

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 RT	
⁴ API Number 30 – 015 – 48000		⁵ Pool Name PARKWAY; BONE SPRING			⁶ Pool Code 49622
⁷ Property Code 330007		⁸ Property Name CRAZY HORSE 32 STATE FED COM			⁹ Well Number 133H

II. ¹⁰ Surface Location

UL or lot no. M	Section 32	Township 19S	Range 30E	Lot Idn	Feet from the 1243	North/South Line South	Feet from the 191	East/West line West	County Eddy
--------------------	---------------	-----------------	--------------	---------	-----------------------	---------------------------	----------------------	------------------------	----------------

¹¹ Bottom Hole Location

UL or lot no. I	Section 33	Township 19S	Range 30E	Lot Idn	Feet from the 1982	North/South line South	Feet from the 10	East/West line East	County Eddy
¹² Lse Code F	¹³ Producing Method Code		¹⁴ Gas Connection Date 12/01/2021		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 06/07/2021	²² Ready Date 12/28/2021	²³ TD 19,851 MD 9,559 TVD	²⁴ PBDT 19,746 MD 9,701 TVD	²⁵ Perforations 9,878 – 19,639	²⁶ DHC, MC
²⁷ Hole Size		²⁸ Casing & Tubing Size		²⁹ Depth Set	³⁰ Sacks Cement
22.375		18.625		371	449 sx
17.5		13.375		1,594	625 sx Lead 225 sx Tail
12.25		9.625		3,324	510 sx Lead 199 sx Tail
8.75		5.5		19,839	750 sx Lead 1,550 sx Tail

V. Well Test Data

³¹ Date New Oil 1/27/22	³² Gas Delivery Date 1/11/22	³³ Test Date 2/28/22	³⁴ Test Length 24 Hours	³⁵ Tbg. Pressure 2150	³⁶ Csg. Pressure 260
³⁷ Choke Size 88/88	³⁸ Oil 367	³⁹ Water 2901	⁴⁰ Gas 1248		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: Operations Tech			Title: PETROLEUM SPECIALIST		
E-mail Address: mthomas@colgateenergy.com			Approval Date: 3/24/2022		
Date: 03/01/2022		Phone: 432-695-4272			

DISTRICT I1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 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) 476-3480 Fax: (505) 476-3482State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102

Revised August 1, 2011

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, N.M. 87505

Submit one copy to appropriate

District Office

AS-DRILLED

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-48000	² Pool Code 49622	³ Pool Name Parkway: Bone Spring
⁴ Property Code 330007	⁵ Property Name Crazy Horse 32 State Fed Com	⁶ Well Number 133H
⁷ GRID No. 371449	⁸ Operator Name Colgate Operating, LLC	⁹ Elevation 3263

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
M	32	19 S	30 E		1243	South	191	West	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
I	33	19 S	30 E		1982	South	10	East	Eddy

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

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16 Legend:

- = Surface Location
- = Bottom Hole Location
- △ = First Take Point (FTP)
- = Last Take Point (LTP)
- ⊙ = Found 1916 USGLO Brass Cap
- ⊙ = Found Monument

NOTE:
DOWNHOLE INFORMATION TAKEN
FROM A REPORT FURNISHED
BY COLGATE ENERGY
DATED 7-3-2021

SURFACE LOCATION
NAD 83 NADSPC ZONE 3001
Y= 586931.39 N
X= 643314.80 E
LAT.= 32.6130889° N
LONG.= 104.0021397° W

BOTTOM HOLE LOCATION
NAD 83 NADSPC ZONE 3001
Y= 587682.24 N
X= 653688.97 E
LAT.= 32.6150594° N
LONG.= 103.9684394° W

FIRST TAKE POINT LOCATION
NAD 83 NADSPC ZONE 3001
Y= 587660.68 N
X= 643384.07 E
LAT.= 32.6150929° N
LONG.= 104.0019073° W

LAST TAKE POINT LOCATION
NAD 83 NADSPC ZONE 3001
Y= 587682.74 N
X= 653604.98 E
LAT.= 32.6150616° N
LONG.= 103.9687122° 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] **12/19/2021**
Signature Date
Mikah Thomas
Printed Name
mthomas@colgateenergy.com
E-mail Address

18 SURVEYOR CERTIFICATION

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

3/20/21
Date of Survey
Plat Revised: 11/17/21
Signature and Seal of Professional Surveyor:

17078
Certificate Number



Colgate Energy

Eddy County, NM (N83-NME)

Crazy Horse 32 State Fed Com

Crazy Horse 32 State Fed Com 133H

30-015-48000

133H

Design: 133H

Standard Survey Report

03 July, 2021



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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		Crazy Horse 32 State Fed Com			
Site Position:		Northing:	586,991.40 usft	Latitude:	32.61325351
From:	Map	Easting:	643,359.01 usft	Longitude:	-104.00199549
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well	Crazy Horse 32 State Fed Com 133H					
Well Position	+N/-S	0.00 usft	Northing:	586,931.20 usft	Latitude:	32.61308840
	+E/-W	0.00 usft	Easting:	643,314.23 usft	Longitude:	-104.00214153
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,262.00 usft
Grid Convergence:		0.18 °				

Wellbore	133H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IFR	6/5/2021	7.01	60.30	47,850.20000000

Design	133H				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	89.94	

Survey Program	Date	7/3/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
14.21	19,792.00	Survey #1 - Gordon MWD (133H)	MWD+IFR1+SAG+FDIR (SQ OWSG MWD + IFR1 + Sag + FDIR Correction		
19,851.00	19,851.00	Survey #2 - PTB (133H)	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	
14.21	0.06	153.43	14.21	-0.01	0.00	0.00	0.42	0.42	0.00	
28.43	0.13	153.55	28.43	-0.03	0.01	0.01	0.49	0.49	0.84	
42.64	0.19	153.67	42.64	-0.06	0.03	0.03	0.42	0.42	0.84	
56.86	0.26	153.79	56.86	-0.11	0.06	0.06	0.49	0.49	0.84	
71.07	0.32	153.91	71.07	-0.18	0.09	0.09	0.42	0.42	0.84	
85.29	0.38	154.03	85.29	-0.26	0.13	0.13	0.42	0.42	0.84	
99.50	0.45	154.16	99.50	-0.35	0.17	0.17	0.49	0.49	0.91	
113.71	0.51	154.28	113.71	-0.46	0.22	0.22	0.42	0.42	0.84	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
127.93	0.57	154.40	127.93	-0.58	0.28	0.28	0.42	0.42	0.84
142.00	0.63	154.53	142.00	-0.71	0.34	0.34	0.42	0.42	0.92
Rustler									
142.14	0.63	154.53	142.14	-0.71	0.34	0.34	0.42	0.42	0.82
156.36	0.70	154.65	156.36	-0.86	0.42	0.41	0.49	0.49	0.84
170.57	0.76	154.78	170.56	-1.02	0.49	0.49	0.42	0.42	0.91
184.79	0.82	154.90	184.78	-1.20	0.58	0.58	0.42	0.42	0.84
199.00	0.88	155.03	198.99	-1.39	0.67	0.66	0.42	0.42	0.91
212.14	0.98	150.58	212.13	-1.58	0.76	0.76	0.94	0.76	-33.87
225.29	1.09	147.01	225.28	-1.78	0.89	0.88	0.97	0.84	-27.15
238.43	1.20	144.10	238.42	-2.00	1.04	1.03	0.95	0.84	-22.15
251.57	1.32	141.69	251.55	-2.23	1.21	1.21	1.00	0.91	-18.34
264.71	1.43	139.68	264.69	-2.47	1.41	1.41	0.91	0.84	-15.30
277.86	1.55	137.97	277.83	-2.73	1.64	1.63	0.97	0.91	-13.00
291.00	1.66	136.51	290.97	-3.00	1.89	1.88	0.89	0.84	-11.11
305.92	1.66	135.67	305.88	-3.31	2.18	2.18	0.16	0.00	-5.63
320.83	1.66	134.75	320.79	-3.62	2.49	2.49	0.18	0.00	-6.17
335.75	1.65	133.77	335.70	-3.92	2.80	2.79	0.20	-0.07	-6.57
350.67	1.65	132.76	350.61	-4.21	3.11	3.11	0.19	0.00	-6.77
365.58	1.65	131.72	365.52	-4.50	3.43	3.42	0.20	0.00	-6.98
380.50	1.64	130.68	380.43	-4.79	3.75	3.75	0.21	-0.07	-6.97
382.07	1.64	130.68	382.00	-4.81	3.78	3.78	0.00	0.00	0.00
Top of Salt									
395.42	1.64	129.64	395.35	-5.06	4.08	4.07	0.22	0.00	-7.79
410.33	1.64	128.63	410.25	-5.33	4.41	4.40	0.19	0.00	-6.77
425.25	1.64	127.65	425.16	-5.59	4.74	4.74	0.19	0.00	-6.57
440.17	1.64	126.75	440.08	-5.85	5.08	5.08	0.17	0.00	-6.03
455.08	1.65	125.96	454.98	-6.11	5.43	5.42	0.17	0.07	-5.30
470.00	1.65	125.34	469.89	-6.36	5.78	5.77	0.12	0.00	-4.16
483.00	1.66	125.00	482.89	-6.57	6.08	6.08	0.11	0.08	-2.62
496.00	1.67	124.77	495.88	-6.79	6.39	6.39	0.09	0.08	-1.77
509.00	1.68	124.61	508.88	-7.00	6.71	6.70	0.08	0.08	-1.23
522.00	1.69	124.47	521.87	-7.22	7.02	7.01	0.08	0.08	-1.08
535.00	1.71	124.33	534.87	-7.44	7.34	7.33	0.16	0.15	-1.08
548.00	1.74	124.16	547.86	-7.66	7.66	7.66	0.23	0.23	-1.31
561.00	1.78	123.91	560.86	-7.88	7.99	7.99	0.31	0.31	-1.92
575.83	1.84	123.55	575.68	-8.14	8.38	8.38	0.41	0.40	-2.43
590.67	1.91	123.16	590.51	-8.41	8.79	8.78	0.48	0.47	-2.63
605.50	1.98	122.78	605.33	-8.68	9.21	9.20	0.48	0.47	-2.56
620.33	2.06	122.47	620.15	-8.97	9.65	9.64	0.54	0.54	-2.09
635.17	2.13	122.28	634.98	-9.26	10.11	10.10	0.47	0.47	-1.28
650.00	2.20	122.26	649.80	-9.56	10.58	10.57	0.47	0.47	-0.13
663.89	2.25	122.51	663.68	-9.84	11.04	11.03	0.37	0.36	1.80



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
677.78	2.30	122.88	677.56	-10.14	11.50	11.49	0.38	0.36	2.66	
691.67	2.34	123.32	691.44	-10.45	11.97	11.96	0.32	0.29	3.17	
705.56	2.37	123.76	705.32	-10.76	12.45	12.44	0.25	0.22	3.17	
719.44	2.40	124.15	719.18	-11.09	12.93	12.92	0.25	0.22	2.81	
733.33	2.43	124.45	733.06	-11.42	13.41	13.40	0.23	0.22	2.16	
747.22	2.45	124.60	746.94	-11.75	13.90	13.89	0.15	0.14	1.08	
761.11	2.46	124.50	760.82	-12.09	14.39	14.38	0.08	0.07	-0.72	
775.00	2.45	124.03	774.69	-12.42	14.88	14.87	0.16	-0.07	-3.38	
788.43	2.43	122.94	788.11	-12.74	15.36	15.34	0.38	-0.15	-8.12	
801.86	2.40	121.41	801.53	-13.04	15.84	15.82	0.53	-0.22	-11.39	
815.29	2.36	119.54	814.95	-13.32	16.32	16.30	0.65	-0.30	-13.92	
828.71	2.31	117.35	828.36	-13.58	16.80	16.78	0.76	-0.37	-16.32	
842.14	2.26	114.85	841.78	-13.82	17.28	17.26	0.83	-0.37	-18.62	
855.57	2.20	111.97	855.20	-14.03	17.76	17.74	0.95	-0.45	-21.44	
869.00	2.12	108.58	868.62	-14.20	18.23	18.22	1.12	-0.60	-25.24	
882.57	1.99	105.24	882.18	-14.35	18.70	18.68	1.30	-0.96	-24.61	
896.14	1.85	101.30	895.74	-14.45	19.14	19.13	1.42	-1.03	-29.03	
909.71	1.71	96.73	909.30	-14.52	19.56	19.54	1.47	-1.03	-33.68	
923.29	1.58	91.57	922.88	-14.55	19.94	19.93	1.45	-0.96	-38.00	
936.86	1.48	86.07	936.44	-14.54	20.31	20.29	1.31	-0.74	-40.53	
950.43	1.40	80.77	950.01	-14.50	20.64	20.63	1.14	-0.59	-39.06	
964.00	1.35	76.60	963.58	-14.44	20.96	20.95	0.82	-0.37	-30.73	
977.57	1.33	75.25	977.14	-14.36	21.27	21.26	0.28	-0.15	-9.95	
991.14	1.35	74.94	990.71	-14.28	21.58	21.56	0.16	0.15	-2.28	
1,004.71	1.38	75.18	1,004.27	-14.19	21.89	21.88	0.23	0.22	1.77	
1,018.29	1.43	75.64	1,017.85	-14.11	22.21	22.20	0.38	0.37	3.39	
1,031.86	1.47	76.10	1,031.42	-14.03	22.55	22.53	0.31	0.29	3.39	
1,045.43	1.64	78.79	1,044.98	-13.95	22.91	22.89	1.36	1.25	19.82	
1,059.00	1.81	80.90	1,058.54	-13.88	23.31	23.29	1.34	1.25	15.55	
1,072.43	1.80	81.25	1,071.97	-13.81	23.73	23.71	0.11	-0.07	2.61	
1,085.86	1.79	81.62	1,085.39	-13.75	24.14	24.13	0.11	-0.07	2.76	
1,099.29	1.78	82.00	1,098.82	-13.69	24.56	24.54	0.12	-0.07	2.83	
1,112.71	1.77	82.35	1,112.23	-13.63	24.97	24.95	0.11	-0.07	2.61	
1,126.14	1.77	82.63	1,125.65	-13.58	25.38	25.36	0.06	0.00	2.08	
1,139.57	1.77	82.79	1,139.08	-13.52	25.79	25.78	0.04	0.00	1.19	
1,153.00	1.80	82.74	1,152.50	-13.47	26.20	26.19	0.22	0.22	-0.37	
1,166.57	1.85	82.54	1,166.06	-13.42	26.63	26.62	0.37	0.37	-1.47	
1,180.14	1.92	82.22	1,179.63	-13.36	27.08	27.06	0.52	0.52	-2.36	
1,193.71	2.00	81.84	1,193.19	-13.29	27.54	27.52	0.60	0.59	-2.80	
1,207.29	2.09	81.45	1,206.76	-13.22	28.02	28.00	0.67	0.66	-2.87	
1,220.86	2.17	81.07	1,220.32	-13.15	28.51	28.50	0.60	0.59	-2.80	
1,234.43	2.25	80.72	1,233.88	-13.06	29.03	29.02	0.60	0.59	-2.58	
1,248.00	2.32	80.43	1,247.44	-12.97	29.56	29.55	0.52	0.52	-2.14	
1,261.57	2.36	80.22	1,261.00	-12.88	30.11	30.10	0.30	0.29	-1.55	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
1,275.14	2.40	80.03	1,274.56	-12.78	30.67	30.65	0.30	0.29	-1.40	
1,288.71	2.42	79.82	1,288.11	-12.68	31.23	31.21	0.16	0.15	-1.55	
1,297.60	2.43	79.62	1,297.00	-12.62	31.60	31.58	0.18	0.15	-2.25	
Base of Salt										
1,302.29	2.44	79.52	1,301.68	-12.58	31.79	31.78	0.17	0.14	-2.14	
1,315.86	2.45	79.07	1,315.24	-12.47	32.36	32.35	0.16	0.07	-3.32	
1,329.43	2.45	78.37	1,328.80	-12.36	32.93	32.92	0.22	0.00	-5.16	
1,343.00	2.45	77.27	1,342.35	-12.24	33.50	33.49	0.35	0.00	-8.11	
1,356.43	2.45	75.54	1,355.77	-12.10	34.06	34.04	0.55	0.00	-12.88	
1,369.86	2.44	73.45	1,369.19	-11.95	34.61	34.60	0.67	-0.07	-15.56	
1,383.29	2.43	71.17	1,382.61	-11.78	35.15	35.14	0.73	-0.07	-16.98	
1,396.71	2.43	68.87	1,396.02	-11.58	35.69	35.67	0.73	0.00	-17.14	
1,410.14	2.42	66.72	1,409.43	-11.37	36.21	36.20	0.68	-0.07	-16.01	
1,423.57	2.42	64.89	1,422.85	-11.14	36.73	36.72	0.58	0.00	-13.63	
1,437.00	2.42	63.62	1,436.27	-10.89	37.24	37.23	0.40	0.00	-9.46	
1,451.14	2.40	63.36	1,450.40	-10.62	37.77	37.76	0.16	-0.14	-1.84	
1,465.29	2.39	63.76	1,464.53	-10.36	38.30	38.29	0.14	-0.07	2.83	
1,467.76	2.39	63.90	1,467.00	-10.31	38.39	38.38	0.25	-0.07	5.77	
Yates										
1,479.43	2.38	64.58	1,478.66	-10.10	38.83	38.82	0.25	-0.07	5.81	
1,493.57	2.36	65.67	1,492.79	-9.86	39.36	39.35	0.35	-0.14	7.71	
1,507.71	2.35	66.90	1,506.92	-9.62	39.89	39.88	0.36	-0.07	8.70	
1,521.86	2.34	68.19	1,521.06	-9.40	40.43	40.42	0.38	-0.07	9.12	
1,536.00	2.33	69.45	1,535.18	-9.19	40.97	40.96	0.37	-0.07	8.91	
1,550.14	2.31	70.58	1,549.31	-9.00	41.50	41.49	0.35	-0.14	7.99	
1,564.29	2.22	63.78	1,563.45	-8.78	42.02	42.01	2.00	-0.64	-48.06	
1,578.43	2.32	34.97	1,577.58	-8.43	42.43	42.42	8.01	0.71	-203.75	
1,592.57	2.90	13.32	1,591.71	-7.85	42.67	42.67	8.02	4.10	-153.11	
1,606.71	2.95	11.32	1,605.83	-7.14	42.83	42.82	0.80	0.35	-14.14	
1,620.86	2.89	11.23	1,619.96	-6.43	42.97	42.96	0.43	-0.42	-0.64	
1,635.00	2.81	10.42	1,634.08	-5.74	43.10	43.10	0.63	-0.57	-5.73	
1,648.43	2.74	7.89	1,647.50	-5.10	43.21	43.20	1.05	-0.52	-18.84	
1,661.86	2.67	4.47	1,660.91	-4.47	43.27	43.27	1.31	-0.52	-25.47	
1,675.29	2.62	0.49	1,674.33	-3.85	43.30	43.30	1.42	-0.37	-29.64	
1,688.71	2.59	356.31	1,687.73	-3.24	43.28	43.28	1.43	-0.22	-31.15	
1,702.14	2.56	352.27	1,701.15	-2.64	43.22	43.22	1.37	-0.22	-30.08	
1,715.57	2.55	348.78	1,714.57	-2.05	43.13	43.12	1.16	-0.07	-25.99	
1,729.00	2.64	332.49	1,727.98	-1.49	42.92	42.92	5.51	0.67	-121.30	
1,742.57	3.12	312.71	1,741.54	-0.96	42.51	42.51	8.08	3.54	-145.76	
1,756.14	3.86	299.32	1,755.08	-0.48	41.84	41.84	8.08	5.45	-98.67	
1,769.71	4.09	297.25	1,768.62	-0.04	41.01	41.01	2.00	1.69	-15.25	
1,783.29	4.09	298.97	1,782.16	0.42	40.16	40.16	0.90	0.00	12.67	
1,796.86	4.11	300.92	1,795.70	0.90	39.32	39.32	1.04	0.15	14.37	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
1,810.43	4.12	302.81	1,809.23	1.42	38.49	38.49	1.00	0.07	13.93
1,824.00	4.13	304.34	1,822.77	1.96	37.68	37.68	0.81	0.07	11.27
1,828.24	4.12	304.56	1,827.00	2.13	37.42	37.43	0.44	-0.23	5.27
Capitan									
1,837.43	4.10	305.05	1,836.16	2.50	36.88	36.89	0.44	-0.22	5.29
1,850.86	4.06	305.23	1,849.56	3.05	36.10	36.11	0.31	-0.30	1.34
1,864.29	4.00	304.98	1,862.96	3.60	35.33	35.33	0.47	-0.45	-1.86
1,877.71	3.92	304.35	1,876.35	4.12	34.57	34.57	0.68	-0.60	-4.69
1,891.14	3.82	303.29	1,889.74	4.63	33.81	33.82	0.92	-0.74	-7.89
1,904.57	3.69	301.69	1,903.15	5.10	33.07	33.08	1.24	-0.97	-11.91
1,918.00	3.51	299.28	1,916.55	5.53	32.35	32.35	1.75	-1.34	-17.94
1,931.57	3.23	296.03	1,930.10	5.90	31.64	31.65	2.50	-2.06	-23.95
1,945.14	2.91	291.51	1,943.65	6.19	30.98	30.98	2.96	-2.36	-33.31
1,958.71	2.59	285.51	1,957.20	6.40	30.36	30.37	3.17	-2.36	-44.22
1,972.29	2.31	277.86	1,970.77	6.52	29.79	29.80	3.17	-2.06	-56.33
1,985.86	2.08	268.71	1,984.33	6.55	29.28	29.28	3.08	-1.69	-67.43
1,999.43	1.93	258.87	1,997.89	6.50	28.81	28.81	2.76	-1.11	-72.51
2,013.00	1.85	249.98	2,011.45	6.39	28.38	28.38	2.24	-0.59	-65.51
2,026.43	1.70	247.17	2,024.88	6.23	27.99	28.00	1.29	-1.12	-20.92
2,039.86	1.60	245.73	2,038.30	6.08	27.63	27.64	0.81	-0.74	-10.72
2,053.29	1.55	245.27	2,051.73	5.93	27.30	27.31	0.38	-0.37	-3.43
2,066.71	1.52	245.40	2,065.14	5.78	26.97	26.98	0.23	-0.22	0.97
2,080.14	1.51	245.80	2,078.57	5.63	26.65	26.65	0.11	-0.07	2.98
2,093.57	1.65	248.40	2,091.99	5.49	26.31	26.31	1.17	1.04	19.36
2,107.00	1.80	250.49	2,105.42	5.34	25.93	25.93	1.21	1.12	15.56
2,120.57	1.80	250.92	2,118.98	5.20	25.53	25.53	0.10	0.00	3.17
2,134.14	1.80	251.48	2,132.54	5.07	25.12	25.13	0.13	0.00	4.13
2,147.71	1.81	252.11	2,146.11	4.93	24.72	24.72	0.16	0.07	4.64
2,161.29	1.83	252.75	2,159.68	4.80	24.31	24.31	0.21	0.15	4.71
2,174.86	1.85	253.35	2,173.24	4.68	23.89	23.89	0.20	0.15	4.42
2,188.43	1.87	253.85	2,186.80	4.55	23.47	23.47	0.19	0.15	3.68
2,202.00	1.90	254.20	2,200.37	4.43	23.04	23.04	0.24	0.22	2.58
2,215.43	1.94	254.51	2,213.79	4.31	22.60	22.61	0.31	0.30	2.31
2,228.86	1.97	254.71	2,227.21	4.19	22.16	22.17	0.23	0.22	1.49
2,242.29	2.01	254.83	2,240.63	4.06	21.71	21.72	0.30	0.30	0.89
2,255.71	2.06	254.90	2,254.04	3.94	21.25	21.26	0.37	0.37	0.52
2,269.14	2.10	254.93	2,267.47	3.81	20.78	20.79	0.30	0.30	0.22
2,282.57	2.14	254.94	2,280.89	3.68	20.30	20.31	0.30	0.30	0.07
2,296.00	2.17	254.93	2,294.31	3.55	19.81	19.82	0.22	0.22	-0.07
2,309.57	2.19	254.92	2,307.87	3.42	19.32	19.32	0.15	0.15	-0.07
2,323.14	2.21	254.90	2,321.43	3.28	18.81	18.82	0.15	0.15	-0.15
2,336.71	2.22	254.89	2,334.99	3.14	18.31	18.31	0.07	0.07	-0.07
2,350.29	2.23	254.90	2,348.56	3.01	17.80	17.80	0.07	0.07	0.07
2,363.86	2.24	254.94	2,362.12	2.87	17.29	17.29	0.07	0.07	0.29



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
2,377.43	2.25	255.01	2,375.68	2.73	16.77	16.78	0.08	0.07	0.52	
2,391.00	2.26	255.15	2,389.24	2.59	16.26	16.26	0.08	0.07	1.03	
2,405.00	2.28	255.39	2,403.22	2.45	15.72	15.72	0.16	0.14	1.71	
2,419.00	2.31	255.69	2,417.21	2.31	15.18	15.18	0.23	0.21	2.14	
2,433.00	2.33	256.03	2,431.20	2.17	14.63	14.63	0.17	0.14	2.43	
2,447.00	2.36	256.37	2,445.19	2.04	14.07	14.07	0.24	0.21	2.43	
2,461.00	2.39	256.72	2,459.18	1.90	13.51	13.51	0.24	0.21	2.50	
2,475.00	2.42	257.05	2,473.17	1.77	12.94	12.94	0.24	0.21	2.36	
2,489.00	2.45	257.35	2,487.15	1.64	12.36	12.36	0.23	0.21	2.14	
2,502.43	2.49	257.63	2,500.57	1.51	11.79	11.79	0.31	0.30	2.08	
2,515.86	2.53	257.88	2,513.99	1.39	11.22	11.22	0.31	0.30	1.86	
2,529.29	2.56	258.11	2,527.40	1.26	10.63	10.63	0.24	0.22	1.71	
2,542.71	2.60	258.31	2,540.81	1.14	10.04	10.04	0.31	0.30	1.49	
2,556.14	2.64	258.48	2,554.23	1.02	9.44	9.44	0.30	0.30	1.27	
2,569.57	2.67	258.61	2,567.64	0.89	8.83	8.83	0.23	0.22	0.97	
2,583.00	2.71	258.69	2,581.06	0.77	8.21	8.21	0.30	0.30	0.60	
2,596.57	2.74	258.70	2,594.61	0.64	7.58	7.58	0.22	0.22	0.07	
2,610.14	2.77	258.66	2,608.17	0.52	6.94	6.94	0.22	0.22	-0.29	
2,623.71	2.80	258.59	2,621.72	0.39	6.29	6.29	0.22	0.22	-0.52	
2,637.29	2.83	258.51	2,635.28	0.25	5.64	5.64	0.22	0.22	-0.59	
2,650.86	2.86	258.40	2,648.84	0.12	4.98	4.98	0.22	0.22	-0.81	
2,664.43	2.89	258.28	2,662.39	-0.02	4.31	4.31	0.23	0.22	-0.88	
2,678.00	2.92	258.14	2,675.94	-0.16	3.64	3.64	0.23	0.22	-1.03	
2,691.43	2.95	257.95	2,689.36	-0.30	2.97	2.97	0.23	0.22	-1.41	
2,704.86	2.99	257.75	2,702.77	-0.45	2.29	2.29	0.31	0.30	-1.49	
2,718.29	3.02	257.55	2,716.18	-0.60	1.60	1.60	0.24	0.22	-1.49	
2,731.71	3.06	257.35	2,729.58	-0.75	0.91	0.90	0.31	0.30	-1.49	
2,745.14	3.10	257.17	2,742.99	-0.91	0.20	0.20	0.31	0.30	-1.34	
2,758.57	3.14	256.99	2,756.40	-1.08	-0.51	-0.51	0.31	0.30	-1.34	
2,772.00	3.19	256.82	2,769.81	-1.24	-1.23	-1.23	0.38	0.37	-1.27	
2,785.57	3.24	256.65	2,783.36	-1.42	-1.97	-1.98	0.38	0.37	-1.25	
2,799.14	3.30	256.51	2,796.91	-1.60	-2.73	-2.73	0.45	0.44	-1.03	
2,812.71	3.36	256.39	2,810.45	-1.78	-3.49	-3.49	0.45	0.44	-0.88	
2,826.29	3.43	256.32	2,824.01	-1.97	-4.27	-4.28	0.52	0.52	-0.52	
2,839.86	3.48	256.31	2,837.56	-2.17	-5.07	-5.07	0.37	0.37	-0.07	
2,853.43	3.53	256.37	2,851.10	-2.36	-5.88	-5.88	0.37	0.37	0.44	
2,867.00	3.57	256.54	2,864.64	-2.56	-6.69	-6.69	0.30	0.29	1.25	
2,880.43	3.59	256.86	2,878.05	-2.75	-7.51	-7.51	0.21	0.15	2.38	
2,893.86	3.60	257.28	2,891.45	-2.94	-8.33	-8.33	0.21	0.07	3.13	
2,907.29	3.60	257.77	2,904.86	-3.12	-9.15	-9.16	0.23	0.00	3.65	
2,920.71	3.59	258.29	2,918.25	-3.30	-9.98	-9.98	0.25	-0.07	3.87	
2,934.14	3.59	258.83	2,931.65	-3.46	-10.80	-10.80	0.25	0.00	4.02	
2,947.57	3.58	259.36	2,945.06	-3.62	-11.62	-11.63	0.26	-0.07	3.95	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
2,961.00	3.58	259.83	2,958.46	-3.77	-12.45	-12.45	0.22	0.00	3.50	
2,974.57	3.58	260.22	2,972.00	-3.92	-13.28	-13.29	0.18	0.00	2.87	
2,988.14	2.95	263.33	2,985.55	-4.03	-14.05	-14.05	4.82	-4.64	22.92	
3,001.71	1.96	270.86	2,999.11	-4.07	-14.63	-14.63	7.66	-7.30	55.49	
3,015.29	1.36	280.45	3,012.68	-4.04	-15.02	-15.02	4.85	-4.42	70.62	
3,028.86	1.37	280.51	3,026.25	-3.98	-15.34	-15.34	0.07	0.07	0.44	
3,042.43	1.39	280.51	3,039.82	-3.92	-15.66	-15.66	0.15	0.15	0.00	
3,056.00	1.40	280.54	3,053.38	-3.86	-15.98	-15.99	0.07	0.07	0.22	
3,069.43	1.43	280.74	3,066.81	-3.80	-16.31	-16.31	0.23	0.22	1.49	
3,082.86	1.45	281.00	3,080.23	-3.73	-16.64	-16.64	0.16	0.15	1.94	
3,096.29	1.49	281.28	3,093.66	-3.67	-16.98	-16.98	0.30	0.30	2.08	
3,109.71	1.52	281.52	3,107.07	-3.60	-17.32	-17.33	0.23	0.22	1.79	
3,123.14	1.55	281.68	3,120.50	-3.53	-17.67	-17.68	0.23	0.22	1.19	
3,136.57	1.58	281.69	3,133.92	-3.45	-18.03	-18.04	0.22	0.22	0.07	
3,150.00	1.61	281.47	3,147.35	-3.38	-18.40	-18.40	0.23	0.22	-1.64	
3,164.86	1.64	280.81	3,162.20	-3.30	-18.81	-18.82	0.24	0.20	-4.44	
3,179.71	1.66	279.92	3,177.05	-3.22	-19.23	-19.24	0.22	0.13	-5.99	
3,194.57	1.68	278.90	3,191.90	-3.15	-19.66	-19.66	0.24	0.13	-6.86	
3,209.43	1.70	277.81	3,206.75	-3.08	-20.10	-20.10	0.25	0.13	-7.34	
3,224.29	1.72	276.68	3,221.61	-3.03	-20.54	-20.54	0.26	0.13	-7.60	
3,239.14	1.74	275.53	3,236.45	-2.98	-20.98	-20.98	0.27	0.13	-7.74	
3,254.00	1.76	274.34	3,251.30	-2.94	-21.43	-21.44	0.28	0.13	-8.01	
3,268.25	1.78	272.99	3,265.55	-2.91	-21.87	-21.88	0.32	0.14	-9.47	
3,282.50	1.80	271.70	3,279.79	-2.90	-22.32	-22.32	0.32	0.14	-9.05	
3,296.75	1.83	270.64	3,294.03	-2.89	-22.77	-22.77	0.32	0.21	-7.44	
3,311.00	1.85	269.97	3,308.28	-2.88	-23.23	-23.23	0.21	0.14	-4.70	
3,325.25	1.87	269.90	3,322.52	-2.88	-23.69	-23.69	0.14	0.14	-0.49	
3,339.50	1.88	270.73	3,336.76	-2.88	-24.15	-24.16	0.20	0.07	5.82	
3,353.75	1.89	272.89	3,351.00	-2.87	-24.62	-24.63	0.50	0.07	15.16	
3,368.00	1.89	277.10	3,365.24	-2.83	-25.09	-25.09	0.97	0.00	29.54	
3,381.43	1.90	284.27	3,378.67	-2.74	-25.53	-25.53	1.77	0.07	53.39	
3,394.77	1.95	292.88	3,392.00	-2.60	-25.95	-25.95	2.20	0.37	64.57	
DLWR Mnt Group										
3,394.86	1.95	292.94	3,392.09	-2.60	-25.95	-25.96	2.20	0.53	62.68	
3,408.29	2.04	301.82	3,405.51	-2.38	-26.37	-26.37	2.39	0.67	66.12	
3,421.71	2.19	309.85	3,418.92	-2.09	-26.77	-26.77	2.47	1.12	59.84	
3,435.14	2.36	316.44	3,432.34	-1.73	-27.15	-27.16	2.32	1.27	49.07	
3,448.57	2.54	321.31	3,445.76	-1.30	-27.53	-27.53	2.05	1.34	36.26	
3,462.00	3.32	331.92	3,459.17	-0.72	-27.90	-27.90	7.05	5.81	79.00	
3,475.57	4.55	340.48	3,472.71	0.13	-28.26	-28.26	10.02	9.06	63.08	
3,489.14	5.29	344.08	3,486.23	1.24	-28.62	-28.61	5.91	5.45	26.53	
3,502.71	5.34	344.40	3,499.74	2.45	-28.96	-28.95	0.43	0.37	2.36	
3,516.29	5.40	344.41	3,513.26	3.68	-29.30	-29.29	0.44	0.44	0.07	
3,529.86	5.46	344.25	3,526.77	4.91	-29.65	-29.64	0.46	0.44	-1.18	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
3,543.43	5.51	344.01	3,540.28	6.16	-30.00	-29.99	0.41	0.37	-1.77	
3,557.00	5.54	343.79	3,553.79	7.41	-30.36	-30.35	0.27	0.22	-1.62	
3,570.43	5.54	343.66	3,567.15	8.66	-30.73	-30.72	0.09	0.00	-0.97	
3,583.86	5.52	343.61	3,580.52	9.90	-31.09	-31.08	0.15	-0.15	-0.37	
3,597.29	5.49	343.58	3,593.89	11.14	-31.45	-31.44	0.22	-0.22	-0.22	
3,610.71	5.45	343.56	3,607.25	12.36	-31.82	-31.80	0.30	-0.30	-0.15	
3,624.14	5.42	343.52	3,620.62	13.58	-32.18	-32.16	0.23	-0.22	-0.30	
3,637.57	5.39	343.43	3,633.99	14.80	-32.54	-32.52	0.23	-0.22	-0.67	
3,651.00	5.37	343.28	3,647.36	16.00	-32.90	-32.88	0.18	-0.15	-1.12	
3,664.57	5.37	343.01	3,660.87	17.22	-33.26	-33.25	0.19	0.00	-1.99	
3,678.14	5.38	342.66	3,674.38	18.43	-33.64	-33.62	0.25	0.07	-2.58	
3,691.71	5.40	342.27	3,687.89	19.65	-34.02	-34.00	0.31	0.15	-2.87	
3,705.29	5.43	341.86	3,701.41	20.87	-34.42	-34.40	0.36	0.22	-3.02	
3,718.86	5.45	341.45	3,714.92	22.09	-34.82	-34.80	0.32	0.15	-3.02	
3,732.43	5.47	341.06	3,728.43	23.31	-35.24	-35.21	0.31	0.15	-2.87	
3,746.00	5.47	340.70	3,741.93	24.53	-35.66	-35.64	0.25	0.00	-2.65	
3,759.43	5.47	340.44	3,755.30	25.74	-36.09	-36.06	0.18	0.00	-1.94	
3,772.86	5.45	340.23	3,768.67	26.94	-36.52	-36.49	0.21	-0.15	-1.56	
3,786.29	5.42	340.04	3,782.04	28.14	-36.95	-36.92	0.26	-0.22	-1.41	
3,799.71	5.39	339.86	3,795.40	29.33	-37.38	-37.35	0.26	-0.22	-1.34	
3,813.14	5.36	339.68	3,808.77	30.51	-37.82	-37.79	0.26	-0.22	-1.34	
3,826.57	5.33	339.48	3,822.14	31.68	-38.26	-38.22	0.26	-0.22	-1.49	
3,840.00	5.30	339.24	3,835.52	32.84	-38.69	-38.66	0.28	-0.22	-1.79	
3,853.57	5.27	338.94	3,849.03	34.01	-39.14	-39.10	0.30	-0.22	-2.21	
3,867.14	5.24	338.61	3,862.54	35.17	-39.59	-39.55	0.31	-0.22	-2.43	
3,880.71	5.21	338.27	3,876.06	36.32	-40.04	-40.01	0.32	-0.22	-2.51	
3,894.29	5.18	337.95	3,889.58	37.46	-40.50	-40.46	0.31	-0.22	-2.36	
3,907.86	5.16	337.67	3,903.09	38.59	-40.96	-40.92	0.24	-0.15	-2.06	
3,921.43	5.15	337.48	3,916.61	39.72	-41.43	-41.39	0.15	-0.07	-1.40	
3,935.00	5.14	337.44	3,930.13	40.84	-41.90	-41.85	0.08	-0.07	-0.29	
3,948.57	5.15	337.63	3,943.64	41.97	-42.36	-42.32	0.15	0.07	1.40	
3,962.14	5.17	337.96	3,957.16	43.10	-42.82	-42.78	0.26	0.15	2.43	
3,975.71	5.20	338.36	3,970.67	44.24	-43.28	-43.23	0.35	0.22	2.95	
3,989.29	5.23	338.78	3,984.19	45.39	-43.73	-43.68	0.36	0.22	3.09	
4,002.86	5.28	339.17	3,997.71	46.55	-44.18	-44.13	0.45	0.37	2.87	
4,016.43	5.33	339.51	4,011.22	47.72	-44.62	-44.57	0.44	0.37	2.51	
4,030.00	5.39	339.74	4,024.73	48.91	-45.06	-45.01	0.47	0.44	1.69	
4,043.43	5.64	343.74	4,038.10	50.13	-45.46	-45.41	3.41	1.86	29.78	
4,056.86	6.41	349.04	4,051.45	51.50	-45.79	-45.74	7.07	5.73	39.46	
4,070.29	6.99	349.95	4,064.79	53.04	-46.07	-46.02	4.39	4.32	6.78	
4,083.71	7.11	349.82	4,078.11	54.67	-46.36	-46.31	0.90	0.89	-0.97	
4,097.14	7.23	349.65	4,091.43	56.32	-46.66	-46.60	0.91	0.89	-1.27	
4,110.57	7.34	349.44	4,104.76	57.99	-46.97	-46.91	0.84	0.82	-1.56	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
4,124.00	7.42	349.19	4,118.07	59.69	-47.29	-47.23	0.64	0.60	-1.86
4,137.43	7.46	348.86	4,131.39	61.39	-47.62	-47.56	0.44	0.30	-2.46
4,150.86	7.47	348.50	4,144.71	63.10	-47.97	-47.90	0.36	0.07	-2.68
4,164.29	7.45	348.12	4,158.02	64.81	-48.32	-48.25	0.40	-0.15	-2.83
4,177.71	7.43	347.72	4,171.33	66.51	-48.68	-48.61	0.41	-0.15	-2.98
4,191.14	7.40	347.33	4,184.65	68.20	-49.06	-48.99	0.44	-0.22	-2.90
4,204.57	7.36	346.94	4,197.97	69.88	-49.44	-49.37	0.48	-0.30	-2.90
4,218.00	7.33	346.56	4,211.29	71.56	-49.83	-49.76	0.43	-0.22	-2.83
4,231.57	7.30	346.22	4,224.75	73.23	-50.24	-50.16	0.39	-0.22	-2.51
4,245.14	7.27	345.89	4,238.21	74.90	-50.66	-50.58	0.38	-0.22	-2.43
4,258.71	7.24	345.58	4,251.67	76.57	-51.08	-51.00	0.36	-0.22	-2.28
4,272.29	7.21	345.27	4,265.14	78.22	-51.51	-51.43	0.36	-0.22	-2.28
4,285.86	7.18	344.97	4,278.60	79.86	-51.94	-51.86	0.35	-0.22	-2.21
4,299.43	7.14	344.67	4,292.07	81.49	-52.39	-52.30	0.40	-0.29	-2.21
4,313.00	7.09	344.37	4,305.53	83.11	-52.84	-52.75	0.46	-0.37	-2.21
4,326.43	7.02	344.08	4,318.86	84.70	-53.28	-53.20	0.58	-0.52	-2.16
4,339.86	6.94	343.80	4,332.19	86.27	-53.74	-53.64	0.65	-0.60	-2.08
4,353.29	6.86	343.55	4,345.53	87.82	-54.19	-54.10	0.64	-0.60	-1.86
4,366.71	6.79	343.37	4,358.85	89.35	-54.64	-54.55	0.55	-0.52	-1.34
4,380.14	6.73	343.28	4,372.19	90.86	-55.10	-55.00	0.45	-0.45	-0.67
4,393.57	6.69	343.34	4,385.53	92.36	-55.55	-55.45	0.30	-0.30	0.45
4,407.00	6.69	343.64	4,398.86	93.86	-55.99	-55.89	0.26	0.00	2.23
4,420.57	6.75	344.31	4,412.34	95.39	-56.43	-56.33	0.73	0.44	4.94
4,434.14	6.85	345.16	4,425.81	96.94	-56.85	-56.75	1.05	0.74	6.26
4,447.71	6.97	346.08	4,439.29	98.52	-57.26	-57.16	1.20	0.88	6.78
4,461.29	7.10	346.99	4,452.76	100.14	-57.65	-57.54	1.26	0.96	6.70
4,474.86	7.22	347.81	4,466.23	101.79	-58.01	-57.91	1.16	0.88	6.04
4,488.43	7.32	348.47	4,479.69	103.47	-58.37	-58.26	0.96	0.74	4.86
4,502.00	7.49	349.63	4,493.15	105.19	-58.70	-58.59	1.67	1.25	8.55
4,515.43	8.32	354.44	4,506.45	107.02	-58.95	-58.84	7.90	6.18	35.82
4,528.86	8.86	358.17	4,519.73	109.02	-59.08	-58.96	5.78	4.02	27.77
4,542.29	8.78	357.69	4,533.00	111.07	-59.15	-59.04	0.81	-0.60	-3.57
4,555.71	8.67	357.05	4,546.26	113.11	-59.25	-59.13	1.09	-0.82	-4.77
4,569.14	8.56	356.33	4,559.54	115.12	-59.36	-59.24	1.15	-0.82	-5.36
4,582.57	8.43	355.62	4,572.82	117.09	-59.50	-59.38	1.24	-0.97	-5.29
4,596.00	8.32	355.00	4,586.11	119.04	-59.66	-59.54	1.06	-0.82	-4.62
4,609.57	8.20	354.71	4,599.54	120.99	-59.84	-59.71	0.94	-0.88	-2.14
4,623.14	8.10	354.56	4,612.97	122.90	-60.02	-59.89	0.75	-0.74	-1.11
4,636.71	8.01	354.50	4,626.41	124.79	-60.20	-60.07	0.67	-0.66	-0.44
4,650.29	7.93	354.48	4,639.86	126.67	-60.38	-60.24	0.59	-0.59	-0.15
4,663.86	7.86	354.48	4,653.30	128.52	-60.56	-60.42	0.52	-0.52	0.00
4,677.43	7.79	354.46	4,666.74	130.36	-60.73	-60.60	0.52	-0.52	-0.15
4,691.00	7.74	354.39	4,680.19	132.19	-60.91	-60.77	0.37	-0.37	-0.52



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
4,704.43	7.71	354.23	4,693.50	133.98	-61.09	-60.95	0.27	-0.22	-1.19	
4,717.86	7.70	354.00	4,706.81	135.77	-61.28	-61.13	0.24	-0.07	-1.71	
4,731.29	7.69	353.73	4,720.12	137.56	-61.47	-61.32	0.28	-0.07	-2.01	
4,744.71	7.68	353.43	4,733.41	139.35	-61.67	-61.52	0.31	-0.07	-2.24	
4,758.14	7.68	353.08	4,746.72	141.13	-61.88	-61.73	0.35	0.00	-2.61	
4,771.57	7.67	352.71	4,760.03	142.91	-62.10	-61.95	0.38	-0.07	-2.76	
4,785.00	7.66	352.30	4,773.34	144.68	-62.34	-62.18	0.41	-0.07	-3.05	
4,798.43	7.63	351.84	4,786.65	146.45	-62.58	-62.43	0.51	-0.22	-3.43	
4,811.86	7.59	351.36	4,799.97	148.21	-62.84	-62.69	0.56	-0.30	-3.57	
4,825.29	7.55	350.84	4,813.28	149.96	-63.12	-62.96	0.59	-0.30	-3.87	
4,838.71	7.50	350.31	4,826.58	151.69	-63.40	-63.24	0.64	-0.37	-3.95	
4,852.14	7.45	349.76	4,839.90	153.42	-63.71	-63.54	0.65	-0.37	-4.10	
4,865.57	7.40	349.19	4,853.22	155.12	-64.02	-63.86	0.66	-0.37	-4.24	
4,879.00	7.35	348.62	4,866.54	156.81	-64.35	-64.19	0.66	-0.37	-4.24	
4,892.43	7.29	348.07	4,879.86	158.49	-64.70	-64.53	0.69	-0.45	-4.10	
4,905.86	7.23	347.52	4,893.18	160.15	-65.06	-64.89	0.68	-0.45	-4.10	
4,919.29	7.18	346.96	4,906.50	161.79	-65.43	-65.26	0.64	-0.37	-4.17	
4,932.71	7.12	346.40	4,919.82	163.42	-65.82	-65.64	0.69	-0.45	-4.17	
4,946.14	7.07	345.83	4,933.15	165.03	-66.21	-66.04	0.64	-0.37	-4.24	
4,959.57	7.02	345.25	4,946.47	166.62	-66.62	-66.45	0.65	-0.37	-4.32	
4,973.00	6.99	344.67	4,959.80	168.20	-67.05	-66.87	0.57	-0.22	-4.32	
4,986.57	6.96	344.10	4,973.27	169.79	-67.49	-67.32	0.56	-0.22	-4.20	
5,000.14	6.94	343.53	4,986.74	171.37	-67.95	-67.77	0.53	-0.15	-4.20	
5,013.71	6.93	342.98	5,000.21	172.94	-68.42	-68.24	0.49	-0.07	-4.05	
5,027.29	6.92	342.44	5,013.70	174.50	-68.91	-68.73	0.49	-0.07	-3.98	
5,040.86	6.90	341.93	5,027.17	176.05	-69.41	-69.22	0.48	-0.15	-3.76	
5,054.43	6.88	341.48	5,040.64	177.60	-69.92	-69.73	0.42	-0.15	-3.32	
5,068.00	6.84	341.08	5,054.11	179.13	-70.44	-70.25	0.46	-0.29	-2.95	
5,081.43	6.79	340.82	5,067.45	180.64	-70.96	-70.77	0.44	-0.37	-1.94	
5,094.86	6.72	340.64	5,080.78	182.13	-71.48	-71.29	0.54	-0.52	-1.34	
5,108.29	6.64	340.53	5,094.12	183.61	-72.00	-71.81	0.60	-0.60	-0.82	
5,121.71	6.58	340.47	5,107.45	185.06	-72.52	-72.32	0.45	-0.45	-0.45	
5,135.14	6.52	340.48	5,120.80	186.51	-73.03	-72.83	0.45	-0.45	0.07	
5,148.57	6.48	340.57	5,134.14	187.94	-73.54	-73.34	0.31	-0.30	0.67	
5,162.00	6.48	340.75	5,147.48	189.37	-74.04	-73.84	0.15	0.00	1.34	
5,175.57	6.52	341.11	5,160.97	190.82	-74.54	-74.34	0.42	0.29	2.65	
5,189.14	6.60	341.54	5,174.45	192.29	-75.04	-74.83	0.69	0.59	3.17	
5,202.71	6.69	341.98	5,187.93	193.78	-75.53	-75.32	0.76	0.66	3.24	
5,216.29	6.80	342.40	5,201.41	195.30	-76.02	-75.81	0.89	0.81	3.09	
5,229.86	6.90	342.74	5,214.89	196.84	-76.50	-76.29	0.80	0.74	2.51	
5,243.43	7.00	342.97	5,228.36	198.41	-76.98	-76.78	0.76	0.74	1.69	
5,257.00	7.08	343.00	5,241.82	200.00	-77.47	-77.26	0.59	0.59	0.22	
5,270.43	7.63	345.71	5,255.14	201.66	-77.93	-77.72	4.84	4.10	20.18	
5,283.86	8.37	350.58	5,268.44	203.49	-78.31	-78.10	7.47	5.51	36.26	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
5,297.29	8.76	352.88	5,281.72	205.47	-78.60	-78.38	3.86	2.90	17.13	
5,310.71	8.76	352.17	5,294.99	207.49	-78.87	-78.65	0.81	0.00	-5.29	
5,324.14	8.75	351.39	5,308.26	209.52	-79.16	-78.94	0.89	-0.07	-5.81	
5,337.57	8.74	350.62	5,321.53	211.53	-79.48	-79.26	0.87	-0.07	-5.73	
5,351.00	8.73	349.94	5,334.81	213.54	-79.82	-79.60	0.77	-0.07	-5.06	
5,364.57	8.70	349.48	5,348.22	215.57	-80.19	-79.96	0.56	-0.22	-3.39	
5,378.14	8.66	349.16	5,361.64	217.58	-80.57	-80.34	0.46	-0.29	-2.36	
5,391.71	8.63	348.93	5,375.05	219.58	-80.96	-80.73	0.34	-0.22	-1.69	
5,405.29	8.60	348.76	5,388.48	221.58	-81.35	-81.12	0.29	-0.22	-1.25	
5,418.86	8.57	348.62	5,401.90	223.56	-81.75	-81.51	0.27	-0.22	-1.03	
5,432.43	8.54	348.50	5,415.31	225.54	-82.15	-81.91	0.26	-0.22	-0.88	
5,446.00	8.52	348.38	5,428.73	227.51	-82.55	-82.31	0.20	-0.15	-0.88	
5,459.43	8.50	348.25	5,442.02	229.46	-82.95	-82.71	0.21	-0.15	-0.97	
5,472.86	8.48	348.12	5,455.30	231.40	-83.36	-83.12	0.21	-0.15	-0.97	
5,486.29	8.47	347.99	5,468.58	233.34	-83.77	-83.52	0.16	-0.07	-0.97	
5,499.71	8.46	347.86	5,481.86	235.27	-84.18	-83.94	0.16	-0.07	-0.97	
5,513.14	8.44	347.74	5,495.14	237.20	-84.60	-84.35	0.20	-0.15	-0.89	
5,526.57	8.42	347.63	5,508.43	239.12	-85.02	-84.77	0.19	-0.15	-0.82	
5,540.00	8.40	347.55	5,521.71	241.04	-85.44	-85.19	0.17	-0.15	-0.60	
5,553.43	8.36	347.49	5,535.00	242.95	-85.86	-85.61	0.30	-0.30	-0.45	
5,566.86	8.32	347.46	5,548.29	244.85	-86.29	-86.03	0.30	-0.30	-0.22	
5,580.29	8.28	347.44	5,561.58	246.74	-86.71	-86.45	0.30	-0.30	-0.15	
5,593.71	8.23	347.42	5,574.86	248.63	-87.13	-86.87	0.37	-0.37	-0.15	
5,607.14	8.18	347.41	5,588.15	250.50	-87.54	-87.28	0.37	-0.37	-0.07	
5,620.57	8.13	347.39	5,601.44	252.35	-87.96	-87.70	0.37	-0.37	-0.15	
5,634.00	8.07	347.36	5,614.74	254.20	-88.37	-88.11	0.45	-0.45	-0.22	
5,647.43	8.02	347.31	5,628.04	256.04	-88.79	-88.52	0.38	-0.37	-0.37	
5,660.86	7.96	347.25	5,641.34	257.86	-89.20	-88.93	0.45	-0.45	-0.45	
5,674.29	7.90	347.16	5,654.64	259.66	-89.61	-89.33	0.46	-0.45	-0.67	
5,687.71	7.85	347.06	5,667.93	261.46	-90.02	-89.74	0.39	-0.37	-0.75	
5,701.14	7.79	346.94	5,681.24	263.24	-90.43	-90.15	0.46	-0.45	-0.89	
5,714.57	7.73	346.78	5,694.54	265.00	-90.84	-90.56	0.47	-0.45	-1.19	
5,728.00	7.67	346.58	5,707.85	266.75	-91.25	-90.98	0.49	-0.45	-1.49	
5,741.43	7.61	346.32	5,721.16	268.49	-91.67	-91.39	0.52	-0.45	-1.94	
5,754.86	7.55	346.01	5,734.48	270.21	-92.10	-91.81	0.54	-0.45	-2.31	
5,768.29	7.49	345.68	5,747.79	271.91	-92.53	-92.24	0.55	-0.45	-2.46	
5,781.71	7.43	345.34	5,761.10	273.60	-92.96	-92.68	0.56	-0.45	-2.53	
5,795.14	7.38	345.01	5,774.42	275.27	-93.41	-93.12	0.49	-0.37	-2.46	
5,808.57	7.32	344.71	5,787.73	276.93	-93.85	-93.56	0.53	-0.45	-2.23	
5,822.00	7.26	344.45	5,801.06	278.57	-94.31	-94.02	0.51	-0.45	-1.94	
5,835.57	7.20	344.31	5,814.52	280.22	-94.77	-94.47	0.46	-0.44	-1.03	
5,849.14	7.14	344.23	5,827.98	281.85	-95.23	-94.93	0.45	-0.44	-0.59	
5,862.71	7.09	344.18	5,841.45	283.47	-95.68	-95.39	0.37	-0.37	-0.37	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
5,876.29	7.03	344.14	5,854.92	285.07	-96.14	-95.84	0.44	-0.44	-0.29
5,888.46	6.97	344.10	5,867.00	286.50	-96.54	-96.24	0.52	-0.52	-0.37
Lower Brushy Canyon									
5,889.86	6.96	344.09	5,868.39	286.66	-96.59	-96.29	0.52	-0.52	-0.37
5,903.43	6.90	344.01	5,881.86	288.24	-97.04	-96.74	0.45	-0.44	-0.59
5,917.00	6.83	343.87	5,895.34	289.80	-97.49	-97.19	0.53	-0.52	-1.03
5,930.43	6.75	343.63	5,908.67	291.32	-97.93	-97.63	0.63	-0.60	-1.79
5,943.86	6.66	343.33	5,922.01	292.82	-98.38	-98.07	0.72	-0.67	-2.23
5,957.29	6.58	343.03	5,935.35	294.30	-98.83	-98.52	0.65	-0.60	-2.23
5,970.71	6.50	342.77	5,948.68	295.77	-99.28	-98.97	0.64	-0.60	-1.94
5,984.14	6.44	342.60	5,962.03	297.21	-99.73	-99.42	0.47	-0.45	-1.27
5,997.57	6.39	342.60	5,975.37	298.64	-100.18	-99.86	0.37	-0.37	0.00
6,011.00	6.36	342.88	5,988.72	300.07	-100.62	-100.31	0.32	-0.22	2.08
6,024.57	6.39	343.61	6,002.21	301.51	-101.05	-100.74	0.64	0.22	5.38
6,038.14	6.44	344.57	6,015.69	302.97	-101.47	-101.15	0.87	0.37	7.07
6,051.71	6.51	345.63	6,029.18	304.45	-101.86	-101.54	1.02	0.52	7.81
6,065.29	6.58	346.68	6,042.67	305.95	-102.23	-101.91	1.02	0.52	7.73
6,078.86	6.65	347.62	6,056.15	307.47	-102.58	-102.26	0.95	0.52	6.93
6,092.43	6.71	348.36	6,069.63	309.02	-102.91	-102.59	0.77	0.44	5.45
6,106.00	6.96	352.00	6,083.10	310.61	-103.18	-102.86	3.68	1.84	26.82
6,119.43	7.45	358.66	6,096.42	312.28	-103.32	-102.99	7.20	3.65	49.59
6,132.86	7.59	1.15	6,109.74	314.04	-103.32	-102.99	2.64	1.04	18.54
6,146.29	7.53	0.56	6,123.05	315.81	-103.29	-102.96	0.73	-0.45	-4.39
6,159.71	7.46	359.82	6,136.36	317.56	-103.29	-102.95	0.89	-0.52	-5.51
6,173.14	7.38	358.99	6,149.67	319.29	-103.31	-102.97	1.00	-0.60	-6.18
6,175.49	7.36	358.85	6,152.00	319.59	-103.31	-102.98	1.03	-0.67	-6.04
Bone Spring Lime									
6,186.57	7.29	358.17	6,162.99	321.01	-103.35	-103.01	1.03	-0.67	-6.12
6,200.00	7.20	357.45	6,176.32	322.70	-103.41	-103.07	0.95	-0.67	-5.36
6,213.43	7.09	357.07	6,189.64	324.37	-103.49	-103.15	0.89	-0.82	-2.83
6,226.86	6.97	356.84	6,202.97	326.01	-103.58	-103.24	0.92	-0.89	-1.71
6,240.29	6.86	356.71	6,216.30	327.62	-103.67	-103.33	0.83	-0.82	-0.97
6,253.71	6.75	356.64	6,229.63	329.21	-103.76	-103.42	0.82	-0.82	-0.52
6,267.14	6.64	356.60	6,242.97	330.77	-103.85	-103.51	0.82	-0.82	-0.30
6,280.57	6.54	356.56	6,256.31	332.31	-103.95	-103.60	0.75	-0.74	-0.30
6,294.00	6.45	356.51	6,269.65	333.83	-104.04	-103.69	0.67	-0.67	-0.37
6,307.57	6.37	356.39	6,283.14	335.34	-104.13	-103.78	0.60	-0.59	-0.88
6,321.14	6.31	356.24	6,296.62	336.84	-104.23	-103.88	0.46	-0.44	-1.11
6,334.71	6.24	356.06	6,310.11	338.32	-104.33	-103.97	0.54	-0.52	-1.33
6,348.29	6.19	355.83	6,323.61	339.78	-104.43	-104.08	0.41	-0.37	-1.69
6,361.86	6.13	355.56	6,337.11	341.23	-104.54	-104.18	0.49	-0.44	-1.99
6,375.43	6.06	355.23	6,350.60	342.67	-104.66	-104.30	0.58	-0.52	-2.43
6,389.00	5.99	354.84	6,364.09	344.09	-104.78	-104.42	0.60	-0.52	-2.87
6,402.43	5.90	354.37	6,377.45	345.47	-104.91	-104.55	0.76	-0.67	-3.50



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
6,415.86	5.81	353.83	6,390.81	346.84	-105.05	-104.69	0.79	-0.67	-4.02
6,429.29	5.72	353.25	6,404.17	348.18	-105.20	-104.84	0.80	-0.67	-4.32
6,442.71	5.63	352.64	6,417.53	349.49	-105.37	-105.00	0.81	-0.67	-4.55
6,456.14	5.57	352.04	6,430.89	350.79	-105.54	-105.17	0.62	-0.45	-4.47
6,469.57	5.54	351.48	6,444.26	352.08	-105.73	-105.36	0.46	-0.22	-4.17
6,483.00	5.55	351.02	6,457.63	353.36	-105.92	-105.55	0.34	0.07	-3.43
6,496.43	5.63	350.70	6,470.99	354.65	-106.13	-105.76	0.64	0.60	-2.38
6,509.86	5.75	350.45	6,484.36	355.97	-106.35	-105.98	0.91	0.89	-1.86
6,523.29	5.90	350.24	6,497.72	357.31	-106.58	-106.21	1.13	1.12	-1.56
6,536.71	6.05	350.02	6,511.07	358.69	-106.82	-106.44	1.13	1.12	-1.64
6,550.14	6.20	349.76	6,524.42	360.10	-107.07	-106.69	1.14	1.12	-1.94
6,563.57	6.33	349.42	6,537.77	361.54	-107.34	-106.96	1.01	0.97	-2.53
6,577.00	6.96	350.14	6,551.11	363.07	-107.61	-107.23	4.73	4.69	5.36
6,590.57	7.93	351.30	6,564.56	364.80	-107.89	-107.51	7.23	7.15	8.55
6,604.14	8.77	351.94	6,577.99	366.75	-108.18	-107.80	6.23	6.19	4.72
6,617.71	8.77	350.95	6,591.40	368.80	-108.49	-108.10	1.11	0.00	-7.30
6,631.29	8.75	349.82	6,604.82	370.84	-108.83	-108.44	1.28	-0.15	-8.32
6,644.86	8.73	348.68	6,618.24	372.86	-109.22	-108.83	1.28	-0.15	-8.40
6,658.43	8.70	347.61	6,631.65	374.88	-109.64	-109.25	1.22	-0.22	-7.89
6,672.00	8.67	346.74	6,645.06	376.88	-110.09	-109.70	0.99	-0.22	-6.41
6,685.43	8.61	346.31	6,658.34	378.84	-110.56	-110.17	0.66	-0.45	-3.20
6,698.86	8.55	346.11	6,671.62	380.78	-111.04	-110.64	0.50	-0.45	-1.49
6,712.29	8.48	346.07	6,684.90	382.71	-111.52	-111.12	0.52	-0.52	-0.30
6,725.71	8.41	346.12	6,698.18	384.63	-111.99	-111.59	0.52	-0.52	0.37
6,739.14	8.35	346.23	6,711.46	386.53	-112.46	-112.06	0.46	-0.45	0.82
6,752.57	8.28	346.34	6,724.75	388.41	-112.92	-112.52	0.53	-0.52	0.82
6,766.00	8.21	346.41	6,738.04	390.29	-113.38	-112.97	0.53	-0.52	0.52
6,779.43	8.14	346.34	6,751.34	392.14	-113.83	-113.41	0.53	-0.52	-0.52
6,792.86	8.08	346.22	6,764.63	393.98	-114.28	-113.86	0.46	-0.45	-0.89
6,806.29	8.01	346.08	6,777.93	395.81	-114.72	-114.31	0.54	-0.52	-1.04
6,819.71	7.95	345.96	6,791.22	397.61	-115.18	-114.76	0.46	-0.45	-0.89
6,833.14	7.90	345.89	6,804.52	399.41	-115.63	-115.21	0.38	-0.37	-0.52
6,846.57	7.85	345.93	6,817.83	401.20	-116.07	-115.65	0.37	-0.37	0.30
6,860.00	7.81	346.14	6,831.13	402.97	-116.51	-116.09	0.37	-0.30	1.56
6,873.57	7.79	346.62	6,844.57	404.76	-116.95	-116.52	0.50	-0.15	3.54
6,887.14	7.78	347.27	6,858.02	406.55	-117.36	-116.94	0.65	-0.07	4.79
6,900.71	7.78	348.00	6,871.46	408.35	-117.76	-117.33	0.73	0.00	5.38
6,914.29	7.79	348.75	6,884.92	410.15	-118.13	-117.70	0.75	0.07	5.52
6,927.86	7.81	349.47	6,898.36	411.96	-118.48	-118.04	0.74	0.15	5.31
6,941.43	7.83	350.10	6,911.81	413.77	-118.80	-118.37	0.65	0.15	4.64
6,955.00	7.85	350.55	6,925.25	415.60	-119.11	-118.68	0.48	0.15	3.32
6,968.43	8.30	355.78	6,938.55	417.47	-119.34	-118.90	6.41	3.35	38.94
6,981.86	8.73	1.33	6,951.83	419.45	-119.38	-118.94	6.90	3.20	41.33



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
6,995.29	8.92	3.06	6,965.10	421.51	-119.30	-118.86	2.43	1.41	12.88	
7,008.71	8.99	2.71	6,978.36	423.60	-119.20	-118.76	0.66	0.52	-2.61	
7,022.14	9.05	2.29	6,991.62	425.70	-119.11	-118.66	0.66	0.45	-3.13	
7,035.57	9.12	1.86	7,004.88	427.82	-119.03	-118.58	0.73	0.52	-3.20	
7,049.00	9.16	1.46	7,018.14	429.95	-118.97	-118.52	0.56	0.30	-2.98	
7,062.57	9.16	1.15	7,031.54	432.11	-118.92	-118.47	0.36	0.00	-2.28	
7,076.14	9.15	0.91	7,044.94	434.27	-118.88	-118.43	0.29	-0.07	-1.77	
7,089.71	9.11	0.72	7,058.33	436.43	-118.85	-118.39	0.37	-0.29	-1.40	
7,103.29	9.07	0.57	7,071.74	438.57	-118.83	-118.37	0.34	-0.29	-1.10	
7,116.86	9.02	0.46	7,085.15	440.70	-118.81	-118.35	0.39	-0.37	-0.81	
7,130.43	8.97	0.40	7,098.55	442.83	-118.79	-118.33	0.37	-0.37	-0.44	
7,144.00	8.91	0.40	7,111.95	444.94	-118.78	-118.31	0.44	-0.44	0.00	
7,157.43	8.86	0.48	7,125.22	447.01	-118.76	-118.29	0.38	-0.37	0.60	
7,170.86	8.81	0.61	7,138.49	449.07	-118.74	-118.27	0.40	-0.37	0.97	
7,183.40	8.75	0.77	7,150.89	450.99	-118.72	-118.25	0.49	-0.45	1.27	
00-SJ 32 3H (CH-32-133H)										
7,184.29	8.75	0.78	7,151.77	451.12	-118.72	-118.24	0.49	-0.45	1.27	
7,197.71	8.69	0.97	7,165.03	453.16	-118.68	-118.21	0.50	-0.45	1.42	
7,211.14	8.62	1.18	7,178.31	455.18	-118.65	-118.17	0.57	-0.52	1.56	
7,224.57	8.53	1.39	7,191.59	457.18	-118.60	-118.12	0.71	-0.67	1.56	
7,238.00	8.43	1.60	7,204.87	459.16	-118.55	-118.07	0.78	-0.74	1.56	
7,251.57	8.29	1.77	7,218.30	461.13	-118.49	-118.01	1.05	-1.03	1.25	
7,265.14	8.13	1.92	7,231.73	463.07	-118.43	-117.95	1.19	-1.18	1.11	
7,278.71	7.96	2.04	7,245.16	464.97	-118.36	-117.88	1.26	-1.25	0.88	
7,292.29	7.77	2.12	7,258.62	466.82	-118.30	-117.81	1.40	-1.40	0.59	
7,305.86	7.57	2.15	7,272.06	468.63	-118.23	-117.74	1.47	-1.47	0.22	
7,319.43	7.36	2.08	7,285.52	470.39	-118.16	-117.67	1.55	-1.55	-0.52	
7,333.00	7.13	1.87	7,298.98	472.10	-118.11	-117.61	1.71	-1.69	-1.55	
7,346.43	6.87	1.40	7,312.31	473.74	-118.06	-117.56	1.98	-1.94	-3.50	
7,359.86	6.61	0.78	7,325.65	475.32	-118.03	-117.53	2.01	-1.94	-4.62	
7,373.29	6.35	0.06	7,338.99	476.83	-118.02	-117.52	2.03	-1.94	-5.36	
7,386.71	6.10	359.34	7,352.33	478.29	-118.02	-117.52	1.95	-1.86	-5.37	
7,400.14	5.88	358.70	7,365.69	479.69	-118.05	-117.55	1.71	-1.64	-4.77	
7,413.57	5.70	358.32	7,379.05	481.04	-118.08	-117.58	1.37	-1.34	-2.83	
7,427.00	5.58	358.41	7,392.42	482.36	-118.12	-117.62	0.90	-0.89	0.67	
7,440.57	5.57	359.34	7,405.92	483.68	-118.15	-117.64	0.67	-0.07	6.85	
7,454.14	5.63	0.68	7,419.43	485.00	-118.15	-117.64	1.06	0.44	9.87	
7,467.71	5.73	2.19	7,432.93	486.35	-118.11	-117.60	1.33	0.74	11.13	
7,481.29	5.85	3.69	7,446.44	487.71	-118.04	-117.53	1.42	0.88	11.05	
7,494.86	5.98	5.05	7,459.94	489.11	-117.94	-117.42	1.41	0.96	10.02	
7,508.43	6.08	6.18	7,473.43	490.53	-117.80	-117.28	1.14	0.74	8.33	
7,512.02	6.21	7.24	7,477.00	490.91	-117.75	-117.24	4.85	3.68	29.45	
1st Bone Spring SD										
7,522.00	6.59	9.95	7,486.92	492.01	-117.58	-117.07	4.85	3.79	27.18	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
7,535.43	7.40	14.87	7,500.25	493.60	-117.23	-116.71	7.50	6.03	36.63	
7,548.86	8.08	19.20	7,513.56	495.33	-116.70	-116.18	6.67	5.06	32.24	
7,562.29	8.00	18.88	7,526.86	497.11	-116.08	-115.56	0.68	-0.60	-2.38	
7,575.71	7.90	18.37	7,540.15	498.87	-115.49	-114.97	0.91	-0.75	-3.80	
7,589.14	7.79	17.73	7,553.45	500.61	-114.92	-114.40	1.05	-0.82	-4.77	
7,602.57	7.66	17.03	7,566.76	502.33	-114.38	-113.86	1.19	-0.97	-5.21	
7,616.00	7.53	16.32	7,580.07	504.03	-113.87	-113.35	1.19	-0.97	-5.29	
7,629.57	7.37	15.80	7,593.53	505.72	-113.39	-112.86	1.28	-1.18	-3.83	
7,643.14	7.21	15.34	7,606.99	507.38	-112.93	-112.39	1.26	-1.18	-3.39	
7,656.71	7.05	14.93	7,620.45	509.01	-112.49	-111.95	1.24	-1.18	-3.02	
7,670.29	6.89	14.56	7,633.93	510.60	-112.07	-111.53	1.22	-1.18	-2.72	
7,673.38	6.86	14.49	7,637.00	510.96	-111.97	-111.44	1.14	-1.11	-2.17	
2nd Bone Spring LM										
7,683.86	6.74	14.26	7,647.41	512.16	-111.67	-111.13	1.14	-1.11	-2.22	
7,697.43	6.61	14.05	7,660.89	513.69	-111.28	-110.74	0.97	-0.96	-1.55	
7,711.00	6.49	13.98	7,674.37	515.19	-110.90	-110.37	0.89	-0.88	-0.52	
7,724.43	6.42	14.17	7,687.71	516.66	-110.54	-110.00	0.54	-0.52	1.41	
7,737.86	6.36	14.51	7,701.06	518.10	-110.17	-109.62	0.53	-0.45	2.53	
7,751.29	6.32	14.96	7,714.41	519.54	-109.79	-109.25	0.47	-0.30	3.35	
7,764.71	6.28	15.49	7,727.75	520.96	-109.40	-108.86	0.53	-0.30	3.95	
7,778.14	6.24	16.11	7,741.10	522.37	-109.00	-108.46	0.58	-0.30	4.62	
7,791.57	6.17	16.81	7,754.45	523.76	-108.59	-108.05	0.77	-0.52	5.21	
7,805.00	6.09	17.65	7,767.80	525.13	-108.17	-107.62	0.89	-0.60	6.25	
7,818.57	5.94	18.60	7,781.29	526.48	-107.73	-107.18	1.33	-1.11	7.00	
7,832.14	5.77	19.64	7,794.79	527.79	-107.27	-106.72	1.48	-1.25	7.66	
7,845.71	5.58	20.71	7,808.30	529.05	-106.81	-106.26	1.60	-1.40	7.89	
7,859.29	5.41	21.73	7,821.82	530.26	-106.34	-105.79	1.44	-1.25	7.51	
7,872.86	5.24	22.57	7,835.33	531.43	-105.87	-105.31	1.38	-1.25	6.19	
7,886.43	5.11	23.04	7,848.84	532.56	-105.39	-104.83	1.01	-0.96	3.46	
7,900.00	5.04	22.89	7,862.36	533.66	-104.92	-104.36	0.53	-0.52	-1.11	
7,913.43	5.06	21.74	7,875.74	534.76	-104.47	-103.91	0.77	0.15	-8.56	
7,926.86	5.14	20.07	7,889.11	535.87	-104.05	-103.49	1.26	0.60	-12.43	
7,940.29	5.25	18.16	7,902.49	537.02	-103.65	-103.09	1.53	0.82	-14.22	
7,953.71	5.39	16.18	7,915.85	538.21	-103.28	-102.72	1.72	1.04	-14.75	
7,967.14	5.54	14.28	7,929.22	539.44	-102.95	-102.38	1.75	1.12	-14.15	
7,980.57	5.67	12.53	7,942.58	540.72	-102.64	-102.08	1.60	0.97	-13.03	
7,994.00	6.01	10.00	7,955.94	542.06	-102.38	-101.81	3.17	2.53	-18.84	
8,007.57	6.85	6.24	7,969.43	543.56	-102.17	-101.60	6.92	6.19	-27.71	
8,021.14	7.84	3.14	7,982.89	545.29	-102.03	-101.46	7.86	7.30	-22.84	
8,034.71	7.85	2.14	7,996.33	547.14	-101.94	-101.37	1.01	0.07	-7.37	
8,048.29	7.75	1.20	8,009.79	548.98	-101.89	-101.31	1.19	-0.74	-6.92	
8,061.86	7.65	0.32	8,023.23	550.80	-101.86	-101.29	1.14	-0.74	-6.48	
8,075.43	7.53	359.57	8,036.68	552.59	-101.87	-101.29	1.15	-0.88	-5.53	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
8,089.00	7.40	359.05	8,050.14	554.36	-101.89	-101.31	1.08	-0.96	-3.83
8,102.43	7.26	358.99	8,063.46	556.07	-101.92	-101.33	1.04	-1.04	-0.45
8,115.86	7.12	359.20	8,076.78	557.75	-101.94	-101.36	1.06	-1.04	1.56
8,129.29	6.97	359.61	8,090.11	559.40	-101.96	-101.37	1.18	-1.12	3.05
8,142.71	6.82	0.17	8,103.44	561.01	-101.96	-101.38	1.22	-1.12	4.17
8,156.14	6.68	0.84	8,116.77	562.59	-101.95	-101.36	1.20	-1.04	4.99
8,169.57	6.53	1.61	8,130.11	564.13	-101.92	-101.33	1.30	-1.12	5.73
8,183.00	6.38	2.45	8,143.46	565.64	-101.86	-101.27	1.32	-1.12	6.25
8,196.57	6.22	3.20	8,156.95	567.13	-101.79	-101.20	1.33	-1.18	5.53
8,210.14	6.06	3.98	8,170.44	568.58	-101.70	-101.10	1.33	-1.18	5.75
8,223.71	5.92	4.74	8,183.93	569.99	-101.59	-101.00	1.19	-1.03	5.60
8,237.29	5.78	5.46	8,197.44	571.37	-101.47	-100.87	1.16	-1.03	5.30
8,246.90	5.70	5.90	8,207.00	572.32	-101.37	-100.77	0.93	-0.81	4.54
2nd Bone Spring SD									
8,250.86	5.67	6.08	8,210.95	572.71	-101.33	-100.73	0.93	-0.81	4.63
8,264.43	5.59	6.51	8,224.45	574.04	-101.19	-100.59	0.67	-0.59	3.17
8,278.00	5.55	6.62	8,237.96	575.34	-101.04	-100.43	0.31	-0.29	0.81
8,291.43	5.60	6.27	8,251.32	576.64	-100.89	-100.29	0.45	0.37	-2.61
8,304.86	5.69	5.66	8,264.69	577.96	-100.75	-100.15	0.81	0.67	-4.54
8,318.29	5.81	4.91	8,278.05	579.30	-100.63	-100.02	1.05	0.89	-5.58
8,331.71	5.95	4.09	8,291.40	580.67	-100.52	-99.91	1.22	1.04	-6.11
8,345.14	6.08	3.25	8,304.76	582.07	-100.43	-99.82	1.17	0.97	-6.25
8,358.57	6.19	2.42	8,318.11	583.50	-100.36	-99.75	1.05	0.82	-6.18
8,372.00	6.34	1.61	8,331.46	584.97	-100.31	-99.70	1.30	1.12	-6.03
8,385.43	7.31	0.89	8,344.79	586.56	-100.27	-99.66	7.25	7.22	-5.36
8,398.86	8.16	0.59	8,358.10	588.37	-100.25	-99.64	6.34	6.33	-2.23
8,412.29	8.09	359.92	8,371.40	590.27	-100.24	-99.63	0.88	-0.52	-4.99
8,425.71	8.00	359.21	8,384.68	592.15	-100.26	-99.64	1.00	-0.67	-5.29
8,439.14	7.88	358.50	8,397.98	594.00	-100.29	-99.67	1.15	-0.89	-5.29
8,452.57	7.75	357.82	8,411.29	595.83	-100.35	-99.73	1.19	-0.97	-5.06
8,466.00	7.59	357.22	8,424.60	597.62	-100.43	-99.80	1.33	-1.19	-4.47
8,479.57	7.41	356.85	8,438.05	599.39	-100.52	-99.89	1.37	-1.33	-2.73
8,493.14	7.20	356.60	8,451.51	601.11	-100.62	-99.99	1.57	-1.55	-1.84
8,506.71	6.99	356.47	8,464.98	602.78	-100.72	-100.09	1.55	-1.55	-0.96
8,520.29	6.77	356.44	8,478.46	604.41	-100.82	-100.19	1.62	-1.62	-0.22
8,533.86	6.55	356.52	8,491.94	605.98	-100.92	-100.28	1.62	-1.62	0.59
8,547.43	6.32	356.77	8,505.42	607.50	-101.01	-100.37	1.71	-1.69	1.84
8,561.00	6.10	357.23	8,518.92	608.96	-101.09	-100.45	1.66	-1.62	3.39
8,574.43	5.89	357.96	8,532.27	610.36	-101.14	-100.50	1.66	-1.56	5.44
8,584.21	5.74	358.64	8,542.00	611.35	-101.17	-100.53	1.72	-1.57	7.00
3rd Bone Spring LM									
8,587.86	5.68	358.91	8,545.63	611.72	-101.18	-100.54	1.72	-1.56	7.26
8,601.29	5.49	0.03	8,559.00	613.02	-101.19	-100.55	1.63	-1.41	8.34
8,614.71	5.32	1.23	8,572.36	614.29	-101.18	-100.54	1.52	-1.27	8.94



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
8,628.14	5.18	2.42	8,585.73	615.51	-101.14	-100.50	1.32	-1.04	8.86	
8,641.57	5.09	3.49	8,599.11	616.71	-101.08	-100.43	0.98	-0.67	7.97	
8,655.00	5.06	4.26	8,612.49	617.90	-101.00	-100.35	0.55	-0.22	5.73	
8,668.57	5.12	4.59	8,626.00	619.10	-100.91	-100.26	0.49	0.44	2.43	
8,682.14	5.24	4.66	8,639.52	620.32	-100.81	-100.16	0.89	0.88	0.52	
8,695.71	5.40	4.57	8,653.03	621.58	-100.71	-100.05	1.18	1.18	-0.66	
8,709.29	5.56	4.39	8,666.55	622.87	-100.60	-99.95	1.18	1.18	-1.33	
8,722.86	5.71	4.15	8,680.05	624.20	-100.51	-99.85	1.12	1.11	-1.77	
8,736.43	5.84	3.90	8,693.55	625.56	-100.41	-99.75	0.98	0.96	-1.84	
8,750.00	6.33	3.43	8,707.05	627.00	-100.32	-99.66	3.63	3.61	-3.46	
8,763.43	7.21	3.60	8,720.38	628.58	-100.22	-99.56	6.55	6.55	1.27	
8,776.86	7.72	4.38	8,733.70	630.32	-100.10	-99.44	3.87	3.80	5.81	
8,790.29	7.57	4.13	8,747.01	632.10	-99.97	-99.30	1.14	-1.12	-1.86	
8,803.71	7.38	3.84	8,760.32	633.84	-99.84	-99.18	1.44	-1.42	-2.16	
8,817.14	7.17	3.50	8,773.64	635.54	-99.74	-99.07	1.60	-1.56	-2.53	
8,830.57	6.94	3.09	8,786.97	637.18	-99.64	-98.97	1.75	-1.71	-3.05	
8,844.00	6.72	2.61	8,800.30	638.78	-99.56	-98.89	1.69	-1.64	-3.57	
8,856.83	6.51	2.07	8,813.05	640.25	-99.50	-98.83	1.71	-1.64	-4.21	
8,869.67	6.32	1.47	8,825.80	641.69	-99.46	-98.78	1.57	-1.48	-4.67	
8,882.50	6.14	0.82	8,838.56	643.08	-99.43	-98.76	1.51	-1.40	-5.07	
8,895.33	5.99	0.19	8,851.32	644.44	-99.42	-98.74	1.28	-1.17	-4.91	
8,908.17	5.87	359.62	8,864.09	645.76	-99.42	-98.74	1.04	-0.93	-4.44	
8,921.00	5.80	359.20	8,876.85	647.07	-99.43	-98.75	0.64	-0.55	-3.27	
8,935.38	5.81	359.05	8,891.16	648.52	-99.45	-98.78	0.13	0.07	-1.04	
8,949.75	5.87	359.07	8,905.45	649.98	-99.48	-98.80	0.42	0.42	0.14	
8,964.13	5.96	359.19	8,919.76	651.47	-99.50	-98.82	0.63	0.63	0.83	
8,978.50	6.08	359.36	8,934.05	652.97	-99.52	-98.84	0.84	0.84	1.18	
8,992.88	6.19	359.54	8,948.35	654.51	-99.53	-98.85	0.78	0.76	1.25	
9,007.25	6.30	359.70	8,962.63	656.07	-99.54	-98.86	0.78	0.77	1.11	
9,015.00	6.51	1.56	8,970.33	656.94	-99.54	-98.85	3.83	2.75	23.95	
KOP: 9015.00' MD, -98.85' VS, 8970.33' TVD										
9,021.63	6.70	3.05	8,976.92	657.70	-99.50	-98.82	3.83	2.82	22.53	
9,036.00	7.61	10.51	8,991.18	659.47	-99.29	-98.60	9.04	6.33	51.91	
9,049.43	8.57	16.42	9,004.47	661.31	-98.84	-98.15	9.45	7.15	44.01	
9,062.86	9.69	19.93	9,017.73	663.33	-98.17	-97.48	9.31	8.34	26.14	
9,076.29	10.76	24.65	9,030.95	665.53	-97.26	-96.57	10.11	7.97	35.15	
9,089.71	11.78	29.15	9,044.11	667.87	-96.08	-95.38	10.03	7.60	33.53	
9,103.14	12.70	32.30	9,057.24	670.31	-94.62	-93.92	8.46	6.85	23.45	
9,116.57	13.57	34.18	9,070.31	672.86	-92.94	-92.24	7.22	6.48	14.00	
9,126.00	14.36	35.25	9,079.46	674.73	-91.65	-90.94	8.84	8.40	11.35	
100 FWL: 9126.00' MD, -90.94' VS, 9079.46' TVD										
9,130.00	14.70	35.67	9,083.34	675.55	-91.07	-90.36	8.84	8.44	10.49	
9,143.57	15.77	38.34	9,096.43	678.39	-88.92	-88.21	9.43	7.89	19.68	
9,157.14	16.91	41.22	9,109.45	681.33	-86.47	-85.76	10.30	8.40	21.22	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
9,170.71	18.16	43.38	9,122.39	684.35	-83.72	-83.00	10.38	9.21	15.92	
9,175.57	18.57	44.41	9,127.00	685.45	-82.66	-81.94	10.70	8.37	21.18	
3rd Bone Spring SD										
9,184.29	19.31	46.15	9,135.25	687.44	-80.65	-79.93	10.70	8.52	19.96	
9,197.86	20.58	47.68	9,148.01	690.60	-77.27	-76.54	10.12	9.36	11.27	
9,211.43	21.21	50.99	9,160.69	693.75	-73.59	-72.87	9.86	4.64	24.39	
9,225.00	21.98	53.97	9,173.30	696.79	-69.63	-68.90	9.87	5.67	21.96	
9,238.43	22.97	56.96	9,185.71	699.70	-65.40	-64.67	11.26	7.37	22.26	
9,251.86	24.00	59.79	9,198.03	702.50	-60.85	-60.11	11.37	7.67	21.07	
9,265.29	25.08	62.46	9,210.25	705.19	-55.96	-55.22	11.52	8.04	19.88	
9,278.71	26.22	64.87	9,222.35	707.77	-50.76	-50.01	11.51	8.49	17.96	
9,292.14	27.25	67.27	9,234.34	710.21	-45.23	-44.49	11.11	7.67	17.87	
9,305.57	28.13	69.86	9,246.23	712.49	-39.42	-38.68	11.10	6.55	19.29	
9,319.00	29.17	72.00	9,258.02	714.59	-33.34	-32.59	10.88	7.74	15.93	
9,332.57	29.99	74.70	9,269.82	716.51	-26.92	-26.17	11.53	6.04	19.90	
9,346.14	31.26	76.39	9,281.50	718.23	-20.23	-19.48	11.31	9.36	12.45	
9,359.71	32.54	78.12	9,293.02	719.81	-13.24	-12.48	11.59	9.43	12.75	
9,373.29	33.89	79.47	9,304.38	721.26	-5.94	-5.18	11.33	9.94	9.94	
9,386.86	35.24	80.64	9,315.55	722.59	1.64	2.40	11.09	9.95	8.62	
9,400.43	36.46	81.95	9,326.55	723.79	9.50	10.26	10.62	8.99	9.65	
9,414.00	37.64	83.21	9,337.38	724.84	17.61	18.37	10.34	8.70	9.29	
9,427.43	39.04	83.85	9,347.92	725.78	25.89	26.65	10.84	10.42	4.77	
9,440.86	40.30	84.71	9,358.25	726.63	34.42	35.18	10.23	9.38	6.40	
9,454.29	41.63	85.27	9,368.40	727.40	43.19	43.95	10.27	9.90	4.17	
9,467.71	42.98	85.75	9,378.32	728.11	52.19	52.95	10.34	10.06	3.58	
9,481.14	44.09	86.10	9,388.06	728.77	61.42	62.18	8.46	8.27	2.61	
9,492.38	44.89	86.29	9,396.07	729.29	69.27	70.04	7.25	7.15	1.72	
01-FTP (CH-32-133H)										
9,494.57	45.05	86.33	9,397.62	729.39	70.82	71.59	7.25	7.15	1.69	
9,508.00	46.23	86.56	9,407.01	729.98	80.41	81.17	8.87	8.79	1.71	
9,521.43	47.54	86.93	9,416.19	730.54	90.19	90.96	9.96	9.75	2.76	
9,534.86	48.89	87.12	9,425.14	731.06	100.19	100.96	10.11	10.05	1.41	
9,548.29	50.16	87.71	9,433.86	731.52	110.40	111.16	10.03	9.46	4.39	
9,561.71	51.45	88.33	9,442.34	731.88	120.79	121.56	10.26	9.61	4.62	
9,575.14	52.58	88.52	9,450.60	732.17	131.37	132.14	8.49	8.41	1.41	
9,588.57	53.64	88.14	9,458.67	732.48	142.11	142.88	8.21	7.89	-2.83	
9,602.00	54.88	87.48	9,466.51	732.90	153.00	153.77	10.06	9.23	-4.91	
9,615.57	56.16	86.90	9,474.19	733.45	164.18	164.94	10.07	9.43	-4.27	
9,629.14	57.59	86.29	9,481.61	734.12	175.52	176.29	11.19	10.54	-4.50	
9,642.71	59.04	85.65	9,488.74	734.94	187.04	187.81	11.41	10.69	-4.72	
9,656.29	60.57	85.30	9,495.57	735.86	198.74	199.51	11.48	11.27	-2.58	
9,669.86	62.13	85.20	9,502.07	736.85	210.61	211.38	11.51	11.50	-0.74	
9,683.43	63.70	85.24	9,508.25	737.86	222.64	223.42	11.57	11.57	0.29	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
9,697.00	65.26	85.52	9,514.10	738.84	234.85	235.62	11.65	11.50	2.06
9,710.57	66.81	86.10	9,519.61	739.75	247.22	247.99	12.07	11.42	4.27
9,724.14	68.46	86.21	9,524.77	740.59	259.74	260.51	12.18	12.16	0.81
9,737.71	70.13	86.44	9,529.57	741.40	272.40	273.18	12.41	12.31	1.69
9,751.29	71.82	86.31	9,533.99	742.21	285.22	285.99	12.48	12.44	-0.96
9,764.86	73.13	86.77	9,538.08	742.99	298.13	298.91	10.18	9.65	3.39
9,778.43	74.59	87.16	9,541.85	743.68	311.15	311.93	11.11	10.76	2.87
9,792.00	76.24	87.52	9,545.27	744.29	324.27	325.05	12.43	12.16	2.65
9,805.43	77.91	88.03	9,548.27	744.80	337.35	338.13	12.97	12.43	3.80
9,818.86	79.55	88.67	9,550.90	745.18	350.51	351.29	13.08	12.21	4.77
9,832.29	81.10	89.19	9,553.16	745.43	363.75	364.53	12.16	11.54	3.87
9,845.71	82.75	89.83	9,555.04	745.54	377.03	377.81	13.17	12.30	4.77
9,859.14	84.24	90.15	9,556.56	745.54	390.38	391.16	11.34	11.09	2.38
9,872.57	85.82	90.27	9,557.73	745.49	403.76	404.54	11.80	11.76	0.89
9,886.00	87.59	90.31	9,558.50	745.43	417.16	417.94	13.18	13.18	0.30
9,899.57	89.35	90.35	9,558.86	745.35	430.73	431.51	12.97	12.97	0.29
9,907.00	89.95	90.40	9,558.91	745.30	438.16	438.94	8.06	8.03	0.66
EOC: 9907.00' MD, 438.94' VS, 9558.91' TVD									
9,913.14	90.44	90.44	9,558.88	745.25	444.30	445.08	8.06	8.03	0.66
9,926.71	90.28	90.50	9,558.80	745.14	457.87	458.65	1.26	-1.18	0.44
9,926.99	90.28	90.50	9,558.80	745.14	458.14	458.92	0.00	0.00	0.00
00-LP(CH-32-133H)									
9,940.29	90.11	90.56	9,558.75	745.02	471.45	472.23	1.36	-1.28	0.45
9,953.86	89.94	90.63	9,558.75	744.88	485.02	485.80	1.35	-1.25	0.52
9,967.43	89.81	90.69	9,558.78	744.72	498.58	499.36	1.06	-0.96	0.44
9,981.00	89.73	90.75	9,558.83	744.55	512.15	512.93	0.74	-0.59	0.44
9,994.43	89.74	90.81	9,558.89	744.37	525.58	526.36	0.45	0.07	0.45
10,007.86	89.82	90.85	9,558.95	744.17	539.01	539.79	0.67	0.60	0.30
10,021.29	89.93	90.90	9,558.97	743.97	552.44	553.22	0.90	0.82	0.37
10,034.71	90.06	90.94	9,558.98	743.75	565.86	566.64	1.01	0.97	0.30
10,048.14	90.19	90.98	9,558.95	743.53	579.29	580.06	1.01	0.97	0.30
10,061.57	90.32	91.02	9,558.89	743.29	592.71	593.49	1.01	0.97	0.30
10,075.00	90.41	91.06	9,558.80	743.05	606.14	606.92	0.73	0.67	0.30
10,088.57	90.46	91.11	9,558.70	742.79	619.71	620.49	0.52	0.37	0.37
10,102.14	90.47	91.16	9,558.59	742.52	633.27	634.05	0.38	0.07	0.37
10,115.71	90.46	91.21	9,558.48	742.24	646.84	647.62	0.38	-0.07	0.37
10,129.29	90.45	91.26	9,558.37	741.95	660.42	661.19	0.38	-0.07	0.37
10,142.86	90.43	91.31	9,558.27	741.65	673.98	674.76	0.40	-0.15	0.37
10,156.43	90.42	91.36	9,558.17	741.33	687.55	688.33	0.38	-0.07	0.37
10,170.00	90.42	91.40	9,558.07	741.00	701.12	701.89	0.29	0.00	0.29
10,183.43	90.45	91.43	9,557.96	740.67	714.54	715.32	0.32	0.22	0.22
10,196.86	90.49	91.45	9,557.85	740.33	727.97	728.74	0.33	0.30	0.15
10,210.29	90.53	91.47	9,557.73	739.99	741.39	742.17	0.33	0.30	0.15
10,223.71	90.59	91.48	9,557.60	739.65	754.81	755.58	0.45	0.45	0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
10,237.14	90.64	91.47	9,557.46	739.30	768.23	769.00	0.38	0.37	-0.07	
10,250.57	90.68	91.46	9,557.30	738.96	781.66	782.43	0.31	0.30	-0.07	
10,264.00	90.72	91.43	9,557.14	738.62	795.08	795.85	0.37	0.30	-0.22	
10,277.43	90.73	91.36	9,556.97	738.29	808.51	809.28	0.53	0.07	-0.52	
10,290.86	90.74	91.28	9,556.80	737.98	821.93	822.70	0.60	0.07	-0.60	
10,304.29	90.74	91.19	9,556.62	737.69	835.36	836.13	0.67	0.00	-0.67	
10,317.71	90.75	91.10	9,556.45	737.42	848.77	849.54	0.67	0.07	-0.67	
10,331.14	90.76	91.01	9,556.27	737.18	862.20	862.97	0.67	0.07	-0.67	
10,344.57	90.79	90.93	9,556.09	736.95	875.63	876.40	0.64	0.22	-0.60	
10,358.00	90.85	90.86	9,555.90	736.74	889.05	889.82	0.69	0.45	-0.52	
10,371.57	90.95	90.83	9,555.69	736.54	902.62	903.39	0.77	0.74	-0.22	
10,385.14	91.07	90.81	9,555.45	736.35	916.19	916.96	0.90	0.88	-0.15	
10,398.71	91.21	90.81	9,555.18	736.15	929.75	930.52	1.03	1.03	0.00	
10,412.29	91.35	90.82	9,554.87	735.96	943.33	944.10	1.03	1.03	0.07	
10,425.86	91.49	90.83	9,554.54	735.77	956.89	957.66	1.03	1.03	0.07	
10,439.43	91.62	90.84	9,554.17	735.57	970.46	971.23	0.96	0.96	0.07	
10,453.00	91.72	90.86	9,553.77	735.37	984.02	984.79	0.75	0.74	0.15	
10,466.57	91.78	90.88	9,553.36	735.16	997.58	998.35	0.47	0.44	0.15	
10,480.14	91.81	90.90	9,552.93	734.95	1,011.14	1,011.91	0.27	0.22	0.15	
10,493.71	91.84	90.92	9,552.50	734.73	1,024.70	1,025.47	0.27	0.22	0.15	
10,507.29	91.86	90.94	9,552.06	734.51	1,038.27	1,039.04	0.21	0.15	0.15	
10,520.86	91.88	90.96	9,551.62	734.29	1,051.84	1,052.60	0.21	0.15	0.15	
10,534.43	90.83	90.50	9,551.30	734.12	1,065.40	1,066.17	8.45	-7.74	-3.39	
10,548.00	90.34	90.28	9,551.16	734.02	1,078.97	1,079.74	3.96	-3.61	-1.62	
10,561.43	90.42	90.33	9,551.07	733.95	1,092.40	1,093.17	0.70	0.60	0.37	
10,574.86	90.52	90.39	9,550.96	733.87	1,105.83	1,106.60	0.87	0.74	0.45	
10,588.29	90.63	90.46	9,550.83	733.77	1,119.26	1,120.02	0.97	0.82	0.52	
10,601.71	90.73	90.52	9,550.67	733.65	1,132.68	1,133.44	0.87	0.75	0.45	
10,615.14	90.84	90.57	9,550.48	733.53	1,146.10	1,146.87	0.90	0.82	0.37	
10,628.57	90.93	90.62	9,550.28	733.39	1,159.53	1,160.30	0.77	0.67	0.37	
10,642.00	91.01	90.64	9,550.05	733.24	1,172.96	1,173.73	0.61	0.60	0.15	
10,655.57	91.06	90.63	9,549.80	733.09	1,186.53	1,187.29	0.38	0.37	-0.07	
10,669.14	91.09	90.61	9,549.55	732.94	1,200.09	1,200.86	0.27	0.22	-0.15	
10,682.71	91.11	90.58	9,549.29	732.80	1,213.66	1,214.43	0.27	0.15	-0.22	
10,696.29	91.12	90.54	9,549.02	732.67	1,227.24	1,228.00	0.30	0.07	-0.29	
10,709.86	91.13	90.52	9,548.76	732.54	1,240.80	1,241.57	0.16	0.07	-0.15	
10,723.43	90.41	89.99	9,548.58	732.48	1,254.37	1,255.14	6.59	-5.31	-3.91	
10,737.00	89.69	89.47	9,548.56	732.55	1,267.94	1,268.71	6.54	-5.31	-3.83	
10,750.43	89.71	89.51	9,548.63	732.67	1,281.37	1,282.14	0.33	0.15	0.30	
10,763.86	89.73	89.58	9,548.70	732.77	1,294.80	1,295.57	0.54	0.15	0.52	
10,777.29	89.75	89.66	9,548.76	732.86	1,308.23	1,309.00	0.61	0.15	0.60	
10,790.71	89.78	89.74	9,548.82	732.93	1,321.65	1,322.42	0.64	0.22	0.60	
10,804.14	89.81	89.83	9,548.86	732.98	1,335.08	1,335.85	0.71	0.22	0.67	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
10,817.57	89.84	89.92	9,548.90	733.01	1,348.51	1,349.28	0.71	0.22	0.67	
10,831.00	89.89	90.01	9,548.94	733.02	1,361.94	1,362.71	0.77	0.37	0.67	
10,844.43	89.95	90.10	9,548.96	733.01	1,375.37	1,376.14	0.81	0.45	0.67	
10,857.86	90.03	90.18	9,548.96	732.97	1,388.80	1,389.57	0.84	0.60	0.60	
10,871.29	90.11	90.26	9,548.94	732.92	1,402.23	1,403.00	0.84	0.60	0.60	
10,884.71	90.20	90.35	9,548.90	732.85	1,415.65	1,416.41	0.95	0.67	0.67	
10,898.14	90.29	90.43	9,548.85	732.76	1,429.08	1,429.84	0.90	0.67	0.60	
10,911.57	90.40	90.52	9,548.77	732.65	1,442.51	1,443.27	1.06	0.82	0.67	
10,925.00	90.50	90.62	9,548.66	732.51	1,455.94	1,456.70	1.05	0.74	0.74	
10,938.57	90.63	90.73	9,548.53	732.36	1,469.50	1,470.27	1.25	0.96	0.81	
10,952.14	90.75	90.85	9,548.36	732.17	1,483.07	1,483.84	1.25	0.88	0.88	
10,965.71	90.88	90.97	9,548.17	731.95	1,496.64	1,497.40	1.30	0.96	0.88	
10,979.29	91.00	91.07	9,547.95	731.71	1,510.22	1,510.98	1.15	0.88	0.74	
10,992.86	91.11	91.16	9,547.70	731.45	1,523.78	1,524.55	1.05	0.81	0.66	
11,006.43	91.20	91.22	9,547.42	731.17	1,537.34	1,538.11	0.80	0.66	0.44	
11,020.00	91.27	91.23	9,547.13	730.88	1,550.91	1,551.67	0.52	0.52	0.07	
11,033.67	91.29	91.17	9,546.83	730.59	1,564.57	1,565.34	0.46	0.15	-0.44	
11,047.33	91.28	91.06	9,546.52	730.32	1,578.23	1,578.99	0.81	-0.07	-0.81	
11,061.00	91.25	90.93	9,546.22	730.09	1,591.89	1,592.65	0.98	-0.22	-0.95	
11,074.67	91.22	90.78	9,545.92	729.88	1,605.56	1,606.32	1.12	-0.22	-1.10	
11,088.33	91.19	90.63	9,545.64	729.71	1,619.21	1,619.97	1.12	-0.22	-1.10	
11,102.00	91.17	90.48	9,545.36	729.58	1,632.88	1,633.64	1.11	-0.15	-1.10	
11,115.67	90.04	89.39	9,545.21	729.60	1,646.55	1,647.31	11.48	-8.27	-7.97	
11,129.33	89.79	89.05	9,545.23	729.78	1,660.21	1,660.97	3.09	-1.83	-2.49	
11,143.00	89.81	88.94	9,545.28	730.02	1,673.87	1,674.64	0.82	0.15	-0.80	
11,156.57	89.87	88.86	9,545.32	730.28	1,687.44	1,688.20	0.74	0.44	-0.59	
11,170.14	89.96	88.81	9,545.34	730.56	1,701.01	1,701.77	0.76	0.66	-0.37	
11,183.71	90.06	88.77	9,545.33	730.85	1,714.58	1,715.34	0.79	0.74	-0.29	
11,197.29	90.17	88.75	9,545.31	731.14	1,728.15	1,728.92	0.82	0.81	-0.15	
11,210.86	90.28	88.73	9,545.25	731.44	1,741.72	1,742.48	0.82	0.81	-0.15	
11,224.43	90.40	88.73	9,545.17	731.74	1,755.28	1,756.05	0.88	0.88	0.00	
11,238.00	90.52	88.75	9,545.06	732.04	1,768.85	1,769.62	0.90	0.88	0.15	
11,251.43	90.64	88.78	9,544.93	732.33	1,782.28	1,783.04	0.92	0.89	0.22	
11,264.86	90.75	88.83	9,544.77	732.61	1,795.70	1,796.47	0.90	0.82	0.37	
11,278.29	90.86	88.89	9,544.58	732.87	1,809.13	1,809.90	0.93	0.82	0.45	
11,291.71	90.98	88.95	9,544.36	733.13	1,822.55	1,823.31	1.00	0.89	0.45	
11,305.14	91.10	89.01	9,544.12	733.37	1,835.97	1,836.74	1.00	0.89	0.45	
11,318.57	91.22	89.06	9,543.85	733.59	1,849.40	1,850.16	0.97	0.89	0.37	
11,332.00	91.35	89.11	9,543.54	733.81	1,862.82	1,863.59	1.04	0.97	0.37	
11,345.43	91.49	89.14	9,543.21	734.01	1,876.25	1,877.01	1.07	1.04	0.22	
11,358.86	91.64	89.15	9,542.85	734.21	1,889.67	1,890.44	1.12	1.12	0.07	
11,372.29	91.79	89.16	9,542.44	734.41	1,903.09	1,903.86	1.12	1.12	0.07	
11,385.71	91.94	89.16	9,542.01	734.61	1,916.50	1,917.27	1.12	1.12	0.00	
11,399.14	92.08	89.16	9,541.54	734.80	1,929.92	1,930.69	1.04	1.04	0.00	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
11,412.57	92.11	89.13	9,541.04	735.00	1,943.34	1,944.11	0.32	0.22	-0.22
11,426.00	90.73	88.91	9,540.71	735.23	1,956.77	1,957.54	10.41	-10.28	-1.64
11,439.57	90.47	88.84	9,540.57	735.50	1,970.33	1,971.10	1.98	-1.92	-0.52
11,453.14	90.61	88.81	9,540.44	735.78	1,983.90	1,984.67	1.06	1.03	-0.22
11,466.71	90.74	88.77	9,540.28	736.06	1,997.47	1,998.24	1.00	0.96	-0.29
11,480.29	90.86	88.72	9,540.09	736.36	2,011.04	2,011.81	0.96	0.88	-0.37
11,493.86	90.98	88.67	9,539.87	736.67	2,024.61	2,025.38	0.96	0.88	-0.37
11,507.43	91.09	88.62	9,539.63	736.99	2,038.17	2,038.94	0.89	0.81	-0.37
11,521.00	91.19	88.56	9,539.36	737.33	2,051.73	2,052.50	0.86	0.74	-0.44
11,534.57	91.26	88.50	9,539.07	737.67	2,065.30	2,066.07	0.68	0.52	-0.44
11,548.14	91.31	88.43	9,538.76	738.04	2,078.86	2,079.63	0.63	0.37	-0.52
11,561.71	91.35	88.36	9,538.45	738.42	2,092.42	2,093.19	0.59	0.29	-0.52
11,575.29	91.36	88.28	9,538.13	738.81	2,105.99	2,106.76	0.59	0.07	-0.59
11,588.86	91.06	88.34	9,537.84	739.21	2,119.55	2,120.32	2.25	-2.21	0.44
11,602.43	89.85	88.89	9,537.73	739.54	2,133.11	2,133.89	9.79	-8.92	4.05
11,616.00	89.52	88.99	9,537.81	739.79	2,146.68	2,147.46	2.54	-2.43	0.74
11,629.43	89.31	88.90	9,537.95	740.04	2,160.11	2,160.88	1.70	-1.56	-0.67
11,642.86	89.06	88.80	9,538.14	740.31	2,173.54	2,174.31	2.00	-1.86	-0.74
11,656.29	88.78	88.69	9,538.39	740.60	2,186.96	2,187.73	2.24	-2.08	-0.82
11,669.71	88.50	88.59	9,538.71	740.92	2,200.37	2,201.15	2.22	-2.09	-0.75
11,683.14	88.23	88.50	9,539.09	741.26	2,213.79	2,214.57	2.12	-2.01	-0.67
11,696.57	88.01	88.42	9,539.53	741.62	2,227.21	2,227.99	1.74	-1.64	-0.60
11,710.00	87.86	88.37	9,540.02	742.00	2,240.63	2,241.40	1.18	-1.12	-0.37
11,723.57	87.83	88.35	9,540.53	742.39	2,254.18	2,254.96	0.27	-0.22	-0.15
11,737.14	87.88	88.35	9,541.03	742.78	2,267.74	2,268.51	0.37	0.37	0.00
11,750.71	87.97	88.37	9,541.53	743.17	2,281.29	2,282.07	0.68	0.66	0.15
11,764.29	88.10	88.40	9,541.99	743.55	2,294.86	2,295.64	0.98	0.96	0.22
11,777.86	88.26	88.43	9,542.42	743.92	2,308.42	2,309.19	1.20	1.18	0.22
11,791.43	88.42	88.47	9,542.82	744.29	2,321.98	2,322.75	1.22	1.18	0.29
11,805.00	88.58	88.50	9,543.17	744.65	2,335.54	2,336.31	1.20	1.18	0.22
11,818.43	88.74	88.53	9,543.48	745.00	2,348.96	2,349.74	1.21	1.19	0.22
11,831.86	88.89	88.56	9,543.76	745.34	2,362.38	2,363.16	1.14	1.12	0.22
11,845.29	89.04	88.59	9,544.01	745.67	2,375.80	2,376.58	1.14	1.12	0.22
11,858.71	89.20	88.61	9,544.21	746.00	2,389.22	2,390.00	1.20	1.19	0.15
11,872.14	89.36	88.63	9,544.38	746.32	2,402.64	2,403.42	1.20	1.19	0.15
11,885.57	89.52	88.65	9,544.51	746.64	2,416.07	2,416.85	1.20	1.19	0.15
11,899.00	89.69	88.67	9,544.60	746.96	2,429.50	2,430.28	1.27	1.27	0.15
11,912.57	89.88	88.68	9,544.65	747.27	2,443.06	2,443.84	1.40	1.40	0.07
11,926.14	90.07	88.69	9,544.66	747.58	2,456.63	2,457.41	1.40	1.40	0.07
11,939.71	90.26	88.69	9,544.62	747.89	2,470.19	2,470.98	1.40	1.40	0.00
11,953.29	90.45	88.70	9,544.54	748.20	2,483.77	2,484.55	1.40	1.40	0.07
11,966.86	90.62	88.70	9,544.41	748.51	2,497.34	2,498.12	1.25	1.25	0.00
11,968.08	90.64	88.70	9,544.40	748.54	2,498.55	2,499.33	1.25	1.25	0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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-V2500(CH-32-133H)									
11,980.43	90.79	88.71	9,544.24	748.82	2,510.90	2,511.68	1.25	1.25	0.07
11,994.00	90.92	88.71	9,544.04	749.12	2,524.47	2,525.25	0.96	0.96	0.00
12,007.43	91.01	88.72	9,543.82	749.42	2,537.89	2,538.68	0.67	0.67	0.07
12,020.86	91.07	88.74	9,543.57	749.72	2,551.32	2,552.10	0.47	0.45	0.15
12,034.29	91.12	88.75	9,543.31	750.01	2,564.74	2,565.52	0.38	0.37	0.07
12,047.71	91.17	88.77	9,543.05	750.31	2,578.15	2,578.94	0.40	0.37	0.15
12,061.14	91.22	88.80	9,542.77	750.59	2,591.58	2,592.36	0.43	0.37	0.22
12,074.57	90.58	89.20	9,542.56	750.82	2,605.00	2,605.79	5.62	-4.77	2.98
12,088.00	90.22	89.47	9,542.46	750.98	2,618.43	2,619.22	3.35	-2.68	2.01
12,101.57	90.35	89.54	9,542.39	751.10	2,632.00	2,632.79	1.09	0.96	0.52
12,115.14	90.50	89.63	9,542.29	751.20	2,645.57	2,646.36	1.29	1.11	0.66
12,128.71	90.66	89.71	9,542.16	751.27	2,659.14	2,659.93	1.32	1.18	0.59
12,142.29	90.82	89.80	9,541.98	751.33	2,672.72	2,673.51	1.35	1.18	0.66
12,155.86	90.96	89.86	9,541.77	751.37	2,686.29	2,687.07	1.12	1.03	0.44
12,169.43	91.08	89.90	9,541.53	751.40	2,699.86	2,700.64	0.93	0.88	0.29
12,183.00	91.17	89.90	9,541.26	751.42	2,713.42	2,714.21	0.66	0.66	0.00
12,196.43	91.19	89.83	9,540.99	751.46	2,726.85	2,727.64	0.54	0.15	-0.52
12,209.86	91.17	89.71	9,540.71	751.51	2,740.28	2,741.06	0.91	-0.15	-0.89
12,223.29	91.14	89.58	9,540.44	751.59	2,753.70	2,754.49	0.99	-0.22	-0.97
12,236.71	91.11	89.44	9,540.17	751.71	2,767.12	2,767.91	1.07	-0.22	-1.04
12,250.14	91.10	89.32	9,539.92	751.85	2,780.55	2,781.33	0.90	-0.07	-0.89
12,263.57	90.79	89.51	9,539.69	751.99	2,793.98	2,794.76	2.71	-2.31	1.41
12,277.00	89.61	90.35	9,539.65	752.01	2,807.41	2,808.19	10.79	-8.79	6.25
12,290.57	88.41	90.48	9,539.88	751.91	2,820.97	2,821.76	8.89	-8.84	0.96
12,304.14	88.61	90.47	9,540.23	751.80	2,834.54	2,835.32	1.48	1.47	-0.07
12,317.71	88.84	90.47	9,540.54	751.68	2,848.10	2,848.89	1.69	1.69	0.00
12,331.29	89.08	90.49	9,540.78	751.57	2,861.68	2,862.47	1.77	1.77	0.15
12,344.86	89.34	90.51	9,540.97	751.45	2,875.25	2,876.03	1.92	1.92	0.15
12,358.43	89.59	90.54	9,541.10	751.33	2,888.82	2,889.60	1.86	1.84	0.22
12,372.00	89.82	90.57	9,541.17	751.20	2,902.39	2,903.17	1.71	1.69	0.22
12,385.43	90.02	90.61	9,541.19	751.06	2,915.82	2,916.60	1.52	1.49	0.30
12,398.86	90.20	90.65	9,541.16	750.91	2,929.25	2,930.03	1.37	1.34	0.30
12,412.29	90.36	90.70	9,541.09	750.75	2,942.67	2,943.46	1.25	1.19	0.37
12,425.71	90.50	90.74	9,540.99	750.58	2,956.09	2,956.88	1.08	1.04	0.30
12,439.14	90.63	90.79	9,540.86	750.40	2,969.52	2,970.31	1.04	0.97	0.37
12,452.57	89.69	91.23	9,540.82	750.17	2,982.95	2,983.73	7.73	-7.00	3.28
12,466.00	88.77	91.74	9,541.00	749.82	2,996.37	2,997.16	7.83	-6.85	3.80
12,479.43	88.86	91.79	9,541.28	749.41	3,009.79	3,010.58	0.77	0.67	0.37
12,492.86	88.95	91.84	9,541.54	748.98	3,023.21	3,024.00	0.77	0.67	0.37
12,506.29	89.02	91.88	9,541.78	748.54	3,036.64	3,037.42	0.60	0.52	0.30
12,519.71	89.10	91.93	9,542.00	748.10	3,050.05	3,050.83	0.70	0.60	0.37
12,533.14	89.18	91.97	9,542.20	747.64	3,063.47	3,064.25	0.67	0.60	0.30



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
12,546.57	89.26	92.01	9,542.38	747.18	3,076.89	3,077.67	0.67	0.60	0.30
12,560.00	89.35	92.03	9,542.54	746.70	3,090.31	3,091.09	0.69	0.67	0.15
12,573.57	89.45	92.04	9,542.69	746.22	3,103.87	3,104.65	0.74	0.74	0.07
12,587.14	89.57	92.04	9,542.80	745.74	3,117.43	3,118.21	0.88	0.88	0.00
12,600.71	89.69	92.04	9,542.89	745.25	3,130.99	3,131.77	0.88	0.88	0.00
12,614.29	89.81	92.03	9,542.95	744.77	3,144.56	3,145.34	0.89	0.88	-0.07
12,627.86	89.93	92.02	9,542.98	744.29	3,158.12	3,158.90	0.89	0.88	-0.07
12,641.43	90.05	92.01	9,542.98	743.82	3,171.69	3,172.46	0.89	0.88	-0.07
12,655.00	90.17	92.02	9,542.96	743.34	3,185.25	3,186.02	0.89	0.88	0.07
12,668.43	90.27	92.04	9,542.90	742.86	3,198.67	3,199.44	0.76	0.74	0.15
12,681.86	90.37	92.06	9,542.83	742.38	3,212.09	3,212.87	0.76	0.74	0.15
12,695.29	90.46	92.09	9,542.73	741.90	3,225.51	3,226.29	0.71	0.67	0.22
12,708.71	90.55	92.12	9,542.61	741.40	3,238.92	3,239.70	0.71	0.67	0.22
12,722.14	90.64	92.15	9,542.47	740.90	3,252.34	3,253.11	0.71	0.67	0.22
12,735.57	90.73	92.18	9,542.31	740.40	3,265.76	3,266.53	0.71	0.67	0.22
12,749.00	90.82	92.21	9,542.13	739.88	3,279.18	3,279.95	0.71	0.67	0.22
12,762.57	90.91	92.22	9,541.93	739.36	3,292.74	3,293.51	0.67	0.66	0.07
12,776.14	91.00	92.23	9,541.70	738.83	3,306.30	3,307.07	0.67	0.66	0.07
12,789.71	91.09	92.23	9,541.45	738.30	3,319.85	3,320.62	0.66	0.66	0.00
12,803.29	91.18	92.21	9,541.18	737.78	3,333.42	3,334.19	0.68	0.66	-0.15
12,816.86	91.28	92.18	9,540.89	737.26	3,346.98	3,347.75	0.77	0.74	-0.22
12,830.43	91.39	92.11	9,540.58	736.75	3,360.53	3,361.30	0.96	0.81	-0.52
12,844.00	91.51	92.01	9,540.23	736.26	3,374.09	3,374.86	1.15	0.88	-0.74
12,857.43	91.66	91.84	9,539.86	735.81	3,387.51	3,388.28	1.69	1.12	-1.27
12,870.86	91.81	91.63	9,539.46	735.40	3,400.93	3,401.69	1.92	1.12	-1.56
12,884.29	91.97	91.41	9,539.01	735.05	3,414.34	3,415.11	2.02	1.19	-1.64
12,897.71	92.12	91.17	9,538.53	734.75	3,427.75	3,428.52	2.11	1.12	-1.79
12,911.14	92.25	90.94	9,538.02	734.50	3,441.17	3,441.94	1.97	0.97	-1.71
12,924.57	91.08	90.19	9,537.63	734.37	3,454.59	3,455.36	10.35	-8.71	-5.58
12,938.00	90.11	89.27	9,537.49	734.43	3,468.02	3,468.79	9.95	-7.22	-6.85
12,951.57	90.17	89.05	9,537.46	734.63	3,481.59	3,482.36	1.68	0.44	-1.62
12,965.14	90.20	88.82	9,537.42	734.88	3,495.16	3,495.93	1.71	0.22	-1.69
12,978.71	90.20	88.60	9,537.37	735.19	3,508.72	3,509.49	1.62	0.00	-1.62
12,992.29	90.18	88.38	9,537.32	735.54	3,522.30	3,523.07	1.63	-0.15	-1.62
13,005.86	90.12	88.18	9,537.29	735.95	3,535.86	3,536.63	1.54	-0.44	-1.47
13,019.43	90.00	88.01	9,537.27	736.40	3,549.43	3,550.19	1.53	-0.88	-1.25
13,033.00	89.80	87.88	9,537.30	736.89	3,562.99	3,563.76	1.76	-1.47	-0.96
13,046.43	89.48	87.82	9,537.38	737.39	3,576.41	3,577.18	2.42	-2.38	-0.45
13,059.86	89.10	87.80	9,537.55	737.91	3,589.83	3,590.60	2.83	-2.83	-0.15
13,073.29	88.69	87.81	9,537.81	738.42	3,603.24	3,604.02	3.05	-3.05	0.07
13,086.71	88.29	87.82	9,538.16	738.93	3,616.65	3,617.42	2.98	-2.98	0.07
13,100.14	87.95	87.83	9,538.60	739.44	3,630.06	3,630.84	2.53	-2.53	0.07
13,113.57	86.82	88.91	9,539.21	739.82	3,643.47	3,644.25	11.63	-8.41	8.04
13,127.00	86.50	89.03	9,540.00	740.06	3,656.88	3,657.65	2.54	-2.38	0.89



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
13,140.43	86.45	89.00	9,540.82	740.29	3,670.28	3,671.05	0.43	-0.37	-0.22	
13,153.86	86.48	88.95	9,541.65	740.53	3,683.68	3,684.46	0.43	0.22	-0.37	
13,167.29	86.56	88.89	9,542.46	740.79	3,697.09	3,697.86	0.74	0.60	-0.45	
13,180.71	86.69	88.83	9,543.25	741.05	3,710.48	3,711.25	1.07	0.97	-0.45	
13,194.14	86.87	88.77	9,544.01	741.33	3,723.89	3,724.66	1.41	1.34	-0.45	
13,207.57	87.07	88.71	9,544.72	741.63	3,737.29	3,738.07	1.55	1.49	-0.45	
13,221.00	87.32	88.67	9,545.38	741.94	3,750.70	3,751.48	1.89	1.86	-0.30	
13,234.57	87.63	88.63	9,545.97	742.26	3,764.26	3,765.03	2.30	2.28	-0.29	
13,248.14	87.97	88.61	9,546.50	742.58	3,777.81	3,778.59	2.51	2.51	-0.15	
13,261.71	88.32	88.59	9,546.93	742.91	3,791.37	3,792.15	2.58	2.58	-0.15	
13,275.29	88.67	88.56	9,547.29	743.25	3,804.94	3,805.72	2.59	2.58	-0.22	
13,288.86	89.01	88.51	9,547.57	743.60	3,818.51	3,819.28	2.53	2.51	-0.37	
13,302.43	89.33	88.45	9,547.76	743.96	3,832.07	3,832.85	2.40	2.36	-0.44	
13,316.00	89.59	88.35	9,547.89	744.34	3,845.63	3,846.41	2.05	1.92	-0.74	
13,329.43	89.77	88.19	9,547.97	744.74	3,859.06	3,859.83	1.79	1.34	-1.19	
13,342.86	89.89	88.00	9,548.01	745.19	3,872.48	3,873.26	1.67	0.89	-1.41	
13,356.29	89.98	87.79	9,548.02	745.68	3,885.90	3,886.68	1.70	0.67	-1.56	
13,369.71	90.04	87.59	9,548.02	746.22	3,899.31	3,900.09	1.56	0.45	-1.49	
13,383.14	90.08	87.41	9,548.00	746.81	3,912.73	3,913.51	1.37	0.30	-1.34	
13,396.57	89.22	88.17	9,548.09	747.33	3,926.15	3,926.93	8.55	-6.40	5.66	
13,410.00	88.28	88.97	9,548.38	747.66	3,939.57	3,940.35	9.19	-7.00	5.96	
13,423.57	88.25	88.88	9,548.79	747.92	3,953.13	3,953.91	0.70	-0.22	-0.66	
13,437.14	88.21	88.80	9,549.21	748.19	3,966.69	3,967.47	0.66	-0.29	-0.59	
13,450.71	88.16	88.73	9,549.64	748.48	3,980.25	3,981.03	0.63	-0.37	-0.52	
13,464.29	88.11	88.67	9,550.08	748.79	3,993.82	3,994.60	0.57	-0.37	-0.44	
13,477.86	88.09	88.62	9,550.53	749.11	4,007.38	4,008.16	0.40	-0.15	-0.37	
13,491.43	87.11	89.46	9,551.10	749.34	4,020.93	4,021.72	9.51	-7.22	6.19	
13,505.00	86.07	90.36	9,551.91	749.36	4,034.48	4,035.26	10.13	-7.66	6.63	
13,518.43	85.90	90.64	9,552.85	749.24	4,047.88	4,048.66	2.43	-1.27	2.08	
13,531.86	85.99	90.58	9,553.80	749.10	4,061.27	4,062.05	0.80	0.67	-0.45	
13,545.29	86.09	90.52	9,554.72	748.97	4,074.67	4,075.45	0.87	0.74	-0.45	
13,558.71	86.20	90.45	9,555.63	748.86	4,088.06	4,088.84	0.97	0.82	-0.52	
13,572.14	86.34	90.40	9,556.50	748.76	4,101.46	4,102.24	1.11	1.04	-0.37	
13,585.57	86.49	90.34	9,557.34	748.67	4,114.86	4,115.65	1.20	1.12	-0.45	
13,599.00	86.66	90.30	9,558.14	748.60	4,128.27	4,129.05	1.30	1.27	-0.30	
13,612.43	86.88	90.27	9,558.90	748.53	4,141.68	4,142.46	1.65	1.64	-0.22	
13,625.86	87.11	90.25	9,559.60	748.47	4,155.09	4,155.87	1.72	1.71	-0.15	
13,639.29	87.37	90.23	9,560.25	748.41	4,168.50	4,169.29	1.94	1.94	-0.15	
13,652.71	87.65	90.21	9,560.83	748.36	4,181.91	4,182.69	2.09	2.09	-0.15	
13,666.14	87.94	90.18	9,561.35	748.32	4,195.33	4,196.11	2.17	2.16	-0.22	
13,679.57	88.25	90.15	9,561.80	748.28	4,208.75	4,209.53	2.32	2.31	-0.22	
13,693.00	88.60	90.11	9,562.16	748.25	4,222.18	4,222.96	2.62	2.61	-0.30	
13,706.57	88.99	90.05	9,562.45	748.23	4,235.75	4,236.53	2.91	2.87	-0.44	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
13,720.14	89.39	89.98	9,562.64	748.22	4,249.31	4,250.10	2.99	2.95	-0.52
13,733.71	89.79	89.90	9,562.74	748.24	4,262.88	4,263.66	3.01	2.95	-0.59
13,747.29	90.15	89.83	9,562.75	748.27	4,276.46	4,277.24	2.70	2.65	-0.52
13,760.86	90.45	89.76	9,562.67	748.32	4,290.03	4,290.81	2.27	2.21	-0.52
13,774.43	89.47	90.81	9,562.68	748.25	4,303.60	4,304.38	10.58	-7.22	7.74
13,788.00	89.18	91.17	9,562.84	748.02	4,317.17	4,317.95	3.41	-2.14	2.65
13,801.43	89.14	91.15	9,563.04	747.75	4,330.60	4,331.38	0.33	-0.30	-0.15
13,814.86	89.03	91.14	9,563.26	747.48	4,344.02	4,344.80	0.82	-0.82	-0.07
13,828.29	88.87	91.14	9,563.50	747.21	4,357.45	4,358.23	1.19	-1.19	0.00
13,841.71	88.70	91.14	9,563.79	746.94	4,370.86	4,371.64	1.27	-1.27	0.00
13,855.14	88.54	91.14	9,564.11	746.68	4,384.28	4,385.06	1.19	-1.19	0.00
13,868.57	87.84	91.30	9,564.53	746.39	4,397.70	4,398.48	5.35	-5.21	1.19
13,882.00	87.78	91.27	9,565.05	746.09	4,411.12	4,411.90	0.50	-0.45	-0.22
13,895.57	87.83	91.23	9,565.57	745.79	4,424.68	4,425.46	0.47	0.37	-0.29
13,909.14	87.93	91.17	9,566.07	745.51	4,438.24	4,439.01	0.86	0.74	-0.44
13,922.71	88.07	91.11	9,566.54	745.24	4,451.79	4,452.57	1.12	1.03	-0.44
13,936.29	88.21	91.03	9,566.98	744.99	4,465.36	4,466.14	1.19	1.03	-0.59
13,949.86	88.32	90.96	9,567.39	744.75	4,478.93	4,479.70	0.96	0.81	-0.52
13,963.43	87.82	91.10	9,567.85	744.51	4,492.49	4,493.26	3.83	-3.68	1.03
13,977.00	87.81	91.01	9,568.37	744.26	4,506.04	4,506.82	0.67	-0.07	-0.66
13,990.43	87.67	90.92	9,568.90	744.03	4,519.46	4,520.24	1.24	-1.04	-0.67
14,003.86	87.46	90.82	9,569.47	743.83	4,532.88	4,533.66	1.73	-1.56	-0.74
14,017.29	87.21	90.72	9,570.09	743.65	4,546.29	4,547.07	2.00	-1.86	-0.74
14,030.71	86.96	90.63	9,570.78	743.49	4,559.69	4,560.47	1.98	-1.86	-0.67
14,044.14	86.36	90.90	9,571.56	743.31	4,573.10	4,573.88	4.90	-4.47	2.01
14,057.57	86.16	90.82	9,572.43	743.11	4,586.50	4,587.28	1.60	-1.49	-0.60
14,071.00	86.02	90.74	9,573.35	742.93	4,599.90	4,600.67	1.20	-1.04	-0.60
14,084.57	85.72	90.65	9,574.33	742.76	4,613.43	4,614.21	2.31	-2.21	-0.66
14,098.14	85.78	90.60	9,575.33	742.62	4,626.96	4,627.74	0.57	0.44	-0.37
14,111.71	85.88	90.55	9,576.32	742.48	4,640.50	4,641.27	0.82	0.74	-0.37
14,125.29	86.00	90.50	9,577.28	742.36	4,654.04	4,654.82	0.96	0.88	-0.37
14,138.86	86.12	90.45	9,578.21	742.24	4,667.58	4,668.35	0.96	0.88	-0.37
14,152.43	86.23	90.39	9,579.12	742.14	4,681.12	4,681.89	0.92	0.81	-0.44
14,166.00	86.28	90.33	9,580.00	742.06	4,694.66	4,695.43	0.57	0.37	-0.44
14,179.43	86.08	90.36	9,580.90	741.98	4,708.06	4,708.83	1.51	-1.49	0.22
14,192.86	85.05	91.03	9,581.94	741.82	4,721.45	4,722.22	9.14	-7.67	4.99
14,206.29	84.93	90.93	9,583.11	741.59	4,734.82	4,735.60	1.16	-0.89	-0.74
14,219.71	84.78	90.82	9,584.31	741.38	4,748.19	4,748.96	1.38	-1.12	-0.82
14,233.14	84.64	90.72	9,585.55	741.20	4,761.56	4,762.33	1.28	-1.04	-0.74
14,246.57	84.52	90.62	9,586.82	741.05	4,774.93	4,775.70	1.16	-0.89	-0.74
14,260.00	84.45	90.53	9,588.11	740.91	4,788.30	4,789.07	0.85	-0.52	-0.67
14,273.57	84.47	90.47	9,589.42	740.79	4,801.80	4,802.58	0.46	0.15	-0.44
14,287.14	84.55	90.42	9,590.72	740.69	4,815.31	4,816.08	0.69	0.59	-0.37



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
14,300.71	84.68	90.38	9,591.99	740.60	4,828.82	4,829.59	1.00	0.96	-0.29	
14,314.29	84.82	90.35	9,593.24	740.51	4,842.34	4,843.12	1.05	1.03	-0.22	
14,327.86	84.99	90.32	9,594.44	740.43	4,855.86	4,856.63	1.27	1.25	-0.22	
14,341.43	85.17	90.30	9,595.61	740.36	4,869.38	4,870.15	1.33	1.33	-0.15	
14,355.00	85.35	90.29	9,596.73	740.29	4,882.90	4,883.67	1.33	1.33	-0.07	
14,368.43	85.54	90.28	9,597.79	740.22	4,896.29	4,897.06	1.42	1.41	-0.07	
14,381.86	85.72	90.28	9,598.82	740.16	4,909.68	4,910.45	1.34	1.34	0.00	
14,395.29	85.90	90.28	9,599.80	740.09	4,923.07	4,923.85	1.34	1.34	0.00	
14,408.71	86.07	90.27	9,600.74	740.03	4,936.46	4,937.23	1.27	1.27	-0.07	
14,422.14	86.22	90.26	9,601.64	739.96	4,949.86	4,950.63	1.12	1.12	-0.07	
14,435.57	86.36	90.25	9,602.51	739.90	4,963.26	4,964.03	1.05	1.04	-0.07	
14,449.00	86.45	90.22	9,603.35	739.85	4,976.67	4,977.44	0.71	0.67	-0.22	
14,462.57	86.49	90.16	9,604.19	739.80	4,990.21	4,990.98	0.53	0.29	-0.44	
14,469.22	86.49	90.13	9,604.59	739.79	4,996.85	4,997.62	0.44	0.00	-0.44	
03-V5000(CH-32-133H)										
14,476.14	86.49	90.10	9,605.02	739.77	5,003.75	5,004.53	0.44	0.00	-0.44	
14,489.71	86.48	90.02	9,605.85	739.76	5,017.30	5,018.07	0.59	-0.07	-0.59	
14,503.29	86.46	89.95	9,606.69	739.76	5,030.85	5,031.63	0.54	-0.15	-0.52	
14,516.86	86.26	89.91	9,607.55	739.78	5,044.40	5,045.17	1.50	-1.47	-0.29	
14,530.43	85.60	89.98	9,608.51	739.79	5,057.93	5,058.70	4.89	-4.86	0.52	
14,544.00	85.63	89.92	9,609.55	739.80	5,071.46	5,072.23	0.49	0.22	-0.44	
14,557.43	85.70	89.88	9,610.56	739.83	5,084.85	5,085.63	0.60	0.52	-0.30	
14,570.86	85.80	89.85	9,611.56	739.86	5,098.25	5,099.02	0.78	0.74	-0.22	
14,576.93	85.85	89.84	9,612.00	739.88	5,104.30	5,105.07	0.91	0.89	-0.15	
Wolfcamp A										
14,584.29	85.92	89.83	9,612.53	739.90	5,111.64	5,112.41	0.91	0.89	-0.15	
14,597.71	86.05	89.81	9,613.47	739.94	5,125.03	5,125.80	0.98	0.97	-0.15	
14,611.14	86.18	89.79	9,614.38	739.99	5,138.43	5,139.20	0.98	0.97	-0.15	
14,624.57	86.32	89.77	9,615.26	740.04	5,151.83	5,152.60	1.05	1.04	-0.15	
14,638.00	86.47	89.75	9,616.10	740.09	5,165.23	5,166.00	1.13	1.12	-0.15	
14,651.57	86.61	89.73	9,616.92	740.15	5,178.78	5,179.55	1.04	1.03	-0.15	
14,665.14	86.75	89.70	9,617.71	740.22	5,192.32	5,193.10	1.06	1.03	-0.22	
14,678.71	86.89	89.66	9,618.46	740.30	5,205.87	5,206.65	1.07	1.03	-0.29	
14,692.29	87.03	89.63	9,619.18	740.38	5,219.43	5,220.21	1.05	1.03	-0.22	
14,705.86	87.17	89.61	9,619.86	740.47	5,232.99	5,233.76	1.04	1.03	-0.15	
14,719.43	87.30	89.58	9,620.52	740.57	5,246.54	5,247.31	0.98	0.96	-0.22	
14,733.00	87.44	89.57	9,621.14	740.67	5,260.10	5,260.87	1.03	1.03	-0.07	
14,746.57	87.57	89.56	9,621.73	740.77	5,273.65	5,274.42	0.96	0.96	-0.07	
14,760.14	87.69	89.56	9,622.29	740.87	5,287.21	5,287.98	0.88	0.88	0.00	
14,773.71	87.82	89.57	9,622.83	740.98	5,300.77	5,301.54	0.96	0.96	0.07	
14,787.29	87.94	89.57	9,623.33	741.08	5,314.34	5,315.11	0.88	0.88	0.00	
14,800.86	88.05	89.57	9,623.80	741.18	5,327.90	5,328.67	0.81	0.81	0.00	
14,814.43	88.17	89.56	9,624.25	741.28	5,341.46	5,342.24	0.89	0.88	-0.07	
14,828.00	88.27	89.53	9,624.67	741.39	5,355.03	5,355.80	0.77	0.74	-0.22	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
14,841.57	88.36	89.48	9,625.07	741.51	5,368.59	5,369.36	0.76	0.66	-0.37	
14,855.14	88.45	89.41	9,625.45	741.64	5,382.15	5,382.93	0.84	0.66	-0.52	
14,868.71	88.53	89.34	9,625.81	741.79	5,395.72	5,396.49	0.78	0.59	-0.52	
14,882.29	88.63	89.26	9,626.14	741.95	5,409.29	5,410.07	0.94	0.74	-0.59	
14,895.86	88.73	89.18	9,626.46	742.14	5,422.86	5,423.63	0.94	0.74	-0.59	
14,909.43	88.86	89.11	9,626.74	742.34	5,436.42	5,437.20	1.09	0.96	-0.52	
14,923.00	89.02	89.06	9,626.99	742.56	5,449.99	5,450.76	1.24	1.18	-0.37	
14,936.43	89.23	89.03	9,627.20	742.78	5,463.42	5,464.19	1.58	1.56	-0.22	
14,949.86	89.47	89.01	9,627.35	743.01	5,476.84	5,477.62	1.79	1.79	-0.15	
14,963.29	89.73	89.00	9,627.44	743.24	5,490.27	5,491.05	1.94	1.94	-0.07	
14,976.71	90.00	89.00	9,627.47	743.48	5,503.69	5,504.46	2.01	2.01	0.00	
14,990.14	90.27	89.01	9,627.44	743.71	5,517.12	5,517.89	2.01	2.01	0.07	
15,003.57	90.52	89.02	9,627.35	743.94	5,530.54	5,531.32	1.86	1.86	0.07	
15,017.00	90.75	89.03	9,627.20	744.17	5,543.97	5,544.75	1.71	1.71	0.07	
15,030.43	90.94	89.04	9,627.00	744.40	5,557.40	5,558.17	1.42	1.41	0.07	
15,043.86	91.11	89.05	9,626.76	744.62	5,570.82	5,571.60	1.27	1.27	0.07	
15,057.29	91.26	89.06	9,626.49	744.84	5,584.25	5,585.03	1.12	1.12	0.07	
15,070.71	91.40	89.06	9,626.17	745.06	5,597.66	5,598.44	1.04	1.04	0.00	
15,084.14	91.53	89.05	9,625.83	745.28	5,611.09	5,611.87	0.97	0.97	-0.07	
15,097.57	90.50	89.39	9,625.59	745.47	5,624.51	5,625.29	8.08	-7.67	2.53	
15,111.00	90.33	89.44	9,625.50	745.60	5,637.94	5,638.72	1.32	-1.27	0.37	
15,124.57	90.48	89.34	9,625.40	745.75	5,651.51	5,652.29	1.33	1.11	-0.74	
15,138.14	90.63	89.23	9,625.27	745.92	5,665.08	5,665.86	1.37	1.11	-0.81	
15,151.71	90.77	89.10	9,625.10	746.12	5,678.65	5,679.43	1.41	1.03	-0.96	
15,165.29	90.90	88.96	9,624.90	746.35	5,692.22	5,693.00	1.41	0.96	-1.03	
15,178.86	91.00	88.82	9,624.68	746.61	5,705.79	5,706.57	1.27	0.74	-1.03	
15,192.43	91.07	88.69	9,624.43	746.90	5,719.35	5,720.13	1.09	0.52	-0.96	
15,206.00	91.09	88.58	9,624.18	747.23	5,732.92	5,733.70	0.82	0.15	-0.81	
15,219.43	91.02	88.48	9,623.93	747.57	5,746.34	5,747.12	0.91	-0.52	-0.74	
15,232.86	90.90	88.40	9,623.71	747.94	5,759.77	5,760.55	1.07	-0.89	-0.60	
15,246.29	90.75	88.34	9,623.51	748.32	5,773.19	5,773.97	1.20	-1.12	-0.45	
15,259.71	90.59	88.29	9,623.36	748.71	5,786.60	5,787.38	1.25	-1.19	-0.37	
15,273.14	90.42	88.27	9,623.24	749.12	5,800.02	5,800.81	1.27	-1.27	-0.15	
15,286.57	89.87	88.73	9,623.20	749.47	5,813.45	5,814.23	5.34	-4.10	3.43	
15,300.00	89.60	88.84	9,623.27	749.75	5,826.88	5,827.66	2.17	-2.01	0.82	
15,313.43	89.49	88.91	9,623.37	750.02	5,840.30	5,841.09	0.97	-0.82	0.52	
15,326.86	89.40	89.02	9,623.50	750.26	5,853.73	5,854.51	1.06	-0.67	0.82	
15,340.29	89.30	89.15	9,623.65	750.47	5,867.16	5,867.94	1.22	-0.74	0.97	
15,353.71	89.20	89.29	9,623.83	750.66	5,880.58	5,881.36	1.28	-0.75	1.04	
15,367.14	89.09	89.44	9,624.03	750.81	5,894.00	5,894.79	1.38	-0.82	1.12	
15,380.57	88.95	89.60	9,624.26	750.92	5,907.43	5,908.21	1.58	-1.04	1.19	
15,394.00	88.78	89.76	9,624.53	750.99	5,920.86	5,921.64	1.74	-1.27	1.19	
15,407.57	88.54	89.94	9,624.84	751.03	5,934.42	5,935.21	2.21	-1.77	1.33	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
15,421.14	88.27	90.11	9,625.22	751.02	5,947.99	5,948.77	2.35	-1.99	1.25	
15,434.71	87.97	90.28	9,625.67	750.98	5,961.55	5,962.34	2.54	-2.21	1.25	
15,448.29	87.67	90.44	9,626.18	750.89	5,975.12	5,975.91	2.50	-2.21	1.18	
15,461.86	87.38	90.58	9,626.77	750.77	5,988.68	5,989.46	2.37	-2.14	1.03	
15,475.43	87.10	90.70	9,627.42	750.62	6,002.23	6,003.01	2.24	-2.06	0.88	
15,489.00	86.86	90.77	9,628.14	750.44	6,015.78	6,016.56	1.84	-1.77	0.52	
15,502.43	86.69	90.77	9,628.89	750.26	6,029.19	6,029.97	1.27	-1.27	0.00	
15,515.86	86.55	90.73	9,629.68	750.09	6,042.60	6,043.38	1.08	-1.04	-0.30	
15,529.29	86.45	90.67	9,630.50	749.93	6,056.00	6,056.78	0.87	-0.74	-0.45	
15,542.71	86.37	90.58	9,631.34	749.78	6,069.39	6,070.17	0.90	-0.60	-0.67	
15,556.14	86.31	90.50	9,632.20	749.65	6,082.79	6,083.58	0.74	-0.45	-0.60	
15,569.57	86.29	90.94	9,633.07	749.48	6,096.20	6,096.98	3.27	-0.15	3.28	
15,583.00	86.23	91.78	9,633.95	749.17	6,109.59	6,110.37	6.26	-0.45	6.25	
15,596.43	86.27	91.70	9,634.82	748.76	6,122.99	6,123.77	0.66	0.30	-0.60	
15,609.86	86.34	91.61	9,635.69	748.37	6,136.38	6,137.16	0.85	0.52	-0.67	
15,623.29	86.42	91.53	9,636.54	748.01	6,149.78	6,150.56	0.84	0.60	-0.60	
15,636.71	86.51	91.44	9,637.36	747.66	6,163.17	6,163.95	0.95	0.67	-0.67	
15,650.14	86.60	91.34	9,638.17	747.33	6,176.57	6,177.35	1.00	0.67	-0.74	
15,663.57	86.68	91.24	9,638.96	747.03	6,189.98	6,190.76	0.95	0.60	-0.74	
15,677.00	86.74	91.12	9,639.73	746.76	6,203.38	6,204.16	1.00	0.45	-0.89	
15,690.57	86.76	90.98	9,640.50	746.51	6,216.93	6,217.71	1.04	0.15	-1.03	
15,704.14	86.77	90.84	9,641.26	746.29	6,230.48	6,231.25	1.03	0.07	-1.03	
15,717.71	86.76	90.69	9,642.03	746.11	6,244.02	6,244.80	1.11	-0.07	-1.11	
15,731.29	86.75	90.54	9,642.80	745.97	6,257.58	6,258.36	1.11	-0.07	-1.10	
15,744.86	86.74	90.39	9,643.57	745.86	6,271.13	6,271.90	1.11	-0.07	-1.11	
15,758.43	86.75	90.25	9,644.34	745.78	6,284.68	6,285.45	1.03	0.07	-1.03	
15,772.00	86.76	90.12	9,645.11	745.74	6,298.22	6,299.00	0.96	0.07	-0.96	
15,785.43	86.82	90.01	9,645.86	745.72	6,311.63	6,312.41	0.93	0.45	-0.82	
15,798.86	87.56	90.29	9,646.52	745.69	6,325.05	6,325.82	5.89	5.51	2.08	
15,812.29	87.64	90.20	9,647.08	745.63	6,338.46	6,339.24	0.90	0.60	-0.67	
15,825.71	87.73	90.12	9,647.62	745.59	6,351.87	6,352.65	0.90	0.67	-0.60	
15,839.14	87.81	90.05	9,648.15	745.57	6,365.29	6,366.07	0.79	0.60	-0.52	
15,852.57	87.88	89.97	9,648.65	745.57	6,378.71	6,379.49	0.79	0.52	-0.60	
15,866.00	87.92	89.89	9,649.14	745.58	6,392.13	6,392.91	0.67	0.30	-0.60	
15,879.57	87.90	89.80	9,649.64	745.62	6,405.70	6,406.47	0.68	-0.15	-0.66	
15,893.14	87.85	89.71	9,650.14	745.68	6,419.26	6,420.03	0.76	-0.37	-0.66	
15,906.71	87.79	89.62	9,650.66	745.76	6,432.82	6,433.59	0.80	-0.44	-0.66	
15,920.29	87.70	89.53	9,651.19	745.86	6,446.38	6,447.16	0.94	-0.66	-0.66	
15,933.86	87.61	89.44	9,651.75	745.98	6,459.94	6,460.72	0.94	-0.66	-0.66	
15,947.43	87.67	89.81	9,652.31	746.07	6,473.50	6,474.28	2.76	0.44	2.73	
15,961.00	87.91	90.77	9,652.83	746.00	6,487.06	6,487.84	7.29	1.77	7.07	
15,974.43	87.88	91.00	9,653.32	745.79	6,500.48	6,501.26	1.73	-0.22	1.71	
15,987.86	87.76	90.95	9,653.83	745.57	6,513.90	6,514.68	0.97	-0.89	-0.37	
16,001.29	87.63	90.90	9,654.37	745.35	6,527.32	6,528.09	1.04	-0.97	-0.37	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
16,014.71	87.49	90.85	9,654.94	745.14	6,540.72	6,541.50	1.11	-1.04	-0.37
16,028.14	87.40	90.83	9,655.54	744.95	6,554.14	6,554.91	0.69	-0.67	-0.15
16,041.57	88.26	91.24	9,656.05	744.71	6,567.56	6,568.33	7.09	6.40	3.05
16,055.00	88.96	91.84	9,656.38	744.34	6,580.98	6,581.75	6.86	5.21	4.47
16,068.43	89.09	92.07	9,656.61	743.89	6,594.40	6,595.17	1.97	0.97	1.71
16,081.86	88.70	92.01	9,656.86	743.41	6,607.82	6,608.59	2.94	-2.90	-0.45
16,095.29	88.28	91.96	9,657.22	742.94	6,621.23	6,622.01	3.15	-3.13	-0.37
16,108.71	87.86	91.90	9,657.67	742.49	6,634.64	6,635.41	3.16	-3.13	-0.45
16,122.14	87.46	91.85	9,658.22	742.05	6,648.05	6,648.82	3.00	-2.98	-0.37
16,135.57	88.15	92.11	9,658.73	741.59	6,661.46	6,662.23	5.49	5.14	1.94
16,149.00	88.28	92.18	9,659.15	741.09	6,674.88	6,675.65	1.10	0.97	0.52
16,162.43	88.05	92.14	9,659.58	740.58	6,688.29	6,689.06	1.74	-1.71	-0.30
16,175.86	87.85	92.09	9,660.06	740.09	6,701.70	6,702.47	1.53	-1.49	-0.37
16,189.29	87.68	92.05	9,660.59	739.60	6,715.11	6,715.88	1.30	-1.27	-0.30
16,202.71	87.53	92.01	9,661.15	739.13	6,728.51	6,729.28	1.16	-1.12	-0.30
16,216.14	87.39	91.95	9,661.74	738.66	6,741.92	6,742.69	1.13	-1.04	-0.45
16,229.57	88.10	92.11	9,662.27	738.19	6,755.33	6,756.10	5.42	5.29	1.19
16,243.00	88.99	92.37	9,662.61	737.66	6,768.75	6,769.52	6.90	6.63	1.94
16,256.57	89.93	92.60	9,662.74	737.07	6,782.30	6,783.07	7.13	6.93	1.69
16,270.14	90.20	92.60	9,662.72	736.46	6,795.86	6,796.63	1.99	1.99	0.00
16,283.71	90.07	92.48	9,662.69	735.86	6,809.42	6,810.18	1.30	-0.96	-0.88
16,297.29	89.95	92.36	9,662.69	735.28	6,822.98	6,823.75	1.25	-0.88	-0.88
16,310.86	89.85	92.23	9,662.71	734.74	6,836.54	6,837.31	1.21	-0.74	-0.96
16,324.43	89.86	92.11	9,662.75	734.23	6,850.10	6,850.87	0.89	0.07	-0.88
16,338.00	90.83	92.05	9,662.67	733.73	6,863.66	6,864.43	7.16	7.15	-0.44
16,351.43	91.11	92.00	9,662.44	733.26	6,877.08	6,877.85	2.12	2.08	-0.37
16,364.86	91.20	91.89	9,662.17	732.80	6,890.50	6,891.27	1.06	0.67	-0.82
16,378.29	91.31	91.78	9,661.87	732.37	6,903.92	6,904.69	1.16	0.82	-0.82
16,391.71	91.43	91.67	9,661.55	731.97	6,917.33	6,918.10	1.21	0.89	-0.82
16,405.14	91.55	91.56	9,661.20	731.59	6,930.75	6,931.52	1.21	0.89	-0.82
16,418.57	91.65	91.46	9,660.83	731.24	6,944.17	6,944.94	1.05	0.74	-0.74
16,432.00	91.73	91.35	9,660.43	730.91	6,957.59	6,958.36	1.01	0.60	-0.82
16,445.57	91.76	91.26	9,660.02	730.60	6,971.15	6,971.91	0.70	0.22	-0.66
16,459.14	91.75	91.16	9,659.60	730.31	6,984.71	6,985.48	0.74	-0.07	-0.74
16,472.71	91.72	91.07	9,659.19	730.05	6,998.28	6,999.04	0.70	-0.22	-0.66
16,486.29	91.68	90.98	9,658.79	729.81	7,011.85	7,012.61	0.72	-0.29	-0.66
16,499.86	91.63	90.89	9,658.40	729.58	7,025.41	7,026.17	0.76	-0.37	-0.66
16,513.43	91.59	90.81	9,658.02	729.38	7,038.97	7,039.73	0.66	-0.29	-0.59
16,527.00	91.20	90.81	9,657.69	729.19	7,052.54	7,053.30	2.87	-2.87	0.00
16,540.43	91.03	90.76	9,657.42	729.01	7,065.96	7,066.72	1.32	-1.27	-0.37
16,553.86	91.01	90.67	9,657.19	728.84	7,079.39	7,080.15	0.69	-0.15	-0.67
16,567.29	91.00	90.59	9,656.95	728.69	7,092.82	7,093.58	0.60	-0.07	-0.60
16,580.71	91.01	90.50	9,656.71	728.56	7,106.24	7,106.99	0.67	0.07	-0.67



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
16,594.14	91.03	90.40	9,656.48	728.46	7,119.66	7,120.42	0.76	0.15	-0.74
16,607.57	91.08	90.29	9,656.23	728.38	7,133.09	7,133.85	0.90	0.37	-0.82
16,621.00	91.16	90.18	9,655.97	728.32	7,146.52	7,147.28	1.01	0.60	-0.82
16,634.43	91.30	90.04	9,655.68	728.30	7,159.94	7,160.70	1.47	1.04	-1.04
16,647.86	91.48	89.89	9,655.35	728.31	7,173.37	7,174.13	1.74	1.34	-1.12
16,661.29	91.65	89.73	9,654.99	728.35	7,186.80	7,187.55	1.74	1.27	-1.19
16,674.71	91.80	89.57	9,654.58	728.43	7,200.21	7,200.97	1.63	1.12	-1.19
16,688.14	91.90	89.42	9,654.15	728.55	7,213.63	7,214.39	1.34	0.74	-1.12
16,701.57	91.14	90.04	9,653.79	728.61	7,227.06	7,227.82	7.30	-5.66	4.62
16,715.00	90.69	90.98	9,653.58	728.49	7,240.48	7,241.24	7.76	-3.35	7.00
16,728.57	90.42	91.24	9,653.45	728.23	7,254.05	7,254.81	2.76	-1.99	1.92
16,742.14	90.17	91.06	9,653.38	727.96	7,267.62	7,268.38	2.27	-1.84	-1.33
16,755.71	89.87	90.88	9,653.37	727.73	7,281.19	7,281.94	2.58	-2.21	-1.33
16,769.29	89.57	90.72	9,653.44	727.54	7,294.76	7,295.52	2.50	-2.21	-1.18
16,782.86	89.17	90.63	9,653.59	727.38	7,308.33	7,309.09	3.02	-2.95	-0.66
16,796.43	88.29	90.90	9,653.89	727.20	7,321.90	7,322.66	6.78	-6.48	1.99
16,810.00	88.11	90.84	9,654.31	726.99	7,335.46	7,336.22	1.40	-1.33	-0.44
16,823.57	88.02	90.85	9,654.77	726.79	7,349.02	7,349.78	0.67	-0.66	0.07
16,837.14	87.98	90.91	9,655.25	726.58	7,362.58	7,363.34	0.53	-0.29	0.44
16,850.71	87.99	90.99	9,655.72	726.36	7,376.14	7,376.90	0.59	0.07	0.59
16,864.29	88.02	91.09	9,656.19	726.11	7,389.71	7,390.47	0.77	0.22	0.74
16,877.86	88.07	91.19	9,656.66	725.84	7,403.27	7,404.03	0.82	0.37	0.74
16,891.43	88.12	91.29	9,657.11	725.55	7,416.83	7,417.58	0.82	0.37	0.74
16,905.00	88.18	91.37	9,657.55	725.24	7,430.39	7,431.14	0.74	0.44	0.59
16,918.43	88.23	91.42	9,657.97	724.91	7,443.81	7,444.56	0.53	0.37	0.37
16,931.86	88.27	91.45	9,658.38	724.57	7,457.23	7,457.98	0.37	0.30	0.22
16,945.29	88.31	91.46	9,658.78	724.23	7,470.65	7,471.40	0.31	0.30	0.07
16,958.71	88.35	91.46	9,659.17	723.89	7,484.06	7,484.81	0.30	0.30	0.00
16,971.24	88.40	91.44	9,659.53	723.57	7,496.58	7,497.33	0.40	0.37	-0.15
04-V7500(CH-32-133H)									
16,972.14	88.40	91.44	9,659.55	723.55	7,497.48	7,498.23	0.40	0.37	-0.15
16,985.57	88.45	91.40	9,659.92	723.22	7,510.90	7,511.65	0.48	0.37	-0.30
16,999.00	88.50	91.35	9,660.28	722.90	7,524.32	7,525.07	0.53	0.37	-0.37
17,012.43	88.55	91.26	9,660.62	722.59	7,537.74	7,538.49	0.77	0.37	-0.67
17,025.86	88.61	91.14	9,660.96	722.31	7,551.16	7,551.92	1.00	0.45	-0.89
17,039.29	88.68	91.02	9,661.27	722.06	7,564.59	7,565.34	1.03	0.52	-0.89
17,052.71	88.74	90.89	9,661.58	721.83	7,578.00	7,578.75	1.07	0.45	-0.97
17,066.14	88.79	90.75	9,661.86	721.64	7,591.43	7,592.18	1.11	0.37	-1.04
17,079.57	88.84	90.62	9,662.14	721.48	7,604.85	7,605.61	1.04	0.37	-0.97
17,093.00	88.87	90.50	9,662.41	721.35	7,618.28	7,619.03	0.92	0.22	-0.89
17,106.57	88.39	90.15	9,662.74	721.27	7,631.85	7,632.60	4.38	-3.54	-2.58
17,120.14	87.17	89.55	9,663.26	721.31	7,645.41	7,646.16	10.02	-8.99	-4.42
17,133.71	87.15	89.45	9,663.93	721.42	7,658.96	7,659.71	0.75	-0.15	-0.74
17,147.29	87.13	89.36	9,664.61	721.57	7,672.52	7,673.27	0.68	-0.15	-0.66



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
17,160.86	87.10	89.27	9,665.29	721.73	7,686.07	7,686.82	0.70	-0.22	-0.66
17,174.43	87.09	89.20	9,665.98	721.91	7,699.62	7,700.38	0.52	-0.07	-0.52
17,188.00	87.10	89.14	9,666.67	722.10	7,713.18	7,713.93	0.45	0.07	-0.44
17,201.43	87.14	89.11	9,667.34	722.31	7,726.59	7,727.34	0.37	0.30	-0.22
17,214.86	87.20	89.10	9,668.01	722.52	7,740.00	7,740.75	0.45	0.45	-0.07
17,228.29	87.28	89.10	9,668.65	722.73	7,753.41	7,754.16	0.60	0.60	0.00
17,241.71	87.37	89.10	9,669.28	722.94	7,766.82	7,767.57	0.67	0.67	0.00
17,255.14	87.46	89.12	9,669.89	723.15	7,780.23	7,780.98	0.69	0.67	0.15
17,268.57	87.62	89.23	9,670.46	723.34	7,793.65	7,794.40	1.45	1.19	0.82
17,282.00	88.30	90.30	9,670.94	723.40	7,807.07	7,807.82	9.44	5.06	7.97
17,295.43	88.39	90.33	9,671.33	723.32	7,820.49	7,821.24	0.71	0.67	0.22
17,308.86	88.49	90.38	9,671.69	723.24	7,833.92	7,834.67	0.83	0.74	0.37
17,322.29	88.59	90.43	9,672.04	723.14	7,847.34	7,848.09	0.83	0.74	0.37
17,335.71	88.70	90.48	9,672.35	723.04	7,860.76	7,861.51	0.90	0.82	0.37
17,349.14	88.82	90.53	9,672.64	722.92	7,874.18	7,874.94	0.97	0.89	0.37
17,362.57	88.96	90.58	9,672.90	722.79	7,887.61	7,888.36	1.11	1.04	0.37
17,376.00	89.11	90.62	9,673.13	722.65	7,901.04	7,901.79	1.16	1.12	0.30
17,389.57	89.30	90.65	9,673.32	722.50	7,914.61	7,915.36	1.42	1.40	0.22
17,403.14	89.51	90.67	9,673.46	722.34	7,928.17	7,928.93	1.55	1.55	0.15
17,416.71	89.73	90.68	9,673.55	722.18	7,941.74	7,942.49	1.62	1.62	0.07
17,430.29	89.95	90.69	9,673.59	722.02	7,955.32	7,956.07	1.62	1.62	0.07
17,443.86	90.18	90.69	9,673.57	721.86	7,968.89	7,969.64	1.69	1.69	0.00
17,457.43	90.40	90.68	9,673.50	721.69	7,982.46	7,983.21	1.62	1.62	-0.07
17,471.00	90.60	90.66	9,673.39	721.54	7,996.03	7,996.78	1.48	1.47	-0.15
17,484.43	90.79	90.63	9,673.22	721.38	8,009.46	8,010.21	1.43	1.41	-0.22
17,497.86	90.96	90.60	9,673.02	721.24	8,022.88	8,023.64	1.29	1.27	-0.22
17,511.29	91.12	90.56	9,672.77	721.10	8,036.31	8,037.06	1.23	1.19	-0.30
17,524.71	91.27	90.51	9,672.49	720.98	8,049.73	8,050.48	1.18	1.12	-0.37
17,538.14	91.42	90.48	9,672.18	720.86	8,063.15	8,063.90	1.14	1.12	-0.22
17,551.57	90.18	90.05	9,671.99	720.80	8,076.58	8,077.33	9.77	-9.23	-3.20
17,565.00	88.71	89.63	9,672.12	720.84	8,090.01	8,090.76	11.38	-10.95	-3.13
17,578.57	88.15	89.45	9,672.49	720.95	8,103.58	8,104.33	4.33	-4.13	-1.33
17,592.14	88.32	89.44	9,672.91	721.08	8,117.14	8,117.89	1.25	1.25	-0.07
17,605.71	88.50	89.43	9,673.29	721.21	8,130.70	8,131.45	1.33	1.33	-0.07
17,619.29	88.66	89.42	9,673.62	721.35	8,144.28	8,145.03	1.18	1.18	-0.07
17,632.86	88.81	89.41	9,673.92	721.49	8,157.84	8,158.59	1.11	1.11	-0.07
17,646.43	88.92	89.40	9,674.19	721.63	8,171.41	8,172.16	0.81	0.81	-0.07
17,660.00	87.47	89.35	9,674.62	721.78	8,184.97	8,185.72	10.69	-10.69	-0.37
17,673.43	87.48	89.36	9,675.21	721.93	8,198.39	8,199.14	0.11	0.07	0.07
17,686.86	87.45	89.36	9,675.81	722.08	8,211.80	8,212.56	0.22	-0.22	0.00
17,700.29	87.41	89.37	9,676.41	722.23	8,225.22	8,225.97	0.31	-0.30	0.07
17,713.71	87.36	89.38	9,677.02	722.37	8,238.63	8,239.38	0.38	-0.37	0.07
17,727.14	87.32	89.39	9,677.64	722.52	8,252.04	8,252.79	0.31	-0.30	0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
17,740.57	87.29	89.41	9,678.27	722.66	8,265.45	8,266.21	0.27	-0.22	0.15	
17,754.00	86.12	89.78	9,679.05	722.75	8,278.86	8,279.61	9.14	-8.71	2.76	
17,767.57	86.17	89.83	9,679.96	722.80	8,292.40	8,293.15	0.52	0.37	0.37	
17,781.14	86.25	89.88	9,680.86	722.83	8,305.94	8,306.69	0.69	0.59	0.37	
17,794.71	86.33	89.94	9,681.73	722.85	8,319.48	8,320.23	0.74	0.59	0.44	
17,808.29	86.42	89.99	9,682.59	722.86	8,333.04	8,333.79	0.76	0.66	0.37	
17,821.86	86.51	90.04	9,683.43	722.86	8,346.58	8,347.33	0.76	0.66	0.37	
17,835.43	86.59	90.07	9,684.25	722.85	8,360.12	8,360.88	0.63	0.59	0.22	
17,849.00	86.65	90.09	9,685.05	722.83	8,373.67	8,374.42	0.47	0.44	0.15	
17,862.43	86.99	90.20	9,685.79	722.79	8,387.08	8,387.83	2.66	2.53	0.82	
17,875.86	88.25	90.69	9,686.35	722.69	8,400.50	8,401.25	10.07	9.38	3.65	
17,889.29	88.24	90.64	9,686.76	722.53	8,413.92	8,414.67	0.38	-0.07	-0.37	
17,902.71	88.24	90.59	9,687.17	722.39	8,427.33	8,428.09	0.37	0.00	-0.37	
17,916.14	88.24	90.53	9,687.58	722.26	8,440.76	8,441.51	0.45	0.00	-0.45	
17,929.57	88.25	90.48	9,688.00	722.14	8,454.18	8,454.93	0.38	0.07	-0.37	
17,943.00	88.30	90.45	9,688.40	722.03	8,467.60	8,468.36	0.43	0.37	-0.22	
17,956.57	88.41	90.45	9,688.79	721.92	8,481.17	8,481.92	0.81	0.81	0.00	
17,970.14	88.55	90.47	9,689.15	721.81	8,494.73	8,495.48	1.04	1.03	0.15	
17,983.71	88.71	90.50	9,689.47	721.70	8,508.30	8,509.05	1.20	1.18	0.22	
17,997.29	88.88	90.53	9,689.76	721.58	8,521.87	8,522.63	1.27	1.25	0.22	
18,010.86	89.05	90.55	9,690.00	721.45	8,535.44	8,536.19	1.26	1.25	0.15	
18,024.43	89.20	90.56	9,690.21	721.32	8,549.01	8,549.76	1.11	1.11	0.07	
18,038.00	89.33	90.55	9,690.39	721.19	8,562.58	8,563.33	0.96	0.96	-0.07	
18,051.43	89.40	90.50	9,690.53	721.06	8,576.01	8,576.76	0.64	0.52	-0.37	
18,064.86	89.45	90.43	9,690.67	720.95	8,589.44	8,590.19	0.64	0.37	-0.52	
18,078.29	89.49	90.35	9,690.79	720.86	8,602.86	8,603.61	0.67	0.30	-0.60	
18,091.71	89.52	90.26	9,690.91	720.79	8,616.28	8,617.03	0.71	0.22	-0.67	
18,105.14	89.54	90.17	9,691.02	720.74	8,629.71	8,630.46	0.69	0.15	-0.67	
18,118.57	88.82	89.54	9,691.21	720.78	8,643.14	8,643.89	7.12	-5.36	-4.69	
18,132.00	88.36	89.10	9,691.54	720.93	8,656.57	8,657.32	4.74	-3.43	-3.28	
18,145.43	88.42	89.05	9,691.92	721.15	8,669.99	8,670.74	0.58	0.45	-0.37	
18,158.86	88.49	89.01	9,692.28	721.38	8,683.41	8,684.16	0.60	0.52	-0.30	
18,172.29	88.56	88.98	9,692.63	721.61	8,696.84	8,697.59	0.57	0.52	-0.22	
18,185.71	88.65	88.94	9,692.95	721.86	8,710.25	8,711.00	0.73	0.67	-0.30	
18,199.14	88.73	88.92	9,693.26	722.11	8,723.67	8,724.43	0.61	0.60	-0.15	
18,212.57	88.83	88.89	9,693.55	722.37	8,737.10	8,737.85	0.78	0.74	-0.22	
18,226.00	88.94	88.86	9,693.81	722.63	8,750.52	8,751.28	0.85	0.82	-0.22	
18,239.57	89.06	88.84	9,694.05	722.90	8,764.09	8,764.84	0.90	0.88	-0.15	
18,253.14	89.20	88.81	9,694.25	723.18	8,777.65	8,778.41	1.06	1.03	-0.22	
18,266.71	89.34	88.78	9,694.42	723.46	8,791.22	8,791.97	1.06	1.03	-0.22	
18,280.29	89.47	88.74	9,694.57	723.76	8,804.80	8,805.55	1.00	0.96	-0.29	
18,293.86	89.61	88.69	9,694.67	724.06	8,818.36	8,819.12	1.10	1.03	-0.37	
18,307.43	89.73	88.62	9,694.75	724.38	8,831.93	8,832.68	1.02	0.88	-0.52	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)	
18,321.00	89.83	88.53	9,694.80	724.72	8,845.49	8,846.25	0.99	0.74	-0.66	
18,334.43	89.91	88.39	9,694.84	725.08	8,858.92	8,859.67	1.20	0.60	-1.04	
18,347.86	89.96	88.23	9,694.85	725.48	8,872.34	8,873.10	1.25	0.37	-1.19	
18,361.29	90.01	88.07	9,694.85	725.91	8,885.77	8,886.52	1.25	0.37	-1.19	
18,374.71	90.06	87.90	9,694.85	726.38	8,899.18	8,899.93	1.32	0.37	-1.27	
18,388.14	90.10	87.74	9,694.83	726.89	8,912.60	8,913.35	1.23	0.30	-1.19	
18,401.57	90.16	87.61	9,694.80	727.44	8,926.02	8,926.77	1.07	0.45	-0.97	
18,415.00	88.97	87.68	9,694.90	727.99	8,939.44	8,940.19	8.88	-8.86	0.52	
18,428.43	89.07	87.63	9,695.13	728.54	8,952.85	8,953.61	0.83	0.74	-0.37	
18,441.86	89.17	87.61	9,695.33	729.10	8,966.27	8,967.03	0.76	0.74	-0.15	
18,455.29	89.28	87.60	9,695.52	729.66	8,979.69	8,980.44	0.82	0.82	-0.07	
18,468.71	89.40	87.59	9,695.67	730.22	8,993.09	8,993.85	0.90	0.89	-0.07	
18,482.14	89.52	87.59	9,695.80	730.78	9,006.51	9,007.27	0.89	0.89	0.00	
18,495.57	89.64	87.58	9,695.90	731.35	9,019.93	9,020.69	0.90	0.89	-0.07	
18,509.00	89.76	87.56	9,695.97	731.92	9,033.35	9,034.11	0.91	0.89	-0.15	
18,522.57	89.88	87.51	9,696.01	732.50	9,046.90	9,047.67	0.96	0.88	-0.37	
18,536.14	89.99	87.45	9,696.02	733.10	9,060.46	9,061.22	0.92	0.81	-0.44	
18,549.71	90.10	87.38	9,696.01	733.71	9,074.02	9,074.78	0.96	0.81	-0.52	
18,563.29	90.21	87.31	9,695.98	734.34	9,087.58	9,088.35	0.96	0.81	-0.52	
18,576.86	90.31	87.26	9,695.91	734.98	9,101.14	9,101.90	0.82	0.74	-0.37	
18,590.43	89.60	87.63	9,695.93	735.59	9,114.69	9,115.46	5.90	-5.23	2.73	
18,604.00	89.09	87.91	9,696.08	736.12	9,128.25	9,129.02	4.29	-3.76	2.06	
18,617.57	89.16	87.92	9,696.29	736.61	9,141.81	9,142.58	0.52	0.52	0.07	
18,631.14	89.23	87.95	9,696.48	737.10	9,155.37	9,156.14	0.56	0.52	0.22	
18,644.71	89.30	87.99	9,696.65	737.58	9,168.93	9,169.70	0.59	0.52	0.29	
18,658.29	89.36	88.05	9,696.81	738.05	9,182.50	9,183.27	0.62	0.44	0.44	
18,671.86	89.43	88.12	9,696.95	738.50	9,196.06	9,196.83	0.73	0.52	0.52	
18,685.43	89.49	88.20	9,697.08	738.94	9,209.63	9,210.40	0.74	0.44	0.59	
18,699.00	89.57	88.30	9,697.19	739.35	9,223.19	9,223.96	0.94	0.59	0.74	
18,712.43	89.66	88.42	9,697.28	739.74	9,236.61	9,237.38	1.12	0.67	0.89	
18,725.86	89.75	88.55	9,697.35	740.09	9,250.04	9,250.81	1.18	0.67	0.97	
18,739.29	89.85	88.69	9,697.40	740.42	9,263.46	9,264.24	1.28	0.74	1.04	
18,752.71	89.95	88.82	9,697.42	740.71	9,276.88	9,277.65	1.22	0.75	0.97	
18,766.14	90.06	88.95	9,697.42	740.97	9,290.31	9,291.08	1.27	0.82	0.97	
18,779.57	90.16	89.05	9,697.40	741.20	9,303.74	9,304.51	1.05	0.74	0.74	
18,793.00	89.41	89.12	9,697.45	741.42	9,317.17	9,317.94	5.61	-5.58	0.52	
18,806.57	89.07	89.15	9,697.63	741.62	9,330.73	9,331.50	2.52	-2.51	0.22	
18,820.14	89.17	89.16	9,697.84	741.82	9,344.30	9,345.07	0.74	0.74	0.07	
18,833.71	89.27	89.15	9,698.02	742.02	9,357.87	9,358.64	0.74	0.74	-0.07	
18,847.29	89.35	89.14	9,698.18	742.23	9,371.44	9,372.22	0.59	0.59	-0.07	
18,860.86	89.43	89.12	9,698.33	742.43	9,385.01	9,385.78	0.61	0.59	-0.15	
18,874.43	89.48	89.11	9,698.46	742.64	9,398.58	9,399.35	0.38	0.37	-0.07	
18,888.00	89.50	89.11	9,698.58	742.85	9,412.15	9,412.92	0.15	0.15	0.00	
18,901.43	89.47	89.12	9,698.70	743.06	9,425.58	9,426.35	0.24	-0.22	0.07	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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)
18,914.86	89.40	89.15	9,698.83	743.26	9,439.00	9,439.78	0.57	-0.52	0.22
18,928.29	89.33	89.19	9,698.98	743.46	9,452.43	9,453.20	0.60	-0.52	0.30
18,941.71	89.25	89.23	9,699.15	743.64	9,465.85	9,466.62	0.67	-0.60	0.30
18,955.14	89.17	89.27	9,699.33	743.82	9,479.28	9,480.05	0.67	-0.60	0.30
18,968.57	89.11	89.31	9,699.53	743.98	9,492.70	9,493.48	0.54	-0.45	0.30
18,982.00	88.07	89.38	9,699.86	744.14	9,506.13	9,506.90	7.76	-7.74	0.52
18,995.57	88.08	89.41	9,700.32	744.28	9,519.69	9,520.46	0.23	0.07	0.22
19,009.14	88.12	89.43	9,700.77	744.42	9,533.25	9,534.03	0.33	0.29	0.15
19,022.71	88.17	89.46	9,701.21	744.55	9,546.81	9,547.59	0.43	0.37	0.22
19,036.29	88.25	89.48	9,701.63	744.67	9,560.39	9,561.16	0.61	0.59	0.15
19,049.86	88.34	89.51	9,702.04	744.79	9,573.95	9,574.72	0.70	0.66	0.22
19,063.43	88.47	89.53	9,702.41	744.91	9,587.51	9,588.29	0.97	0.96	0.15
19,077.00	88.63	89.57	9,702.76	745.01	9,601.08	9,601.85	1.22	1.18	0.29
19,090.43	88.84	89.61	9,703.05	745.11	9,614.51	9,615.28	1.59	1.56	0.30
19,103.86	89.08	89.66	9,703.30	745.20	9,627.93	9,628.71	1.83	1.79	0.37
19,117.29	89.35	89.70	9,703.48	745.27	9,641.36	9,642.14	2.03	2.01	0.30
19,130.71	89.62	89.75	9,703.60	745.34	9,654.78	9,655.56	2.05	2.01	0.37
19,144.14	89.90	89.79	9,703.66	745.39	9,668.21	9,668.99	2.11	2.08	0.30
19,157.57	90.17	89.83	9,703.65	745.43	9,681.64	9,682.42	2.03	2.01	0.30
19,171.00	90.43	89.85	9,703.58	745.47	9,695.07	9,695.85	1.94	1.94	0.15
19,184.57	90.66	89.85	9,703.45	745.51	9,708.64	9,709.42	1.69	1.69	0.00
19,198.14	90.87	89.85	9,703.27	745.54	9,722.21	9,722.98	1.55	1.55	0.00
19,211.71	91.06	89.83	9,703.04	745.58	9,735.78	9,736.55	1.41	1.40	-0.15
19,225.29	91.22	89.82	9,702.77	745.62	9,749.35	9,750.13	1.18	1.18	-0.07
19,238.86	91.37	89.80	9,702.46	745.67	9,762.92	9,763.70	1.12	1.11	-0.15
19,252.43	90.18	89.34	9,702.28	745.77	9,776.49	9,777.26	9.40	-8.77	-3.39
19,266.00	89.35	89.16	9,702.34	745.95	9,790.06	9,790.83	6.26	-6.12	-1.33
19,279.43	89.37	89.15	9,702.49	746.14	9,803.49	9,804.26	0.17	0.15	-0.07
19,292.86	89.36	89.14	9,702.64	746.34	9,816.91	9,817.69	0.11	-0.07	-0.07
19,306.29	89.34	89.13	9,702.79	746.55	9,830.34	9,831.12	0.17	-0.15	-0.07
19,319.71	89.31	89.13	9,702.95	746.75	9,843.76	9,844.53	0.22	-0.22	0.00
19,333.14	89.29	89.14	9,703.11	746.95	9,857.19	9,857.96	0.17	-0.15	0.07
19,346.57	89.31	89.15	9,703.27	747.15	9,870.61	9,871.39	0.17	0.15	0.07
19,360.00	88.04	88.87	9,703.58	747.39	9,884.04	9,884.81	9.68	-9.46	-2.08
19,373.43	87.77	88.82	9,704.08	747.66	9,897.46	9,898.23	2.04	-2.01	-0.37
19,386.86	87.90	88.87	9,704.58	747.93	9,910.87	9,911.65	1.04	0.97	0.37
19,400.29	88.06	88.93	9,705.06	748.18	9,924.29	9,925.07	1.27	1.19	0.45
19,413.71	88.23	88.99	9,705.49	748.43	9,937.70	9,938.48	1.34	1.27	0.45
19,427.14	88.40	89.06	9,705.89	748.66	9,951.13	9,951.90	1.37	1.27	0.52
19,440.57	88.58	89.12	9,706.24	748.87	9,964.55	9,965.33	1.41	1.34	0.45
19,454.00	89.29	89.24	9,706.49	749.06	9,977.97	9,978.75	5.36	5.29	0.89
19,467.57	89.45	89.29	9,706.64	749.24	9,991.54	9,992.32	1.24	1.18	0.37
19,474.38	89.54	89.32	9,706.70	749.32	9,998.35	9,999.13	1.33	1.25	0.44



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	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-V10000(CH-32-133H)									
19,481.14	89.62	89.35	9,706.75	749.40	10,005.11	10,005.89	1.33	1.25	0.44
19,494.71	89.78	89.40	9,706.82	749.55	10,018.68	10,019.46	1.24	1.18	0.37
19,508.29	89.94	89.45	9,706.85	749.68	10,032.26	10,033.04	1.23	1.18	0.37
19,521.86	90.10	89.49	9,706.85	749.81	10,045.83	10,046.61	1.22	1.18	0.29
19,535.43	90.25	89.52	9,706.81	749.92	10,059.40	10,060.18	1.13	1.11	0.22
19,549.00	90.41	89.54	9,706.73	750.04	10,072.97	10,073.75	1.19	1.18	0.15
19,562.43	90.57	89.54	9,706.61	750.14	10,086.40	10,087.18	1.19	1.19	0.00
19,575.86	90.72	89.52	9,706.46	750.25	10,099.83	10,100.61	1.13	1.12	-0.15
19,589.29	90.87	89.50	9,706.28	750.37	10,113.25	10,114.03	1.13	1.12	-0.15
19,602.71	91.03	89.49	9,706.05	750.49	10,126.67	10,127.45	1.19	1.19	-0.07
19,616.14	91.18	89.47	9,705.79	750.61	10,140.10	10,140.88	1.13	1.12	-0.15
19,629.57	91.34	89.47	9,705.50	750.73	10,153.52	10,154.31	1.19	1.19	0.00
19,643.00	91.49	89.48	9,705.17	750.86	10,166.95	10,167.73	1.12	1.12	0.07
19,656.57	91.65	89.52	9,704.80	750.97	10,180.51	10,181.30	1.22	1.18	0.29
19,670.14	91.81	89.57	9,704.39	751.08	10,194.08	10,194.86	1.24	1.18	0.37
19,683.71	91.97	89.64	9,703.94	751.18	10,207.64	10,208.42	1.29	1.18	0.52
19,697.29	92.13	89.72	9,703.45	751.25	10,221.21	10,221.99	1.32	1.18	0.59
19,710.86	92.28	89.80	9,702.93	751.31	10,234.77	10,235.55	1.25	1.11	0.59
19,724.43	92.43	89.88	9,702.37	751.35	10,248.33	10,249.11	1.25	1.11	0.59
19,738.00	92.57	89.96	9,701.78	751.36	10,261.89	10,262.67	1.19	1.03	0.59
19,751.50	92.70	90.03	9,701.16	751.37	10,275.37	10,276.15	1.09	0.96	0.52
19,761.00	92.78	90.08	9,700.71	751.36	10,284.86	10,285.64	1.03	0.89	0.52
100 FEL: 19761.00' MD, 10285.64' VS, 9700.71' TVD									
19,765.00	92.82	90.10	9,700.51	751.35	10,288.86	10,289.64	1.03	0.89	0.52
19,766.33	92.83	90.11	9,700.44	751.35	10,290.18	10,290.96	1.03	0.89	0.52
06-LTP(CH-32-133H)									
19,778.50	92.94	90.17	9,699.83	751.32	10,302.34	10,303.12	1.03	0.89	0.52
19,792.00	93.04	90.22	9,699.13	751.27	10,315.82	10,316.60	0.83	0.74	0.37
Final MWD Survey: 19792.00' MD, 93.04°INC, 90.22°AZ									
19,851.00	93.04	90.22	9,696.00	751.05	10,374.74	10,375.52	0.00	0.00	0.00
PTB: 19851.00' MD, 10375.52' VS, 9696.00' TVD - 07-PBHL(CH-32-133H)									



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Crazy Horse 32 State Fed Com 133H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3262+30 @ 3292.00usft (HP510)
Site:	Crazy Horse 32 State Fed Com	MD Reference:	3262+30 @ 3292.00usft (HP510)
Well:	Crazy Horse 32 State Fed Com 133H	North Reference:	Grid
Wellbore:	133H	Survey Calculation Method:	Minimum Curvature
Design:	133H	Database:	EDM 5000.14 Single User Db

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
142.00	142.00	Rustler				
382.07	382.00	Top of Salt				
1,297.60	1,297.00	Base of Salt				
1,467.76	1,467.00	Yates				
1,828.24	1,827.00	Capitan				
3,394.77	3,392.00	DLWR Mnt Group				
5,888.46	5,867.00	Lower Brushy Canyon				
6,175.49	6,152.00	Bone Spring Lime				
7,512.02	7,477.00	1st Bone Spring SD				
7,673.38	7,637.00	2nd Bone Spring LM				
8,246.90	8,207.00	2nd Bone Spring SD				
8,584.21	8,542.00	3rd Bone Spring LM				
9,175.57	9,127.00	3rd Bone Spring SD				
14,576.93	9,612.00	Wolfcamp A				

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
9,015.00	8,970.33	656.94	-99.54	KOP: 9015.00' MD, -98.85' VS, 8970.33' TVD	
9,126.00	9,079.46	674.73	-91.65	100 FWL: 9126.00' MD, -90.94' VS, 9079.46' TVD	
9,907.00	9,558.91	745.30	438.16	EOC: 9907.00' MD, 438.94' VS, 9558.91' TVD	
19,761.00	9,700.71	751.36	10,284.86	100 FEL: 19761.00' MD, 10285.64' VS, 9700.71' TVD	
19,792.00	9,699.13	751.27	10,315.82	Final MWD Survey: 19792.00' MD, 93.04°INC, 90.22°AZ	
19,851.00	9,696.00	751.05	10,374.74	PTB: 19851.00' MD, 10375.52' VS, 9696.00' TVD	

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
 District III – (505) 334-6178
 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. 30-015-48000
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Crazy Horse 32 State Fed Com
8. Well Number 133H
9. OGRID Number 371449
10. Pool name or Wildcat Parkway; Bone Spring
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3263 GL

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: M 1243 feet from the South line and 191 feet from the West line Section: 32 Township: 19S Range: 29E NMPM County: Eddy	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3263 GL	

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: New Well Completion ☒	

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.

11/22/2021- Pressured up casing to 8,000 psi with a 15 minute test and 8,500 psi with a 15 minute test
 12/21/2021- Perf and frac stages 1-56.
 Perfs 9,878 – 19,639
 Frac with 440,460 bbl liquid and 21,940,185 lbs of proppant
 12/28/2021- Drilled out plugs
 Turn over to production. Tubing 2.875 @ 9,660
 TD 19,851 - PBTD 19,746

6/7/2021

7/5/2021

Spud Date: 09/28/2021

Rig Release Date: 10/20/2021

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

SIGNATURE Mikah Thomas

TITLE: Operations Tech

DATE: 03/01/2022

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 Crazy Horse 32 State Fed Com 6. Well Number: 133H												
7. Type of Completion: ☒ NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER																		
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:	M	32	19S	30E		1243	South	191	West	Eddy								
BH:	I	33	19S	30E		1982	South	10	East	Eddy								
13. Date Spudded 06/07/2021		14. Date T.D. Reached 07/02/2021		15. Date Rig Released 07/05/2021		16. Date Completed (Ready to Produce) 12/28/2021		17. Elevations (DF and RKB, RT, GR, etc.) 3263										
18. Total Measured Depth of Well 19,851			19. Plug Back Measured Depth 19,746			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 9,878 – 19,639 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		371		22.375		Prem Plus 449 sx 1.34										
13.375		54.5		1,594		17.5		Prem Plus 625 sx 2.08, 225 sx 1.34										
9.625		36		3,324		12.25		Prem Plus 510 sx 2.07, 199 sx 1.33										
5.5		17		19,839		8.75		Prem 750 sx 2.58, 1,550 sx 1.73										
24. LINER RECORD																		
SIZE	TOP	BOTTOM	SACKS CEMENT		SCREEN		25. TUBING RECORD											
							SIZE		DEPTH SET	PACKER SET								
							2 7/8		9660									
26. Perforation record (interval, size, and number) 9,878 – 19,639 0.37 1,842 holes						27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC. <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:50%;">DEPTH INTERVAL</th> <th style="width:50%;">AMOUNT AND KIND MATERIAL USED</th> </tr> <tr> <td>9,878 – 19,639</td> <td>Total Proppant 21,940,185 – Total Fluid 440,460</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>					DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED	9,878 – 19,639	Total Proppant 21,940,185 – Total Fluid 440,460				
DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED																	
9,878 – 19,639	Total Proppant 21,940,185 – Total Fluid 440,460																	
28. PRODUCTION																		
Date First Production 01/10/2022		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 02/28/2022	Hours Tested 24	Choke Size 88/88	Prod'n For Test Period	Oil – Bbl 367	Gas – MCF 1248	Water - Bbl. 2,901	Gas - Oil Ratio											
Flow Tubing Press. 2150	Casing Pressure 260	Calculated 24- Hour Rate	Oil - Bbl. 367	Gas - MCF 1248	Water - Bbl. 2,901	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: Operations Tech

Date: 03/01/2022

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- 142	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt- 382	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt- 1297	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates- 1467	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. DLWR Mnt. Group- 3392	T. Devonian	T. Cliff House	T. Leadville
T. L Brushy Canyon- 5867	T. Silurian	T. Menefee	T. Madison
T. BS Lime- 6152	T. Montoya	T. Point Lookout	T. Elbert
T. 1 st Bone Spring SD- 7477	T. Simpson	T. Mancos	T. McCracken
T. 2 nd Bone Spring LM- 7637	T. McKee	T. Gallup	T. Ignacio Otzte
T. 2 nd Bone Spring SD- 8207	T. Ellenburger	Base Greenhorn	T. Granite
T. 3 rd Bone Spring LM- 8542	T. Gr. Wash	T. Dakota	
T. 3 rd Bone Spring SD-9127	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T. Todilto	
T. Abo	T.	T. Entrada	
T. Wolfcamp 9612	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
------	----	----------------------	-----------	------	----	----------------------	-----------

--	--	--	--	--	--	--	--	--

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

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

ACKNOWLEDGMENTS

Action 88622

ACKNOWLEDGMENTS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 88622
	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.

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

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

CONDITIONS

Action 88622

CONDITIONS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 88622
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	Log (s) if applicable will be submitted separately as a [UF-WL] EP Well Log Submission (Well Log).	3/24/2022