35	0.53	-127.53	
8,402.00	0.74	252.71	8,378.67	465.75	263.25	-262.35	1.39	0.93	-89.00	
8,415.40	0.95	243.18	8,392.07	465.67	263.07	-262.17	1.88	1.57	-71.12	
8,428.80	1.18	237.26	8,405.46	465.55	262.85	-261.96	1.90	1.72	-44.18	
8,442.20	1.42	233.31	8,418.86	465.37	262.60	-261.71	1.91	1.79	-29.48	
8,455.60	1.67	230.50	8,432.26	465.15	262.32	-261.42	1.95	1.87	-20.97	
8,469.00	1.91	228.42	8,445.65	464.88	262.00	-261.11	1.86	1.79	-15.52	
8,482.43	2.01	231.26	8,459.07	464.58	261.65	-260.76	1.04	0.74	21.15	
8,485.00	2.18	234.17	8,461.64	464.53	261.57	-260.68	7.79	6.61	113.27	
KOP: 8485.00' MD, -260.68' VS, 8461.64' TVD										
8,495.86	2.94	242.61	8,472.49	464.28	261.16	-260.27	7.79	7.00	77.71	
8,509.29	4.33	253.25	8,485.89	463.97	260.37	-259.48	11.46	10.35	79.23	
8,522.71	5.92	258.84	8,499.26	463.69	259.20	-258.31	12.40	11.85	41.65	
8,536.14	7.29	262.43	8,512.60	463.45	257.68	-256.79	10.65	10.20	26.73	
8,549.57	8.56	265.20	8,525.90	463.25	255.84	-254.95	9.87	9.46	20.63	
8,563.00	10.05	267.43	8,539.15	463.11	253.67	-252.78	11.41	11.09	16.60	
8,576.57	11.35	271.37	8,552.49	463.09	251.15	-250.26	10.99	9.58	29.03	
8,590.14	12.81	273.17	8,565.76	463.21	248.32	-247.43	11.11	10.76	13.26	
8,603.71	14.16	274.27	8,578.95	463.42	245.16	-244.27	10.13	9.95	8.11	
8,617.29	15.30	276.59	8,592.08	463.74	241.72	-240.83	9.45	8.39	17.08	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,630.86	16.36	277.60	8,605.14	464.20	238.05	-237.16	8.07	7.81	7.44
8,644.43	17.33	278.52	8,618.13	464.75	234.16	-233.26	7.41	7.15	6.78
8,658.00	18.49	279.02	8,631.04	465.39	230.03	-229.14	8.62	8.55	3.68
8,671.43	19.44	279.26	8,643.74	466.09	225.72	-224.83	7.10	7.07	1.79
8,684.86	20.16	280.40	8,656.38	466.86	221.24	-220.34	6.08	5.36	8.49
8,698.29	21.01	279.08	8,668.95	467.66	216.59	-215.69	7.21	6.33	-9.83
8,711.71	22.04	278.51	8,681.43	468.41	211.72	-210.82	7.83	7.68	-4.25
8,725.14	22.92	278.07	8,693.84	469.15	206.64	-205.74	6.67	6.55	-3.28
8,738.57	23.65	276.97	8,706.18	469.85	201.38	-200.47	6.33	5.44	-8.19
8,740.79	23.81	276.83	8,708.21	469.95	200.49	-199.59	7.69	7.28	-6.15
100FEL: 8740.79' MD, -199.59' VS, 8708.21' TVD									
8,752.00	24.63	276.17	8,718.43	470.47	195.92	-195.02	7.69	7.30	-5.92
8,765.57	25.65	276.14	8,730.72	471.09	190.19	-189.28	7.52	7.52	-0.22
8,779.14	26.63	276.44	8,742.90	471.75	184.25	-183.34	7.29	7.22	2.21
8,792.71	27.65	276.42	8,754.98	472.44	178.10	-177.19	7.52	7.52	-0.15
8,806.29	28.67	276.49	8,766.95	473.16	171.73	-170.82	7.51	7.51	0.52
8,819.86	29.71	276.68	8,778.79	473.92	165.15	-164.24	7.69	7.66	1.40
8,833.43	30.82	276.69	8,790.51	474.72	158.36	-157.45	8.18	8.18	0.07
8,834.00	30.87	276.68	8,791.00	474.75	158.07	-157.16	8.75	8.69	-1.90
3rd Bone Spring SD									
8,847.00	32.00	276.44	8,802.10	475.53	151.33	-150.42	8.75	8.70	-1.84
8,860.43	33.19	276.12	8,813.41	476.32	144.14	-143.23	8.95	8.86	-2.38
8,873.86	34.37	275.52	8,824.57	477.07	136.72	-135.80	9.13	8.79	-4.47
8,887.29	35.53	275.26	8,835.58	477.80	129.06	-128.14	8.71	8.64	-1.94
8,900.71	36.75	274.88	8,846.42	478.49	121.17	-120.25	9.24	9.09	-2.83
8,914.14	38.01	274.51	8,857.09	479.16	113.05	-112.13	9.53	9.38	-2.76
8,927.57	39.27	274.15	8,867.58	479.79	104.68	-103.76	9.53	9.38	-2.68
8,941.00	40.62	273.76	8,877.88	480.39	96.08	-95.16	10.22	10.05	-2.90
8,954.57	41.96	273.40	8,888.07	480.95	87.15	-86.22	10.03	9.87	-2.65
8,968.14	43.38	273.06	8,898.05	481.46	77.96	-77.04	10.60	10.46	-2.51
8,981.71	44.71	272.20	8,907.80	481.90	68.54	-67.61	10.75	9.80	-6.34
8,995.29	46.04	271.32	8,917.34	482.19	58.88	-57.95	10.83	9.79	-6.48
8,997.66	46.27	271.25	8,918.99	482.23	57.17	-56.24	10.13	9.87	-3.15
01_FTP(BD-131H)									
9,008.86	47.38	270.90	8,926.65	482.38	49.00	-48.08	10.13	9.88	-3.08
9,022.43	48.71	270.51	8,935.72	482.51	38.91	-37.99	10.03	9.80	-2.87
9,036.00	50.08	269.74	8,944.55	482.53	28.61	-27.68	10.98	10.10	-5.67
9,049.43	51.49	269.18	8,953.04	482.43	18.21	-17.28	10.98	10.50	-4.17
9,062.86	52.91	268.67	8,961.27	482.23	7.60	-6.67	10.99	10.57	-3.80
9,076.29	54.26	268.00	8,969.25	481.92	-3.21	4.13	10.82	10.05	-4.99
9,089.71	55.70	267.65	8,976.95	481.50	-14.19	15.11	10.94	10.73	-2.61
9,103.14	57.14	267.64	8,984.37	481.04	-25.37	26.29	10.72	10.72	-0.07
9,116.57	58.57	267.70	8,991.52	480.58	-36.73	37.65	10.65	10.65	0.45
9,129.52	59.99	267.60	8,998.14	480.12	-47.85	48.78	10.96	10.95	-0.74



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
02_T02-0VS(BD-131H)									
9,130.00	60.04	267.60	8,998.38	480.10	-48.27	49.19	10.96	10.95	-0.73
9,143.43	61.48	267.65	9,004.93	479.62	-59.97	60.90	10.73	10.72	0.37
9,156.86	62.81	268.17	9,011.21	479.19	-71.84	72.76	10.48	9.90	3.87
9,170.29	64.16	268.62	9,017.21	478.85	-83.85	84.77	10.49	10.05	3.35
9,183.71	65.56	268.96	9,022.91	478.59	-96.00	96.92	10.68	10.43	2.53
9,197.14	66.87	269.47	9,028.32	478.42	-108.29	109.20	10.35	9.75	3.80
9,210.57	68.17	269.90	9,033.46	478.36	-120.70	121.61	10.12	9.68	3.20
9,224.00	69.60	269.77	9,038.30	478.32	-133.22	134.14	10.69	10.65	-0.97
9,237.43	71.11	269.28	9,042.81	478.22	-145.87	146.79	11.76	11.24	-3.65
9,250.86	72.66	269.58	9,046.99	478.09	-158.63	159.55	11.73	11.54	2.23
9,264.29	74.25	269.53	9,050.81	477.99	-171.51	172.42	11.84	11.84	-0.37
9,277.71	75.84	269.65	9,054.27	477.90	-184.47	185.39	11.88	11.85	0.89
9,291.14	77.26	269.91	9,057.40	477.85	-197.53	198.45	10.74	10.57	1.94
9,304.57	78.60	270.10	9,060.21	477.85	-210.67	211.58	10.07	9.98	1.41
9,318.00	80.13	270.12	9,062.68	477.87	-223.87	224.78	11.39	11.39	0.15
9,331.57	81.60	270.48	9,064.84	477.94	-237.26	238.18	11.14	10.83	2.65
9,345.14	82.98	271.04	9,066.66	478.12	-250.71	251.63	10.96	10.17	4.13
9,358.71	84.29	271.61	9,068.16	478.43	-264.19	265.11	10.52	9.65	4.20
9,372.29	85.37	272.54	9,069.39	478.92	-277.71	278.63	10.48	7.95	6.85
9,385.86	86.27	273.52	9,070.38	479.64	-291.22	292.14	9.79	6.63	7.22
9,399.43	87.35	274.24	9,071.13	480.56	-304.74	305.66	9.56	7.96	5.31
9,413.00	88.62	274.65	9,071.61	481.61	-318.26	319.18	9.83	9.36	3.02
9,426.43	88.88	274.60	9,071.90	482.69	-331.64	332.57	1.97	1.94	-0.37
9,439.86	89.01	274.50	9,072.15	483.75	-345.03	345.96	1.22	0.97	-0.74
9,453.29	89.15	274.39	9,072.36	484.79	-358.42	359.35	1.33	1.04	-0.82
9,466.71	89.29	274.28	9,072.55	485.81	-371.80	372.73	1.33	1.04	-0.82
9,480.14	89.42	274.18	9,072.70	486.80	-385.19	386.12	1.22	0.97	-0.74
9,493.57	89.52	274.08	9,072.82	487.77	-398.58	399.52	1.05	0.74	-0.74
9,500.81	90.00	273.60	9,072.85	488.25	-405.80	406.74	9.42	6.70	-6.63
02_LP(BD-131H)									
9,507.00	90.42	273.19	9,072.83	488.62	-411.99	412.92	9.42	6.70	-6.63
9,520.57	91.16	272.07	9,072.64	489.24	-425.54	426.48	9.89	5.45	-8.25
9,526.00	91.28	271.66	9,072.53	489.42	-430.97	431.90	7.92	2.29	-7.59
EOC: 9526.00' MD, 431.90' VS, 9072.53' TVD									
9,534.14	91.47	271.04	9,072.33	489.61	-439.10	440.04	7.92	2.28	-7.59
9,547.71	91.46	270.96	9,071.98	489.85	-452.66	453.60	0.59	-0.07	-0.59
9,561.29	91.43	270.89	9,071.64	490.06	-466.24	467.18	0.56	-0.22	-0.52
9,574.86	91.40	270.81	9,071.31	490.27	-479.80	480.74	0.63	-0.22	-0.59
9,588.43	91.37	270.73	9,070.98	490.45	-493.37	494.31	0.63	-0.22	-0.59
9,602.00	91.34	270.66	9,070.66	490.61	-506.93	507.87	0.56	-0.22	-0.52
9,615.43	91.32	270.59	9,070.35	490.76	-520.36	521.30	0.54	-0.15	-0.52
9,628.86	91.32	270.52	9,070.04	490.89	-533.78	534.73	0.52	0.00	-0.52
9,642.29	91.31	270.45	9,069.73	491.00	-547.21	548.15	0.53	-0.07	-0.52



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,655.71	91.30	270.39	9,069.42	491.10	-560.63	561.57	0.45	-0.07	-0.45
9,669.14	91.29	270.33	9,069.12	491.19	-574.05	574.99	0.45	-0.07	-0.45
9,682.57	91.27	270.28	9,068.82	491.26	-587.48	588.42	0.40	-0.15	-0.37
9,696.00	92.23	269.66	9,068.41	491.25	-600.90	601.84	8.51	7.15	-4.62
9,709.43	93.41	269.02	9,067.75	491.10	-614.31	615.26	9.99	8.79	-4.77
9,722.86	93.81	268.79	9,066.90	490.84	-627.72	628.66	3.43	2.98	-1.71
9,736.29	93.73	268.77	9,066.02	490.55	-641.11	642.05	0.61	-0.60	-0.15
9,749.71	93.64	268.76	9,065.16	490.27	-654.50	655.44	0.67	-0.67	-0.07
9,763.14	93.54	268.74	9,064.32	489.97	-667.90	668.84	0.76	-0.74	-0.15
9,776.57	93.44	268.73	9,063.50	489.68	-681.31	682.24	0.75	-0.74	-0.07
9,790.00	93.35	268.70	9,062.70	489.38	-694.71	695.65	0.71	-0.67	-0.22
9,803.57	93.27	268.65	9,061.92	489.06	-708.25	709.19	0.69	-0.59	-0.37
9,817.14	93.21	268.59	9,061.15	488.74	-721.80	722.73	0.62	-0.44	-0.44
9,830.71	93.15	268.52	9,060.40	488.40	-735.34	736.28	0.68	-0.44	-0.52
9,844.29	93.09	268.45	9,059.66	488.04	-748.90	749.83	0.68	-0.44	-0.52
9,857.86	93.06	268.37	9,058.93	487.66	-762.44	763.38	0.63	-0.22	-0.59
9,871.43	93.03	268.29	9,058.21	487.27	-775.99	776.92	0.63	-0.22	-0.59
9,885.00	93.03	268.20	9,057.49	486.85	-789.53	790.46	0.66	0.00	-0.66
9,898.43	93.06	268.11	9,056.78	486.42	-802.94	803.87	0.71	0.22	-0.67
9,911.86	93.10	268.02	9,056.06	485.97	-816.34	817.27	0.73	0.30	-0.67
9,925.29	93.15	267.92	9,055.33	485.49	-829.74	830.67	0.83	0.37	-0.74
9,938.71	93.20	267.84	9,054.58	485.00	-843.13	844.06	0.70	0.37	-0.60
9,952.14	93.23	267.76	9,053.83	484.48	-856.53	857.46	0.64	0.22	-0.60
9,965.57	93.24	267.70	9,053.07	483.95	-869.93	870.85	0.45	0.07	-0.45
9,979.00	93.20	267.66	9,052.32	483.41	-883.32	884.25	0.42	-0.30	-0.30
9,992.57	93.08	267.66	9,051.58	482.85	-896.86	897.79	0.88	-0.88	0.00
10,006.14	92.93	267.67	9,050.86	482.30	-910.40	911.33	1.11	-1.11	0.07
10,019.71	92.75	267.70	9,050.19	481.75	-923.95	924.87	1.34	-1.33	0.22
10,033.29	92.57	267.73	9,049.56	481.21	-937.50	938.42	1.34	-1.33	0.22
10,046.86	92.40	267.74	9,048.97	480.68	-951.05	951.97	1.25	-1.25	0.07
10,060.43	92.28	267.74	9,048.42	480.14	-964.59	965.51	0.88	-0.88	0.00
10,074.00	92.32	268.51	9,047.87	479.70	-978.15	979.07	5.68	0.29	5.67
10,087.43	91.89	269.45	9,047.38	479.46	-991.57	992.48	7.69	-3.20	7.00
10,100.86	91.79	269.39	9,046.95	479.32	-1,004.99	1,005.91	0.87	-0.74	-0.45
10,114.29	91.92	269.20	9,046.52	479.16	-1,018.41	1,019.33	1.71	0.97	-1.41
10,127.71	92.08	268.99	9,046.05	478.95	-1,031.82	1,032.74	1.97	1.19	-1.56
10,141.14	92.24	268.78	9,045.54	478.69	-1,045.24	1,046.15	1.96	1.19	-1.56
10,154.57	92.40	268.59	9,045.00	478.38	-1,058.65	1,059.57	1.85	1.19	-1.41
10,168.00	92.53	268.43	9,044.42	478.03	-1,072.07	1,072.98	1.53	0.97	-1.19
10,181.43	92.61	268.33	9,043.82	477.65	-1,085.48	1,086.39	0.95	0.60	-0.74
10,194.86	92.64	268.21	9,043.20	477.25	-1,098.89	1,099.80	0.92	0.22	-0.89
10,208.29	92.66	268.13	9,042.58	476.82	-1,112.30	1,113.21	0.61	0.15	-0.60
10,221.71	92.66	268.06	9,041.96	476.37	-1,125.69	1,126.61	0.52	0.00	-0.52



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,235.14	92.68	268.01	9,041.33	475.91	-1,139.10	1,140.01	0.40	0.15	-0.37	
10,248.57	92.70	267.95	9,040.70	475.44	-1,152.51	1,153.42	0.47	0.15	-0.45	
10,262.00	91.92	268.82	9,040.16	475.06	-1,165.92	1,166.83	8.70	-5.81	6.48	
10,275.57	91.80	268.98	9,039.72	474.80	-1,179.48	1,180.39	1.47	-0.88	1.18	
10,289.14	91.90	268.91	9,039.28	474.55	-1,193.04	1,193.95	0.90	0.74	-0.52	
10,302.71	92.01	268.84	9,038.82	474.28	-1,206.60	1,207.51	0.96	0.81	-0.52	
10,316.29	92.12	268.77	9,038.33	474.00	-1,220.17	1,221.08	0.96	0.81	-0.52	
10,329.86	92.24	268.71	9,037.81	473.70	-1,233.73	1,234.63	0.99	0.88	-0.44	
10,343.43	92.34	268.66	9,037.27	473.39	-1,247.28	1,248.19	0.82	0.74	-0.37	
10,357.00	92.44	268.62	9,036.71	473.07	-1,260.84	1,261.74	0.79	0.74	-0.29	
10,370.43	92.51	268.61	9,036.13	472.75	-1,274.25	1,275.16	0.53	0.52	-0.07	
10,383.86	92.56	268.61	9,035.53	472.42	-1,287.66	1,288.57	0.37	0.37	0.00	
10,397.29	92.61	268.62	9,034.93	472.10	-1,301.08	1,301.98	0.38	0.37	0.07	
10,410.71	92.65	268.63	9,034.31	471.77	-1,314.48	1,315.38	0.31	0.30	0.07	
10,424.14	92.71	268.65	9,033.68	471.46	-1,327.89	1,328.79	0.47	0.45	0.15	
10,437.57	92.77	268.67	9,033.04	471.14	-1,341.30	1,342.20	0.47	0.45	0.15	
10,451.00	92.86	268.68	9,032.38	470.83	-1,354.71	1,355.61	0.67	0.67	0.07	
10,464.57	92.99	268.69	9,031.69	470.52	-1,368.26	1,369.16	0.96	0.96	0.07	
10,478.14	93.14	268.70	9,030.96	470.21	-1,381.81	1,382.71	1.11	1.11	0.07	
10,491.71	93.30	268.70	9,030.20	469.90	-1,395.35	1,396.25	1.18	1.18	0.00	
10,505.29	93.46	268.69	9,029.40	469.60	-1,408.90	1,409.80	1.18	1.18	-0.07	
10,518.86	93.60	268.66	9,028.56	469.28	-1,422.45	1,423.34	1.06	1.03	-0.22	
10,532.43	93.71	268.62	9,027.70	468.96	-1,435.98	1,436.88	0.86	0.81	-0.29	
10,546.00	93.77	268.54	9,026.81	468.63	-1,449.52	1,450.42	0.74	0.44	-0.59	
10,559.43	93.74	268.42	9,025.94	468.27	-1,462.92	1,463.81	0.92	-0.22	-0.89	
10,572.86	93.67	268.28	9,025.07	467.88	-1,476.31	1,477.21	1.16	-0.52	-1.04	
10,586.29	93.58	268.12	9,024.22	467.46	-1,489.71	1,490.60	1.36	-0.67	-1.19	
10,599.71	93.49	267.97	9,023.39	467.01	-1,503.10	1,503.99	1.30	-0.67	-1.12	
10,613.14	93.41	267.82	9,022.58	466.51	-1,516.49	1,517.39	1.26	-0.60	-1.12	
10,626.57	93.37	267.70	9,021.79	465.99	-1,529.89	1,530.78	0.94	-0.30	-0.89	
10,640.00	92.32	267.25	9,021.12	465.40	-1,543.29	1,544.18	8.50	-7.82	-3.35	
10,653.43	91.34	266.87	9,020.69	464.71	-1,556.70	1,557.58	7.83	-7.30	-2.83	
10,666.86	91.50	266.85	9,020.36	463.98	-1,570.10	1,570.99	1.20	1.19	-0.15	
10,680.29	91.69	266.86	9,019.99	463.24	-1,583.51	1,584.39	1.42	1.41	0.07	
10,693.71	91.91	266.87	9,019.56	462.51	-1,596.90	1,597.78	1.64	1.64	0.07	
10,707.14	92.14	266.90	9,019.09	461.78	-1,610.30	1,611.18	1.73	1.71	0.22	
10,720.57	92.37	266.92	9,018.56	461.05	-1,623.70	1,624.58	1.72	1.71	0.15	
10,734.00	92.58	266.94	9,017.98	460.33	-1,637.10	1,637.98	1.57	1.56	0.15	
10,747.57	92.77	266.96	9,017.35	459.61	-1,650.63	1,651.51	1.41	1.40	0.15	
10,761.14	92.94	266.96	9,016.67	458.89	-1,664.17	1,665.05	1.25	1.25	0.00	
10,774.71	93.09	266.97	9,015.96	458.18	-1,677.70	1,678.58	1.11	1.11	0.07	
10,788.29	93.22	266.97	9,015.21	457.46	-1,691.24	1,692.12	0.96	0.96	0.00	
10,801.86	93.34	266.98	9,014.43	456.74	-1,704.77	1,705.64	0.89	0.88	0.07	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,815.43	93.44	267.00	9,013.63	456.03	-1,718.30	1,719.17	0.75	0.74	0.15	
10,829.00	93.50	267.03	9,012.81	455.33	-1,731.82	1,732.70	0.49	0.44	0.22	
10,842.43	93.53	267.08	9,011.99	454.64	-1,745.21	1,746.08	0.43	0.22	0.37	
10,855.86	93.53	267.14	9,011.16	453.96	-1,758.60	1,759.47	0.45	0.00	0.45	
10,869.29	93.52	267.20	9,010.34	453.30	-1,771.99	1,772.85	0.45	-0.07	0.45	
10,882.71	93.51	267.26	9,009.51	452.65	-1,785.37	1,786.23	0.45	-0.07	0.45	
10,896.14	93.52	267.31	9,008.69	452.02	-1,798.76	1,799.62	0.38	0.07	0.37	
10,909.57	93.14	266.83	9,007.91	451.33	-1,812.15	1,813.01	4.55	-2.83	-3.57	
10,923.00	92.73	266.29	9,007.22	450.53	-1,825.53	1,826.40	5.04	-3.05	-4.02	
10,936.57	92.85	266.29	9,006.56	449.65	-1,839.06	1,839.92	0.88	0.88	0.00	
10,950.14	92.99	266.28	9,005.87	448.77	-1,852.58	1,853.44	1.03	1.03	-0.07	
10,963.71	93.15	266.27	9,005.14	447.89	-1,866.11	1,866.96	1.18	1.18	-0.07	
10,977.29	93.31	266.25	9,004.38	447.01	-1,879.64	1,880.49	1.19	1.18	-0.15	
10,990.86	93.45	266.23	9,003.58	446.12	-1,893.15	1,894.01	1.04	1.03	-0.15	
11,004.43	93.58	266.20	9,002.75	445.23	-1,906.67	1,907.52	0.98	0.96	-0.22	
11,018.00	93.65	266.16	9,001.89	444.32	-1,920.18	1,921.03	0.59	0.52	-0.29	
11,031.43	93.66	266.13	9,001.03	443.42	-1,933.55	1,934.40	0.24	0.07	-0.22	
11,044.86	93.63	266.08	9,000.18	442.51	-1,946.92	1,947.77	0.43	-0.22	-0.37	
11,058.29	93.58	266.04	8,999.34	441.59	-1,960.30	1,961.14	0.48	-0.37	-0.30	
11,071.71	93.53	265.99	8,998.50	440.66	-1,973.66	1,974.50	0.53	-0.37	-0.37	
11,085.14	93.49	265.93	8,997.68	439.72	-1,987.03	1,987.87	0.54	-0.30	-0.45	
11,098.57	93.06	265.77	8,996.91	438.75	-2,000.40	2,001.24	3.42	-3.20	-1.19	
11,112.00	92.20	265.37	8,996.30	437.71	-2,013.78	2,014.61	7.06	-6.40	-2.98	
11,125.43	91.17	265.63	8,995.90	436.66	-2,027.16	2,028.00	7.91	-7.67	1.94	
11,138.86	90.94	265.57	8,995.66	435.63	-2,040.55	2,041.38	1.77	-1.71	-0.45	
11,152.29	91.13	265.46	8,995.41	434.58	-2,053.94	2,054.77	1.63	1.41	-0.82	
11,165.71	91.34	265.35	8,995.12	433.50	-2,067.31	2,068.14	1.77	1.56	-0.82	
11,179.14	91.54	265.22	8,994.79	432.40	-2,080.69	2,081.52	1.78	1.49	-0.97	
11,192.57	91.73	265.08	8,994.40	431.26	-2,094.07	2,094.89	1.76	1.41	-1.04	
11,206.00	91.88	264.92	8,993.98	430.09	-2,107.44	2,108.26	1.63	1.12	-1.19	
11,219.57	91.95	264.74	8,993.53	428.87	-2,120.95	2,121.76	1.42	0.52	-1.33	
11,233.14	91.98	264.54	8,993.06	427.60	-2,134.45	2,135.27	1.49	0.22	-1.47	
11,246.71	91.99	264.35	8,992.59	426.29	-2,147.95	2,148.76	1.40	0.07	-1.40	
11,260.29	91.99	264.16	8,992.12	424.93	-2,161.45	2,162.26	1.40	0.00	-1.40	
11,273.86	91.99	263.99	8,991.65	423.53	-2,174.94	2,175.75	1.25	0.00	-1.25	
11,287.43	91.55	263.80	8,991.23	422.09	-2,188.43	2,189.23	3.53	-3.24	-1.40	
11,301.00	90.61	263.43	8,990.97	420.58	-2,201.91	2,202.71	7.44	-6.93	-2.73	
11,314.43	89.90	262.98	8,990.91	418.99	-2,215.24	2,216.04	6.26	-5.29	-3.35	
11,327.86	90.03	262.96	8,990.92	417.35	-2,228.57	2,229.37	0.98	0.97	-0.15	
11,341.29	90.19	262.95	8,990.90	415.70	-2,241.90	2,242.70	1.19	1.19	-0.07	
11,354.71	90.37	262.96	8,990.83	414.06	-2,255.22	2,256.01	1.34	1.34	0.07	
11,368.14	90.56	262.97	8,990.72	412.41	-2,268.55	2,269.34	1.42	1.41	0.07	
11,381.57	90.78	262.99	8,990.56	410.77	-2,281.88	2,282.66	1.64	1.64	0.15	
11,395.00	91.01	263.02	8,990.35	409.13	-2,295.21	2,295.99	1.73	1.71	0.22	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,408.57	91.27	263.04	8,990.08	407.49	-2,308.67	2,309.45	1.92	1.92	0.15
11,422.14	91.54	263.07	8,989.75	405.85	-2,322.14	2,322.91	2.00	1.99	0.22
11,435.71	91.81	263.10	8,989.36	404.22	-2,335.60	2,336.38	2.00	1.99	0.22
11,449.29	92.07	263.13	8,988.90	402.59	-2,349.08	2,349.85	1.93	1.91	0.22
11,462.86	92.29	263.16	8,988.38	400.97	-2,362.54	2,363.31	1.64	1.62	0.22
11,476.43	92.47	263.19	8,987.82	399.36	-2,376.00	2,376.77	1.34	1.33	0.22
11,490.00	92.58	263.23	8,987.22	397.76	-2,389.47	2,390.23	0.86	0.81	0.29
11,503.43	92.57	263.26	8,986.61	396.18	-2,402.79	2,403.55	0.24	-0.07	0.22
11,516.86	92.50	263.29	8,986.02	394.61	-2,416.11	2,416.87	0.57	-0.52	0.22
11,530.29	92.38	263.31	8,985.45	393.04	-2,429.44	2,430.19	0.91	-0.89	0.15
11,543.71	92.26	263.33	8,984.91	391.48	-2,442.76	2,443.51	0.91	-0.89	0.15
11,557.14	92.14	263.33	8,984.39	389.92	-2,456.09	2,456.83	0.89	-0.89	0.00
11,570.57	91.85	263.88	8,983.92	388.43	-2,469.43	2,470.17	4.63	-2.16	4.10
11,584.00	91.34	264.67	8,983.55	387.09	-2,482.78	2,483.52	7.00	-3.80	5.88
11,597.57	90.82	265.45	8,983.29	385.92	-2,496.30	2,497.04	6.91	-3.83	5.75
11,611.14	90.76	265.65	8,983.11	384.87	-2,509.83	2,510.56	1.54	-0.44	1.47
11,624.71	90.83	265.51	8,982.92	383.82	-2,523.36	2,524.09	1.15	0.52	-1.03
11,638.29	90.89	265.36	8,982.71	382.74	-2,536.89	2,537.62	1.19	0.44	-1.10
11,651.86	90.95	265.21	8,982.50	381.63	-2,550.41	2,551.14	1.19	0.44	-1.11
11,665.43	90.97	265.09	8,982.27	380.48	-2,563.93	2,564.66	0.90	0.15	-0.88
11,679.00	90.95	265.00	8,982.04	379.31	-2,577.45	2,578.17	0.68	-0.15	-0.66
11,692.43	90.84	264.98	8,981.83	378.13	-2,590.83	2,591.55	0.83	-0.82	-0.15
11,705.86	90.69	265.00	8,981.65	376.96	-2,604.21	2,604.92	1.13	-1.12	0.15
11,719.29	90.51	265.03	8,981.51	375.79	-2,617.58	2,618.30	1.36	-1.34	0.22
11,732.71	90.32	265.08	8,981.41	374.64	-2,630.95	2,631.67	1.46	-1.42	0.37
11,746.14	90.15	265.11	8,981.36	373.49	-2,644.33	2,645.05	1.29	-1.27	0.22
11,759.57	89.96	265.47	8,981.35	372.39	-2,657.72	2,658.43	3.03	-1.41	2.68
11,773.00	89.59	266.13	8,981.40	371.40	-2,671.11	2,671.82	5.63	-2.76	4.91
11,786.57	89.15	266.88	8,981.55	370.58	-2,684.66	2,685.36	6.41	-3.24	5.53
11,800.14	89.04	267.77	8,981.76	369.94	-2,698.21	2,698.92	6.61	-0.81	6.56
11,813.71	89.03	267.70	8,981.99	369.41	-2,711.77	2,712.47	0.52	-0.07	-0.52
11,827.29	89.02	267.54	8,982.22	368.84	-2,725.33	2,726.04	1.18	-0.07	-1.18
11,840.86	89.02	267.37	8,982.45	368.24	-2,738.89	2,739.59	1.25	0.00	-1.25
11,854.43	89.00	267.23	8,982.69	367.60	-2,752.44	2,753.14	1.04	-0.15	-1.03
11,868.00	88.97	267.13	8,982.93	366.93	-2,765.99	2,766.69	0.77	-0.22	-0.74
11,881.43	88.91	267.12	8,983.18	366.26	-2,779.40	2,780.10	0.45	-0.45	-0.07
11,894.86	88.83	267.17	8,983.44	365.59	-2,792.81	2,793.51	0.70	-0.60	0.37
11,908.29	88.74	267.24	8,983.73	364.94	-2,806.23	2,806.92	0.85	-0.67	0.52
11,921.71	88.64	267.32	8,984.03	364.30	-2,819.63	2,820.32	0.95	-0.75	0.60
11,935.14	88.54	267.40	8,984.36	363.68	-2,833.04	2,833.73	0.95	-0.74	0.60
11,948.57	88.45	267.46	8,984.72	363.08	-2,846.45	2,847.14	0.81	-0.67	0.45
11,962.00	88.26	268.07	8,985.10	362.56	-2,859.86	2,860.56	4.76	-1.41	4.54
11,975.43	88.13	268.87	8,985.53	362.20	-2,873.28	2,873.97	6.03	-0.97	5.96



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,988.86	88.13	269.69	8,985.96	362.03	-2,886.70	2,887.39	6.10	0.00	6.11
12,000.80	88.13	270.13	8,986.35	362.01	-2,898.63	2,899.32	3.65	0.00	3.65
03_T03-2900VS(BD-131H)									
12,002.29	88.13	270.18	8,986.40	362.01	-2,900.13	2,900.82	3.65	0.00	3.65
12,015.71	88.00	270.00	8,986.86	362.03	-2,913.54	2,914.23	1.65	-0.97	-1.34
12,029.14	87.86	269.81	8,987.34	362.01	-2,926.96	2,927.65	1.76	-1.04	-1.41
12,042.57	87.74	269.64	8,987.86	361.95	-2,940.38	2,941.07	1.55	-0.89	-1.27
12,056.00	87.65	269.53	8,988.40	361.85	-2,953.80	2,954.49	1.06	-0.67	-0.82
12,069.57	87.62	269.55	8,988.96	361.74	-2,967.36	2,968.05	0.27	-0.22	0.15
12,083.14	87.62	269.63	8,989.52	361.64	-2,980.92	2,981.60	0.59	0.00	0.59
12,096.71	87.65	269.76	8,990.08	361.57	-2,994.47	2,995.16	0.98	0.22	0.96
12,110.29	87.68	269.92	8,990.63	361.53	-3,008.04	3,008.73	1.20	0.22	1.18
12,123.86	87.73	270.07	8,991.18	361.53	-3,021.60	3,022.29	1.16	0.37	1.11
12,137.43	87.76	270.21	8,991.71	361.57	-3,035.16	3,035.85	1.05	0.22	1.03
12,151.00	87.93	270.64	8,992.22	361.67	-3,048.72	3,049.41	3.41	1.25	3.17
12,164.43	88.22	271.38	8,992.67	361.90	-3,062.14	3,062.83	5.92	2.16	5.51
12,177.86	88.50	272.13	8,993.06	362.31	-3,075.56	3,076.25	5.96	2.08	5.58
12,191.29	88.87	272.90	8,993.36	362.90	-3,088.97	3,089.66	6.36	2.76	5.73
12,204.71	88.85	272.96	8,993.63	363.59	-3,102.37	3,103.07	0.47	-0.15	0.45
12,218.14	88.78	272.94	8,993.91	364.28	-3,115.78	3,116.48	0.54	-0.52	-0.15
12,231.57	88.71	272.91	8,994.20	364.97	-3,129.19	3,129.89	0.57	-0.52	-0.22
12,245.00	88.78	272.87	8,994.50	365.64	-3,142.60	3,143.30	0.60	0.52	-0.30
12,258.57	89.63	272.77	8,994.69	366.31	-3,156.15	3,156.85	6.31	6.26	-0.74
12,272.14	90.61	272.69	8,994.66	366.96	-3,169.71	3,170.41	7.25	7.22	-0.59
12,285.71	91.11	272.65	8,994.45	367.59	-3,183.26	3,183.96	3.70	3.68	-0.29
12,299.29	91.13	272.60	8,994.19	368.21	-3,196.82	3,197.53	0.40	0.15	-0.37
12,312.86	91.15	272.53	8,993.92	368.82	-3,210.38	3,211.08	0.54	0.15	-0.52
12,326.43	91.18	272.47	8,993.64	369.41	-3,223.93	3,224.64	0.49	0.22	-0.44
12,340.00	91.23	272.42	8,993.36	369.99	-3,237.49	3,238.19	0.52	0.37	-0.37
12,353.43	91.30	272.37	8,993.06	370.55	-3,250.90	3,251.61	0.64	0.52	-0.37
12,366.86	91.38	272.33	8,992.75	371.10	-3,264.32	3,265.02	0.67	0.60	-0.30
12,380.29	91.47	272.30	8,992.41	371.64	-3,277.73	3,278.44	0.71	0.67	-0.22
12,393.71	91.56	272.28	8,992.06	372.18	-3,291.14	3,291.85	0.69	0.67	-0.15
12,407.14	91.64	272.25	8,991.68	372.71	-3,304.55	3,305.26	0.64	0.60	-0.22
12,420.57	91.72	272.24	8,991.29	373.23	-3,317.96	3,318.68	0.60	0.60	-0.07
12,434.00	91.79	272.23	8,990.88	373.76	-3,331.38	3,332.09	0.53	0.52	-0.07
12,447.57	91.83	272.23	8,990.45	374.29	-3,344.93	3,345.64	0.29	0.29	0.00
12,461.14	91.86	272.24	8,990.01	374.81	-3,358.48	3,359.20	0.23	0.22	0.07
12,474.71	91.88	272.25	8,989.57	375.35	-3,372.04	3,372.75	0.16	0.15	0.07
12,488.29	91.90	272.26	8,989.12	375.88	-3,385.60	3,386.31	0.16	0.15	0.07
12,501.86	91.92	272.28	8,988.67	376.42	-3,399.15	3,399.87	0.21	0.15	0.15
12,515.43	91.95	272.30	8,988.21	376.96	-3,412.70	3,413.42	0.27	0.22	0.15
12,529.00	91.98	272.32	8,987.75	377.51	-3,426.25	3,426.97	0.27	0.22	0.15
12,542.43	92.03	272.34	8,987.28	378.05	-3,439.66	3,440.38	0.40	0.37	0.15



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,555.86	92.09	272.37	8,986.79	378.60	-3,453.07	3,453.79	0.50	0.45	0.22
12,569.29	92.15	272.39	8,986.30	379.16	-3,466.48	3,467.20	0.47	0.45	0.15
12,582.71	92.23	272.42	8,985.78	379.72	-3,479.88	3,480.60	0.64	0.60	0.22
12,596.14	92.31	272.44	8,985.25	380.29	-3,493.29	3,494.01	0.61	0.60	0.15
12,609.57	92.40	272.47	8,984.70	380.87	-3,506.69	3,507.42	0.71	0.67	0.22
12,623.00	92.51	272.50	8,984.12	381.45	-3,520.10	3,520.83	0.85	0.82	0.22
12,636.57	92.65	272.54	8,983.51	382.04	-3,533.64	3,534.37	1.07	1.03	0.29
12,650.14	92.79	272.58	8,982.87	382.65	-3,547.18	3,547.91	1.07	1.03	0.29
12,663.71	92.94	272.62	8,982.19	383.26	-3,560.72	3,561.45	1.14	1.11	0.29
12,677.29	93.09	272.66	8,981.48	383.89	-3,574.27	3,575.00	1.14	1.10	0.29
12,690.86	93.22	272.69	8,980.73	384.52	-3,587.80	3,588.54	0.98	0.96	0.22
12,704.43	93.32	272.71	8,979.96	385.16	-3,601.34	3,602.07	0.75	0.74	0.15
12,718.00	93.38	272.72	8,979.16	385.80	-3,614.87	3,615.60	0.45	0.44	0.07
12,731.43	93.37	272.70	8,978.37	386.44	-3,628.26	3,629.00	0.17	-0.07	-0.15
12,744.86	93.33	272.67	8,977.59	387.06	-3,641.65	3,642.39	0.37	-0.30	-0.22
12,758.29	93.26	272.63	8,976.82	387.68	-3,655.05	3,655.78	0.60	-0.52	-0.30
12,771.71	93.20	272.59	8,976.06	388.29	-3,668.43	3,669.17	0.54	-0.45	-0.30
12,785.14	93.16	272.56	8,975.31	388.90	-3,681.83	3,682.57	0.37	-0.30	-0.22
12,798.57	92.53	272.36	8,974.65	389.47	-3,695.23	3,695.97	4.92	-4.69	-1.49
12,812.00	91.43	272.05	8,974.18	389.99	-3,708.64	3,709.38	8.51	-8.19	-2.31
12,825.43	90.77	271.87	8,973.93	390.45	-3,722.06	3,722.80	5.09	-4.91	-1.34
12,838.86	90.92	271.90	8,973.73	390.89	-3,735.48	3,736.22	1.14	1.12	0.22
12,852.29	91.09	271.94	8,973.49	391.34	-3,748.90	3,749.65	1.30	1.27	0.30
12,865.71	91.28	271.98	8,973.21	391.80	-3,762.31	3,763.06	1.45	1.42	0.30
12,879.14	91.48	272.03	8,972.89	392.27	-3,775.73	3,776.47	1.54	1.49	0.37
12,892.57	91.67	272.08	8,972.52	392.75	-3,789.14	3,789.89	1.46	1.41	0.37
12,906.00	91.86	272.13	8,972.11	393.24	-3,802.56	3,803.31	1.46	1.41	0.37
12,919.57	92.02	272.18	8,971.65	393.75	-3,816.11	3,816.86	1.24	1.18	0.37
12,933.14	92.16	272.23	8,971.15	394.27	-3,829.66	3,830.41	1.10	1.03	0.37
12,946.71	92.29	272.27	8,970.63	394.81	-3,843.21	3,843.96	1.00	0.96	0.29
12,960.29	92.40	272.31	8,970.07	395.35	-3,856.77	3,857.52	0.86	0.81	0.29
12,973.86	92.49	272.33	8,969.49	395.90	-3,870.32	3,871.07	0.68	0.66	0.15
12,987.43	92.55	272.33	8,968.90	396.45	-3,883.86	3,884.62	0.44	0.44	0.00
13,001.00	92.58	272.30	8,968.29	397.00	-3,897.41	3,898.16	0.31	0.22	-0.22
13,014.43	92.56	272.23	8,967.69	397.53	-3,910.81	3,911.57	0.54	-0.15	-0.52
13,027.86	92.50	272.13	8,967.09	398.04	-3,924.22	3,924.98	0.87	-0.45	-0.74
13,041.29	92.44	272.02	8,966.52	398.52	-3,937.63	3,938.39	0.93	-0.45	-0.82
13,054.71	92.37	271.91	8,965.95	398.98	-3,951.03	3,951.79	0.97	-0.52	-0.82
13,068.14	92.31	271.80	8,965.40	399.42	-3,964.44	3,965.20	0.93	-0.45	-0.82
13,081.57	91.91	271.26	8,964.91	399.77	-3,977.86	3,978.62	5.00	-2.98	-4.02
13,095.00	91.15	270.40	8,964.55	399.97	-3,991.28	3,992.04	8.54	-5.66	-6.40
13,108.57	90.34	269.52	8,964.37	399.96	-4,004.85	4,005.61	8.81	-5.97	-6.48
13,122.14	90.14	269.18	8,964.32	399.81	-4,018.42	4,019.18	2.91	-1.47	-2.51



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,135.71	90.23	269.20	8,964.27	399.61	-4,031.99	4,032.75	0.68	0.66	0.15
13,149.29	90.32	269.23	8,964.21	399.43	-4,045.57	4,046.33	0.70	0.66	0.22
13,162.86	90.42	269.25	8,964.12	399.25	-4,059.13	4,059.89	0.75	0.74	0.15
13,176.43	90.53	269.27	8,964.01	399.07	-4,072.70	4,073.46	0.82	0.81	0.15
13,190.00	90.63	269.26	8,963.87	398.90	-4,086.27	4,087.03	0.74	0.74	-0.07
13,203.57	90.71	269.22	8,963.71	398.72	-4,099.84	4,100.60	0.66	0.59	-0.29
13,217.14	90.79	269.15	8,963.53	398.53	-4,113.41	4,114.16	0.78	0.59	-0.52
13,230.71	90.87	269.07	8,963.34	398.31	-4,126.97	4,127.73	0.83	0.59	-0.59
13,244.29	90.95	268.98	8,963.12	398.08	-4,140.55	4,141.31	0.89	0.59	-0.66
13,257.86	91.03	268.89	8,962.89	397.83	-4,154.12	4,154.87	0.89	0.59	-0.66
13,271.43	91.11	268.79	8,962.63	397.56	-4,167.68	4,168.44	0.94	0.59	-0.74
13,285.00	91.19	268.70	8,962.36	397.26	-4,181.24	4,182.00	0.89	0.59	-0.66
13,298.43	91.29	268.62	8,962.07	396.95	-4,194.67	4,195.42	0.95	0.74	-0.60
13,311.86	91.39	268.55	8,961.76	396.61	-4,208.09	4,208.84	0.91	0.74	-0.52
13,325.29	91.50	268.47	8,961.42	396.27	-4,221.51	4,222.26	1.01	0.82	-0.60
13,338.71	91.61	268.40	8,961.05	395.90	-4,234.92	4,235.67	0.97	0.82	-0.52
13,352.14	91.71	268.33	8,960.67	395.52	-4,248.34	4,249.09	0.91	0.74	-0.52
13,365.57	91.82	268.25	8,960.25	395.12	-4,261.76	4,262.51	1.01	0.82	-0.60
13,379.00	91.93	268.17	8,959.81	394.70	-4,275.17	4,275.92	1.01	0.82	-0.60
13,392.43	92.03	268.08	8,959.35	394.26	-4,288.59	4,289.34	1.00	0.74	-0.67
13,405.86	92.12	267.99	8,958.86	393.80	-4,302.00	4,302.75	0.95	0.67	-0.67
13,419.29	92.21	267.89	8,958.35	393.31	-4,315.41	4,316.16	1.00	0.67	-0.74
13,432.71	92.29	267.81	8,957.83	392.81	-4,328.81	4,329.56	0.84	0.60	-0.60
13,446.14	92.36	267.72	8,957.28	392.29	-4,342.22	4,342.97	0.85	0.52	-0.67
13,459.57	92.41	267.66	8,956.72	391.75	-4,355.63	4,356.37	0.58	0.37	-0.45
13,473.00	92.43	267.61	8,956.16	391.19	-4,369.04	4,369.78	0.40	0.15	-0.37
13,486.57	92.41	267.61	8,955.58	390.63	-4,382.58	4,383.32	0.15	-0.15	0.00
13,500.14	92.37	267.62	8,955.02	390.06	-4,396.13	4,396.87	0.30	-0.29	0.07
13,513.71	92.31	267.65	8,954.46	389.50	-4,409.68	4,410.42	0.49	-0.44	0.22
13,527.29	92.26	267.66	8,953.92	388.95	-4,423.23	4,423.97	0.38	-0.37	0.07
13,540.86	92.22	267.67	8,953.39	388.40	-4,436.78	4,437.52	0.30	-0.29	0.07
13,554.43	92.18	268.37	8,952.87	387.93	-4,450.33	4,451.07	5.16	-0.29	5.16
13,568.00	91.88	269.44	8,952.39	387.67	-4,463.89	4,464.63	8.18	-2.21	7.89
13,581.43	91.52	270.50	8,951.99	387.66	-4,477.32	4,478.05	8.33	-2.68	7.89
13,594.86	91.54	270.80	8,951.63	387.81	-4,490.74	4,491.48	2.24	0.15	2.23
13,608.29	91.65	270.62	8,951.26	387.98	-4,504.16	4,504.90	1.57	0.82	-1.34
13,621.71	91.77	270.43	8,950.86	388.10	-4,517.58	4,518.31	1.67	0.89	-1.42
13,635.14	91.88	270.24	8,950.43	388.18	-4,531.00	4,531.74	1.63	0.82	-1.41
13,648.57	91.98	270.07	8,949.98	388.22	-4,544.42	4,545.16	1.47	0.74	-1.27
13,662.00	92.05	269.96	8,949.51	388.22	-4,557.85	4,558.58	0.97	0.52	-0.82
13,675.57	92.06	269.93	8,949.02	388.21	-4,571.41	4,572.14	0.23	0.07	-0.22
13,689.14	92.04	269.95	8,948.54	388.19	-4,584.97	4,585.70	0.21	-0.15	0.15
13,702.71	91.99	270.00	8,948.06	388.19	-4,598.53	4,599.27	0.52	-0.37	0.37



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,716.29	91.94	270.06	8,947.59	388.20	-4,612.10	4,612.84	0.57	-0.37	0.44
13,729.86	91.88	270.13	8,947.14	388.22	-4,625.66	4,626.40	0.68	-0.44	0.52
13,743.43	91.84	270.18	8,946.70	388.25	-4,639.23	4,639.96	0.47	-0.29	0.37
13,757.00	91.13	270.61	8,946.35	388.35	-4,652.79	4,653.53	6.12	-5.23	3.17
13,770.43	90.13	270.89	8,946.20	388.52	-4,666.22	4,666.96	7.73	-7.45	2.08
13,783.86	89.39	271.08	8,946.26	388.75	-4,679.65	4,680.38	5.69	-5.51	1.41
13,797.29	89.41	271.03	8,946.40	389.00	-4,693.07	4,693.81	0.40	0.15	-0.37
13,810.71	89.45	270.97	8,946.53	389.24	-4,706.49	4,707.23	0.54	0.30	-0.45
13,824.14	89.49	270.90	8,946.66	389.46	-4,719.92	4,720.66	0.60	0.30	-0.52
13,837.57	89.53	270.83	8,946.77	389.66	-4,733.35	4,734.09	0.60	0.30	-0.52
13,851.00	89.57	270.75	8,946.88	389.84	-4,746.78	4,747.52	0.67	0.30	-0.60
13,864.43	89.60	270.67	8,946.97	390.01	-4,760.20	4,760.94	0.64	0.22	-0.60
13,877.86	89.63	270.59	8,947.06	390.16	-4,773.63	4,774.37	0.64	0.22	-0.60
13,891.29	89.65	270.51	8,947.15	390.29	-4,787.06	4,787.80	0.61	0.15	-0.60
13,904.71	89.66	270.42	8,947.23	390.40	-4,800.48	4,801.22	0.67	0.07	-0.67
13,918.14	89.68	270.34	8,947.31	390.48	-4,813.91	4,814.65	0.61	0.15	-0.60
13,931.57	89.69	270.25	8,947.38	390.55	-4,827.34	4,828.08	0.67	0.07	-0.67
13,945.00	89.70	270.16	8,947.45	390.60	-4,840.77	4,841.51	0.67	0.07	-0.67
13,958.57	89.71	270.07	8,947.52	390.63	-4,854.34	4,855.08	0.67	0.07	-0.66
13,972.14	89.71	269.97	8,947.59	390.63	-4,867.91	4,868.65	0.74	0.00	-0.74
13,985.71	89.71	269.88	8,947.66	390.62	-4,881.48	4,882.22	0.66	0.00	-0.66
13,999.29	89.70	269.79	8,947.73	390.58	-4,895.06	4,895.80	0.67	-0.07	-0.66
14,012.86	89.69	269.71	8,947.80	390.52	-4,908.63	4,909.37	0.59	-0.07	-0.59
14,026.43	89.67	269.65	8,947.88	390.44	-4,922.20	4,922.94	0.47	-0.15	-0.44
14,040.00	89.64	269.60	8,947.96	390.35	-4,935.77	4,936.51	0.43	-0.22	-0.37
14,053.43	89.59	269.58	8,948.05	390.26	-4,949.20	4,949.94	0.40	-0.37	-0.15
14,066.86	89.54	269.59	8,948.15	390.16	-4,962.63	4,963.37	0.38	-0.37	0.07
14,080.29	89.48	269.59	8,948.26	390.06	-4,976.06	4,976.80	0.45	-0.45	0.00
14,093.71	89.43	269.60	8,948.39	389.97	-4,989.47	4,990.21	0.38	-0.37	0.07
14,103.60	89.39	269.60	8,948.49	389.90	-4,999.36	5,000.10	0.37	-0.37	0.00
04_T04-5000VS(BD-131H)									
14,107.14	89.38	269.60	8,948.53	389.87	-5,002.90	5,003.64	0.37	-0.37	0.00
14,120.57	88.92	270.00	8,948.73	389.83	-5,016.33	5,017.07	4.54	-3.43	2.98
14,134.00	88.32	270.93	8,949.05	389.94	-5,029.76	5,030.50	8.24	-4.47	6.92
14,147.43	88.16	272.06	8,949.47	390.29	-5,043.18	5,043.92	8.49	-1.19	8.41
14,160.86	88.10	272.13	8,949.91	390.78	-5,056.59	5,057.33	0.69	-0.45	0.52
14,174.29	88.12	272.01	8,950.35	391.26	-5,070.00	5,070.75	0.91	0.15	-0.89
14,187.71	88.14	271.89	8,950.79	391.72	-5,083.41	5,084.15	0.91	0.15	-0.89
14,201.14	88.17	271.76	8,951.22	392.15	-5,096.83	5,097.57	0.99	0.22	-0.97
14,214.57	88.21	271.64	8,951.64	392.54	-5,110.24	5,110.99	0.94	0.30	-0.89
14,228.00	88.25	271.55	8,952.06	392.92	-5,123.66	5,124.41	0.73	0.30	-0.67
14,241.57	88.29	271.49	8,952.47	393.28	-5,137.22	5,137.97	0.53	0.29	-0.44
14,255.14	88.34	271.46	8,952.87	393.63	-5,150.78	5,151.53	0.43	0.37	-0.22
14,268.71	88.39	271.44	8,953.25	393.97	-5,164.34	5,165.09	0.40	0.37	-0.15



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,282.29	88.43	271.43	8,953.63	394.31	-5,177.91	5,178.66	0.30	0.29	-0.07	
14,295.86	88.47	271.43	8,954.00	394.65	-5,191.47	5,192.22	0.29	0.29	0.00	
14,309.43	88.51	271.44	8,954.35	394.99	-5,205.03	5,205.78	0.30	0.29	0.07	
14,323.00	88.53	271.44	8,954.71	395.33	-5,218.59	5,219.34	0.15	0.15	0.00	
14,336.43	88.54	271.45	8,955.05	395.67	-5,232.02	5,232.77	0.11	0.07	0.07	
14,349.86	88.54	271.47	8,955.39	396.01	-5,245.44	5,246.19	0.15	0.00	0.15	
14,363.29	88.53	271.48	8,955.73	396.36	-5,258.86	5,259.61	0.11	-0.07	0.07	
14,376.71	88.52	271.49	8,956.08	396.70	-5,272.27	5,273.02	0.11	-0.07	0.07	
14,390.14	88.51	271.49	8,956.43	397.05	-5,285.69	5,286.44	0.07	-0.07	0.00	
14,403.57	87.94	271.72	8,956.84	397.43	-5,299.11	5,299.86	4.58	-4.24	1.71	
14,417.00	87.74	271.79	8,957.35	397.84	-5,312.52	5,313.28	1.58	-1.49	0.52	
14,430.43	87.76	271.78	8,957.88	398.26	-5,325.94	5,326.69	0.17	0.15	-0.07	
14,443.86	87.80	271.76	8,958.40	398.67	-5,339.35	5,340.10	0.33	0.30	-0.15	
14,457.29	87.84	271.74	8,958.91	399.08	-5,352.76	5,353.52	0.33	0.30	-0.15	
14,470.71	87.89	271.72	8,959.41	399.49	-5,366.17	5,366.92	0.40	0.37	-0.15	
14,484.14	87.94	271.69	8,959.90	399.89	-5,379.58	5,380.34	0.43	0.37	-0.22	
14,497.57	88.00	271.65	8,960.37	400.28	-5,393.00	5,393.76	0.54	0.45	-0.30	
14,511.00	88.07	271.61	8,960.83	400.66	-5,406.41	5,407.17	0.60	0.52	-0.30	
14,524.43	88.14	271.55	8,961.28	401.03	-5,419.83	5,420.59	0.69	0.52	-0.45	
14,537.86	88.21	271.49	8,961.70	401.39	-5,433.25	5,434.01	0.69	0.52	-0.45	
14,551.29	88.29	271.42	8,962.11	401.73	-5,446.67	5,447.43	0.79	0.60	-0.52	
14,564.71	88.36	271.35	8,962.51	402.05	-5,460.08	5,460.84	0.74	0.52	-0.52	
14,578.14	88.42	271.26	8,962.88	402.36	-5,473.50	5,474.26	0.81	0.45	-0.67	
14,591.57	88.46	271.17	8,963.25	402.64	-5,486.92	5,487.69	0.73	0.30	-0.67	
14,605.00	88.48	271.06	8,963.61	402.90	-5,500.35	5,501.11	0.83	0.15	-0.82	
14,618.57	88.46	270.93	8,963.97	403.14	-5,513.91	5,514.67	0.97	-0.15	-0.96	
14,632.14	88.42	270.80	8,964.34	403.34	-5,527.47	5,528.24	1.00	-0.29	-0.96	
14,645.71	88.36	270.65	8,964.72	403.51	-5,541.04	5,541.80	1.19	-0.44	-1.11	
14,659.29	88.30	270.50	8,965.12	403.65	-5,554.61	5,555.37	1.19	-0.44	-1.10	
14,672.86	88.24	270.36	8,965.53	403.75	-5,568.17	5,568.94	1.12	-0.44	-1.03	
14,686.43	88.19	270.21	8,965.95	403.82	-5,581.74	5,582.50	1.16	-0.37	-1.11	
14,700.00	88.17	270.08	8,966.38	403.85	-5,595.30	5,596.07	0.97	-0.15	-0.96	
14,713.43	88.18	269.97	8,966.81	403.86	-5,608.72	5,609.49	0.82	0.07	-0.82	
14,726.86	88.21	269.87	8,967.23	403.84	-5,622.15	5,622.91	0.78	0.22	-0.74	
14,740.29	88.26	269.78	8,967.65	403.80	-5,635.57	5,636.33	0.77	0.37	-0.67	
14,753.71	88.33	269.69	8,968.04	403.74	-5,648.98	5,649.75	0.85	0.52	-0.67	
14,767.14	88.39	269.60	8,968.43	403.65	-5,662.41	5,663.17	0.81	0.45	-0.67	
14,780.57	88.47	269.52	8,968.80	403.55	-5,675.83	5,676.60	0.84	0.60	-0.60	
14,794.00	88.54	269.43	8,969.15	403.43	-5,689.26	5,690.02	0.85	0.52	-0.67	
14,807.43	88.61	269.34	8,969.48	403.28	-5,702.68	5,703.45	0.85	0.52	-0.67	
14,820.86	88.69	269.25	8,969.80	403.12	-5,716.11	5,716.87	0.90	0.60	-0.67	
14,834.29	88.76	269.17	8,970.10	402.93	-5,729.53	5,730.30	0.79	0.52	-0.60	
14,847.71	88.84	269.08	8,970.38	402.73	-5,742.95	5,743.71	0.90	0.60	-0.67	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,861.14	88.92	269.00	8,970.64	402.50	-5,756.37	5,757.14	0.84	0.60	-0.60	
14,874.57	89.00	268.92	8,970.88	402.26	-5,769.80	5,770.56	0.84	0.60	-0.60	
14,888.00	89.08	268.85	8,971.11	402.00	-5,783.23	5,783.99	0.79	0.60	-0.52	
14,901.57	89.18	268.80	8,971.31	401.72	-5,796.79	5,797.55	0.82	0.74	-0.37	
14,915.14	89.27	268.75	8,971.50	401.43	-5,810.36	5,811.12	0.76	0.66	-0.37	
14,928.71	89.36	268.71	8,971.66	401.13	-5,823.92	5,824.68	0.73	0.66	-0.29	
14,942.29	89.45	268.68	8,971.80	400.82	-5,837.50	5,838.26	0.70	0.66	-0.22	
14,955.86	89.53	268.66	8,971.92	400.51	-5,851.06	5,851.82	0.61	0.59	-0.15	
14,969.43	89.59	268.65	8,972.03	400.19	-5,864.63	5,865.39	0.45	0.44	-0.07	
14,983.00	89.64	268.66	8,972.12	399.87	-5,878.20	5,878.95	0.38	0.37	0.07	
14,996.43	89.66	268.70	8,972.20	399.56	-5,891.62	5,892.38	0.33	0.15	0.30	
15,009.86	89.65	268.74	8,972.28	399.26	-5,905.05	5,905.80	0.31	-0.07	0.30	
15,023.29	89.64	268.79	8,972.36	398.97	-5,918.48	5,919.23	0.38	-0.07	0.37	
15,036.71	89.63	268.83	8,972.45	398.69	-5,931.89	5,932.65	0.31	-0.07	0.30	
15,050.14	89.63	268.86	8,972.54	398.42	-5,945.32	5,946.07	0.22	0.00	0.22	
15,063.57	89.34	269.14	8,972.66	398.19	-5,958.75	5,959.50	3.00	-2.16	2.08	
15,077.00	88.64	270.02	8,972.89	398.09	-5,972.17	5,972.93	8.37	-5.21	6.55	
15,090.57	88.30	271.13	8,973.26	398.22	-5,985.74	5,986.49	8.55	-2.51	8.18	
15,104.14	88.46	271.27	8,973.64	398.51	-5,999.30	6,000.05	1.57	1.18	1.03	
15,117.71	88.56	271.10	8,973.99	398.79	-6,012.86	6,013.62	1.45	0.74	-1.25	
15,131.29	88.68	270.90	8,974.32	399.03	-6,026.44	6,027.19	1.72	0.88	-1.47	
15,144.86	88.79	270.70	8,974.62	399.22	-6,040.00	6,040.76	1.68	0.81	-1.47	
15,158.43	88.91	270.51	8,974.89	399.36	-6,053.57	6,054.32	1.66	0.88	-1.40	
15,172.00	89.02	270.33	8,975.14	399.46	-6,067.14	6,067.89	1.55	0.81	-1.33	
15,185.43	89.12	270.19	8,975.35	399.52	-6,080.56	6,081.32	1.28	0.74	-1.04	
15,198.86	89.21	270.06	8,975.55	399.55	-6,093.99	6,094.75	1.18	0.67	-0.97	
15,212.29	89.30	269.96	8,975.72	399.55	-6,107.42	6,108.18	1.00	0.67	-0.74	
15,225.71	89.39	269.86	8,975.88	399.53	-6,120.84	6,121.60	1.00	0.67	-0.75	
15,239.14	89.48	269.77	8,976.01	399.49	-6,134.27	6,135.02	0.95	0.67	-0.67	
15,252.57	89.59	269.70	8,976.12	399.42	-6,147.70	6,148.45	0.97	0.82	-0.52	
15,266.00	89.73	269.64	8,976.20	399.35	-6,161.13	6,161.88	1.13	1.04	-0.45	
15,279.57	89.90	269.59	8,976.24	399.26	-6,174.70	6,175.45	1.31	1.25	-0.37	
15,293.14	90.08	269.56	8,976.25	399.15	-6,188.27	6,189.02	1.34	1.33	-0.22	
15,306.71	90.28	269.53	8,976.20	399.05	-6,201.84	6,202.59	1.49	1.47	-0.22	
15,320.29	90.46	269.51	8,976.12	398.93	-6,215.42	6,216.17	1.33	1.33	-0.15	
15,333.86	90.62	269.49	8,975.99	398.81	-6,228.98	6,229.74	1.19	1.18	-0.15	
15,347.43	90.75	269.48	8,975.83	398.69	-6,242.55	6,243.31	0.96	0.96	-0.07	
15,361.00	90.82	269.46	8,975.64	398.57	-6,256.12	6,256.88	0.54	0.52	-0.15	
15,374.43	90.79	269.45	8,975.45	398.44	-6,269.55	6,270.30	0.24	-0.22	-0.07	
15,387.86	90.71	269.44	8,975.27	398.31	-6,282.98	6,283.73	0.60	-0.60	-0.07	
15,401.29	90.60	269.43	8,975.12	398.18	-6,296.41	6,297.16	0.82	-0.82	-0.07	
15,414.71	90.48	269.42	8,974.99	398.04	-6,309.83	6,310.58	0.90	-0.89	-0.07	
15,428.14	90.37	269.41	8,974.90	397.91	-6,323.25	6,324.01	0.82	-0.82	-0.07	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,441.57	90.10	269.75	8,974.84	397.81	-6,336.68	6,337.44	3.23	-2.01	2.53	
15,455.00	89.60	270.74	8,974.88	397.86	-6,350.11	6,350.87	8.26	-3.72	7.37	
15,468.57	89.53	271.25	8,974.98	398.10	-6,363.68	6,364.43	3.79	-0.52	3.76	
15,482.14	89.59	271.24	8,975.08	398.39	-6,377.25	6,378.00	0.45	0.44	-0.07	
15,495.71	89.66	271.24	8,975.17	398.69	-6,390.81	6,391.57	0.52	0.52	0.00	
15,509.29	89.73	271.22	8,975.24	398.98	-6,404.39	6,405.14	0.54	0.52	-0.15	
15,522.86	89.79	271.19	8,975.30	399.27	-6,417.96	6,418.71	0.49	0.44	-0.22	
15,536.43	89.82	271.13	8,975.35	399.54	-6,431.52	6,432.28	0.49	0.22	-0.44	
15,550.00	89.79	271.03	8,975.39	399.80	-6,445.09	6,445.85	0.77	-0.22	-0.74	
15,563.43	89.68	270.85	8,975.45	400.02	-6,458.52	6,459.28	1.57	-0.82	-1.34	
15,576.86	89.52	270.64	8,975.55	400.19	-6,471.95	6,472.70	1.97	-1.19	-1.56	
15,590.29	89.33	270.40	8,975.68	400.31	-6,485.38	6,486.13	2.28	-1.41	-1.79	
15,603.71	89.13	270.16	8,975.86	400.38	-6,498.80	6,499.55	2.33	-1.49	-1.79	
15,617.14	88.94	269.92	8,976.09	400.39	-6,512.22	6,512.98	2.28	-1.41	-1.79	
15,630.57	88.77	269.71	8,976.36	400.34	-6,525.65	6,526.41	2.01	-1.27	-1.56	
15,644.00	88.64	269.53	8,976.66	400.25	-6,539.08	6,539.83	1.65	-0.97	-1.34	
15,657.57	88.60	269.43	8,976.99	400.13	-6,552.64	6,553.40	0.79	-0.29	-0.74	
15,671.14	88.61	269.37	8,977.32	399.99	-6,566.21	6,566.96	0.45	0.07	-0.44	
15,684.71	88.65	269.34	8,977.64	399.84	-6,579.77	6,580.53	0.37	0.29	-0.22	
15,698.29	88.71	269.32	8,977.96	399.68	-6,593.35	6,594.10	0.47	0.44	-0.15	
15,711.86	88.79	269.31	8,978.25	399.52	-6,606.91	6,607.67	0.59	0.59	-0.07	
15,725.43	88.87	269.29	8,978.53	399.35	-6,620.48	6,621.24	0.61	0.59	-0.15	
15,739.00	88.95	269.26	8,978.79	399.18	-6,634.05	6,634.80	0.63	0.59	-0.22	
15,752.43	89.02	269.21	8,979.03	399.00	-6,647.47	6,648.23	0.64	0.52	-0.37	
15,765.86	89.09	269.14	8,979.25	398.81	-6,660.90	6,661.65	0.74	0.52	-0.52	
15,779.29	89.15	269.06	8,979.45	398.60	-6,674.33	6,675.08	0.74	0.45	-0.60	
15,792.71	89.22	268.98	8,979.64	398.37	-6,687.74	6,688.50	0.79	0.52	-0.60	
15,806.14	89.28	268.90	8,979.82	398.12	-6,701.17	6,701.92	0.74	0.45	-0.60	
15,819.57	89.35	268.83	8,979.98	397.85	-6,714.60	6,715.35	0.74	0.52	-0.52	
15,833.00	89.41	268.77	8,980.13	397.57	-6,728.02	6,728.77	0.63	0.45	-0.45	
15,846.43	89.47	268.75	8,980.26	397.28	-6,741.45	6,742.20	0.47	0.45	-0.15	
15,859.86	89.53	268.73	8,980.37	396.98	-6,754.88	6,755.63	0.47	0.45	-0.15	
15,873.29	89.59	268.73	8,980.48	396.69	-6,768.30	6,769.05	0.45	0.45	0.00	
15,886.71	89.65	268.73	8,980.57	396.39	-6,781.72	6,782.47	0.45	0.45	0.00	
15,900.14	89.72	268.74	8,980.64	396.09	-6,795.14	6,795.89	0.53	0.52	0.07	
15,913.57	89.79	268.74	8,980.70	395.80	-6,808.57	6,809.32	0.52	0.52	0.00	
15,927.00	89.87	268.73	8,980.74	395.50	-6,822.00	6,822.74	0.60	0.60	-0.07	
15,940.57	89.97	268.72	8,980.76	395.20	-6,835.56	6,836.31	0.74	0.74	-0.07	
15,954.14	90.08	268.69	8,980.75	394.89	-6,849.13	6,849.88	0.84	0.81	-0.22	
15,967.71	90.19	268.66	8,980.72	394.58	-6,862.70	6,863.44	0.84	0.81	-0.22	
15,981.29	90.31	268.62	8,980.66	394.26	-6,876.27	6,877.02	0.93	0.88	-0.29	
15,994.86	90.42	268.57	8,980.57	393.92	-6,889.84	6,890.58	0.89	0.81	-0.37	
16,008.43	90.53	268.52	8,980.46	393.58	-6,903.40	6,904.15	0.89	0.81	-0.37	
16,022.00	90.63	268.45	8,980.32	393.22	-6,916.97	6,917.71	0.90	0.74	-0.52	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,035.43	90.71	268.36	8,980.17	392.85	-6,930.39	6,931.13	0.90	0.60	-0.67	
16,048.86	90.78	268.26	8,979.99	392.45	-6,943.82	6,944.56	0.91	0.52	-0.74	
16,062.29	90.84	268.15	8,979.80	392.03	-6,957.24	6,957.98	0.93	0.45	-0.82	
16,075.71	90.88	268.05	8,979.60	391.58	-6,970.65	6,971.39	0.80	0.30	-0.75	
16,089.14	90.91	267.95	8,979.39	391.12	-6,984.07	6,984.81	0.78	0.22	-0.74	
16,102.57	90.91	267.86	8,979.18	390.63	-6,997.49	6,998.23	0.67	0.00	-0.67	
16,116.00	90.88	267.79	8,978.97	390.12	-7,010.91	7,011.64	0.57	-0.22	-0.52	
16,129.57	90.79	267.76	8,978.77	389.59	-7,024.47	7,025.20	0.70	-0.66	-0.22	
16,143.14	90.68	267.74	8,978.60	389.06	-7,038.02	7,038.76	0.82	-0.81	-0.15	
16,156.71	90.55	267.72	8,978.45	388.52	-7,051.58	7,052.32	0.97	-0.96	-0.15	
16,170.29	90.42	267.71	8,978.33	387.98	-7,065.15	7,065.88	0.96	-0.96	-0.07	
16,183.86	90.31	267.68	8,978.25	387.43	-7,078.71	7,079.44	0.84	-0.81	-0.22	
16,197.43	90.14	267.92	8,978.19	386.91	-7,092.27	7,093.00	2.17	-1.25	1.77	
16,211.00	89.78	268.89	8,978.20	386.53	-7,105.83	7,106.56	7.62	-2.65	7.15	
16,224.43	89.21	269.80	8,978.32	386.38	-7,119.26	7,119.99	8.00	-4.24	6.78	
16,237.86	89.12	270.61	8,978.52	386.43	-7,132.69	7,133.42	6.07	-0.67	6.03	
16,251.29	89.18	270.36	8,978.72	386.54	-7,146.12	7,146.85	1.91	0.45	-1.86	
16,264.71	89.25	270.08	8,978.90	386.59	-7,159.54	7,160.27	2.15	0.52	-2.09	
16,278.14	89.33	269.78	8,979.07	386.58	-7,172.97	7,173.70	2.31	0.60	-2.23	
16,291.57	89.41	269.51	8,979.22	386.49	-7,186.40	7,187.12	2.10	0.60	-2.01	
16,305.00	89.49	269.28	8,979.34	386.35	-7,199.82	7,200.55	1.81	0.60	-1.71	
16,318.43	89.55	269.13	8,979.46	386.16	-7,213.25	7,213.98	1.20	0.45	-1.12	
16,331.86	89.60	269.03	8,979.56	385.95	-7,226.68	7,227.41	0.83	0.37	-0.74	
16,345.29	89.65	268.97	8,979.64	385.71	-7,240.11	7,240.84	0.58	0.37	-0.45	
16,358.71	89.70	268.93	8,979.72	385.47	-7,253.53	7,254.25	0.48	0.37	-0.30	
16,372.14	89.76	268.91	8,979.78	385.22	-7,266.95	7,267.68	0.47	0.45	-0.15	
16,385.57	89.83	268.89	8,979.83	384.96	-7,280.38	7,281.11	0.54	0.52	-0.15	
16,399.00	89.92	268.88	8,979.86	384.70	-7,293.81	7,294.53	0.67	0.67	-0.07	
16,412.57	90.04	268.86	8,979.87	384.43	-7,307.38	7,308.10	0.90	0.88	-0.15	
16,426.14	90.17	268.83	8,979.84	384.16	-7,320.94	7,321.67	0.98	0.96	-0.22	
16,439.71	90.32	268.81	8,979.78	383.88	-7,334.51	7,335.23	1.12	1.11	-0.15	
16,453.29	90.48	268.79	8,979.69	383.59	-7,348.09	7,348.81	1.19	1.18	-0.15	
16,466.86	90.64	268.77	8,979.56	383.30	-7,361.65	7,362.37	1.19	1.18	-0.15	
16,480.43	90.81	268.75	8,979.38	383.01	-7,375.22	7,375.94	1.26	1.25	-0.15	
16,494.00	90.99	268.73	8,979.17	382.71	-7,388.78	7,389.50	1.33	1.33	-0.15	
16,508.38	91.19	268.70	8,978.90	382.39	-7,403.16	7,403.88	1.41	1.39	-0.21	
16,522.75	91.39	268.68	8,978.57	382.06	-7,417.52	7,418.24	1.40	1.39	-0.14	
16,537.13	91.60	268.65	8,978.20	381.72	-7,431.89	7,432.61	1.48	1.46	-0.21	
16,551.50	91.80	268.63	8,977.77	381.38	-7,446.25	7,446.97	1.40	1.39	-0.14	
16,565.88	92.00	268.61	8,977.30	381.04	-7,460.62	7,461.34	1.40	1.39	-0.14	
16,580.25	92.20	268.59	8,976.77	380.69	-7,474.97	7,475.69	1.40	1.39	-0.14	
16,594.63	92.38	268.56	8,976.19	380.33	-7,489.34	7,490.06	1.27	1.25	-0.21	
16,605.17	92.50	268.55	8,975.75	380.06	-7,499.87	7,500.58	1.12	1.11	-0.14	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Black Diamond 34 Fed Com 131H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3315+30 @ 3345.00usft
Site:	Black Diamond 34 Fed Com	MD Reference:	3315+30 @ 3345.00usft
Well:	Black Diamond 34 Fed Com 131H	North Reference:	Grid
Wellbore:	131H	Survey Calculation Method:	Minimum Curvature
Design:	131H	Database:	EDM 5000.14 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
05_T05-7500VS(BD-131H)									
16,609.00	92.54	268.54	8,975.58	379.97	-7,503.69	7,504.41	1.12	1.11	-0.14
Final MWD Survey: 16609.00' MD, 92.54°INC, 268.54°AZ									
16,627.21	92.54	268.54	8,974.77	379.50	-7,521.88	7,522.59	0.00	0.00	0.00
100FWL: 16627.21' MD, 7522.59' VS, 8974.77' TVD - 06_LTP(BD-131H)									
16,670.00	92.54	268.54	8,972.87	378.41	-7,564.61	7,565.32	0.00	0.00	0.00
PTB: 16670.00' MD, 92.54°INC, 268.54°AZ - 07_PBHL(BD-131H)									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
110.00	110.00	Rustler				
345.03	345.00	Top of Salt				
1,100.75	1,100.00	Base of Salt				
1,350.23	1,349.00	Yates				
2,721.79	2,717.00	Capitan				
3,460.64	3,452.00	Dlwr Mnt Group				
5,342.75	5,328.00	Lower Brushy Canyon				
5,669.09	5,654.00	Bone Spring Line				
7,048.14	7,030.00	1st Bone Spring SD				
7,252.70	7,233.00	2nd Bone Spring LM				
7,884.90	7,862.00	2nd Bone Spring SD				
8,226.31	8,203.00	3rd Bone Spring LM				
8,834.00	8,791.00	3rd Bone Spring SD				

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
8,485.00	8,461.64	464.53	261.57	KOP: 8485.00' MD, -260.68' VS, 8461.64' TVD	
8,740.79	8,708.21	469.95	200.49	100FEL: 8740.79' MD, -199.59' VS, 8708.21' TVD	
9,526.00	9,072.53	489.42	-430.97	EOC: 9526.00' MD, 431.90' VS, 9072.53' TVD	
16,609.00	8,975.58	379.97	-7,503.69	Final MWD Survey: 16609.00' MD, 92.54°INC, 268.54°AZ	
16,627.21	8,974.77	379.50	-7,521.88	100FWL: 16627.21' MD, 7522.59' VS, 8974.77' TVD	
16,670.00	8,972.87	378.41	-7,564.61	PTB: 16670.00' MD, 92.54°INC, 268.54°AZ	

Checked By: _____ Approved By: _____ Date: _____

Office
 District I – (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II – (575) 748-1283
 811 S. First St., Artesia, NM 88210
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 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV – (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM
 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

WELL API NO. 30-015-47822
5. Indicate Type of Lease STATE ☐ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Black Diamond 34 Fed
8. Well Number 131H
9. OGRID Number 371449
10. Pool name or Wildcat Parkway; Bone Spring

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐	
2. Name of Operator Colgate Operating, LLC	
3. Address of Operator 300 North Marienfeld, Suite 1,000 – Midland, Tx 79701	
4. Well Location	
Unit Letter: <u>A</u> <u>1290</u> feet from the <u>North</u> line and <u>301</u> feet from the <u>East</u> line	
Section: <u>34</u> Township: <u>19S</u> Range: <u>29E</u> NMPM County: <u>Eddy</u>	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3314 GL	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO: PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐ TEMPORARILY ABANDON ☐ CHANGE PLANS ☐ PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐ DOWNHOLE COMMINGLE ☐ CLOSED-LOOP SYSTEM ☐ OTHER: ☐		SUBSEQUENT REPORT OF: REMEDIAL WORK ☐ ALTERING CASING ☐ COMMENCE DRILLING OPNS. ☐ P AND A ☐ CASING/CEMENT JOB ☐ OTHER: New Well Completion ☒	
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13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

1/27/2022- Pressured up casing to 8,200 psi with a 15 minute test and 8,500 psi with a 15 minute test
 2/27/2022- Perf and frac stages 1-41.
 Perfs 9,375 – 16,435
 Frac with 304,315 bbl liquid and 15,689,520 lbs of proppant
 3/06/2022- Drilled out plugs
 Turn over to production. Tubing 2.875 @ 8,951
 TD 16,670 - PBTD 16,557

Spud Date: 10/12/2021

Rig Release Date: 10/27/2021

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE: Mikah Thomas TITLE: Sr. Regulatory Analyst DATE: 05/15/2022

Type or print name Mikah Thomas E-mail address: mtomas@colgateenergy.com PHONE: 432-695-4272
For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____
 Conditions of Approval (if any): _____

Submit To Appropriate District Office Two Copies <u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 811 S. First St., Artesia, NM 88210 <u>District III</u> 1000 Rio Brazos Rd., Aztec, NM 87410 <u>District IV</u> 1220 S. St. Francis Dr., Santa Fe, NM 87505		State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505				Form C-105 Revised April 3, 2017				
WELL COMPLETION OR RECOMPLETION REPORT AND LOG										
4. Reason for filing: ☒ COMPLETION REPORT (Fill in boxes #1 through #31 for State and Fee wells only) ☐ C-144 CLOSURE ATTACHMENT (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)								5. Lease Name or Unit Agreement Name Black Diamond 34 Fed		
7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER								6. Well Number: 131H		
8. Name of Operator Colgate Operating, LLC						9. OGRID 371449				
10. Address of Operator 300 North Marcienfeld, Suite 1,000 Midland, Texas 79705						11. Pool name or Wildcat Parkway; Bone Spring				
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	A	34	19S	29E		1290	North	301	East	Eddy
BH:	B	33	19S	29E		926	North	2577	East	Eddy
13. Date Spudded 10/12/2021	14. Date T.D. Reached 10/24/2021		15. Date Rig Released 10/27/2021		16. Date Completed (Ready to Produce) 3/5/2022			17. Elevations (DF and RKB, RT, GR, etc.) 3314		
18. Total Measured Depth of Well 16,670			19. Plug Back Measured Depth 16,557		20. Was Directional Survey Made? Yes			21. Type Electric and Other Logs Run Gamma Ray		
22. Producing Interval(s), of this completion - Top, Bottom, Name 9,375-16,435 Parkway; Bone Spring										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
18.625		87.5		332		22.375		Prem Plus 355 sx 1.34		
13.375		54.5		1,517		17.5		Prem Plus 520 sx 2.08, 225 sx 1.34		
9.625		36		3,389		12.25		Prem Plus 700 sx 2.07, 230 sx 1.34		
5.5		17		16,648		8.75		Prem 835 sx 2.41, 1,325 sx 1.73		
24. LINER RECORD										
SIZE	TOP	BOTTOM	SACKS CEMENT		SCREEN		25. TUBING RECORD			
							SIZE	DEPTH SET	PACKER SET	
							2 7/8	8951		
26. Perforation record (interval, size, and number) 9,375-16,435 0.37 1,335 holes						27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.				
						DEPTH INTERVAL		AMOUNT AND KIND MATERIAL USED		
						9,375-16,435		Total Proppant 15,689,520 – Total Fluid 304,315		
28. PRODUCTION										
Date First Production 03/21/2022		Production Method (<i>Flowing, gas lift, pumping - Size and type pump</i>) Gas Lift				Well Status (<i>Prod. or Shut-in</i>) Producing				
Date of Test 04/14/2022	Hours Tested 24	Choke Size 88/88	Prod'n For Test Period	Oil – Bbl 701	Gas – MCF 953	Water – Bbl. 1608	Gas - Oil Ratio			
Flow Tubing Press. 1170	Casing Pressure 190	Calculated 24-Hour Rate	Oil - Bbl. 701	Gas - MCF 953	Water - Bbl. 1068	Oil Gravity - API - (<i>Corr.</i>) 42.8				
29. Disposition of Gas (<i>Sold, used for fuel, vented, etc.</i>) Sold								30. Test Witnessed By Colgate Operating, LLC		
31. List Attachments C-102, C-103, C-104, Directionnel Survey										
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.								33. Rig Release Date:		
34. If an on-site burial was used at the well, report the exact location of the on-site burial:										
Latitude				Longitude				NAD83		

I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature



Printed

Name: Mikah Thomas

Title: Sr. Regulatory Analyst

Date: 05/15/2022

E-mail Address: mthomas@colgateenergy.com

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Rustler- 110	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt- 345	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt- 1101	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates- 1350	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. DLWR Mnt. Group- 3461	T. Devonian	T. Cliff House	T. Leadville
T. L Brushy Canyon- 5343	T. Silurian	T. Menefee	T. Madison
T. BS Lime- 5669	T. Montoya	T. Point Lookout	T. Elbert
T. 1 st Bone Spring SD- 7048	T. Simpson	T. Mancos	T. McCracken
T. 2 nd Bone Spring LM- 7253	T. McKee	T. Gallup	T. Ignacio Otzte
T. 2 nd Bone Spring SD- 7885	T. Ellenburger	Base Greenhorn	T. Granite
T. 3 rd Bone Spring LM- 8226	T. Gr. Wash	T. Dakota	
T. 3 rd Bone Spring SD- 8834	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T. Todilto	
T. Abo	T. Capitan- 2722	T. Entrada	
T. Wolfcamp	T.	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to.....

No. 3, from.....to.....

No. 2, from.....to.....

No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness In Feet	Lithology	From	To	Thickness In Feet	Lithology
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District I

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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

ACKNOWLEDGMENTS

Action 116408

ACKNOWLEDGMENTS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 116408
	Action Type: [C-104] Completion Packet (C-104C)

ACKNOWLEDGMENTS

☒	I hereby certify that the required Water Use Report has been, or will be, submitted for this wells completion.
☒	I hereby certify that the required FracFocus disclosure has been, or will be, submitted for this wells completion.

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

CONDITIONS

Action 116408

CONDITIONS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 116408
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	File 3160-4 Completion Report and 3160-5 Completion Sundry within 10 days to NMOCD after BLM approval. Log (s) need to be submitted separately as a [UF-WL] EP Well Log Submission (Well Log) Permit.	6/14/2022