

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

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

Submit one copy to appropriate District Office

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address Colgate Operating, LLC 300 N Marienfeld Street, Suite 1000 Midland, Tx 79701		² OGRID Number 371449	
		³ Reason for Filing Code/ Effective Date NW	
⁴ API Number 30 – 015 – 47751	⁵ Pool Name OLD MILLMAN RANCH; BS		⁶ Pool Code 48035
⁷ Property Code 329804	⁸ Property Name SHAMROCK 34 FED COM		⁹ Well Number 132H

II. ¹⁰ Surface Location

UL or lot no. I	Section 34	Township 19S	Range 28E	Lot Idn	Feet from the 2609	North/South Line South	Feet from the 340	East/West line East	County Eddy
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¹¹ Bottom Hole Location

UL or lot no. E	Section 33	Township 19S	Range 28E	Lot Idn	Feet from the 2226	North/South line North	Feet from the 31	East/West line West	County Eddy
¹² Lse Code F	¹³ Producing Method Code		¹⁴ Gas Connection Date 05/01/2022		¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date	

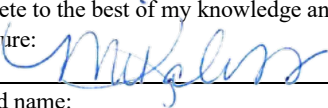
III. Oil and Gas Transporters

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 12/03/2021	²² Ready Date 05/01/2022	²³ TD 18,822 18,761 MD 8,628 TVD	²⁴ PBTD 18,802 MD 8,444 TVD	²⁵ Perforations 8,959-13,774	²⁶ DHC, MC
²⁷ Hole Size		²⁸ Casing & Tubing Size		²⁹ Depth Set	³⁰ Sacks Cement
17.5		13.375		350	350 Tail
12.25		9.625		3,024	550 Lead 210 Tail
8.75		5.5		18,802	800 Lead 1,330 Tail

V. Well Test Data

³¹ Date New Oil 05/24/2022	³² Gas Delivery Date 05/24/2022	³³ Test Date 06/13/2022	³⁴ Test Length 24	³⁵ Tbg. Pressure 2300	³⁶ Csg. Pressure 435
³⁷ Choke Size 88/88	³⁸ Oil 1148	³⁹ Water 4014 3274	⁴⁰ Gas 3274 4014		⁴¹ Test Method
⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: 			OIL CONSERVATION DIVISION		
Printed name: Mikah Thomas			Approved by: PATRICIA MARTINEZ		
Title: Sr. Regulatory Analyst			Title: PETROLEUM SPECIALIST		
E-mail Address: mthomas@colgateenergy.com			Approval Date: 8/2/2022		
Date: 06/14/2022		Phone: 432-695-4272			

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¹ Operator name and Address Colgate Operating, LLC 300 N Marienfeld Street, Suite 1000 Midland, Tx 79701		² OGRID Number 371449	
		³ Reason for Filing Code/ Effective Date NW	
⁴ API Number 30 – 015 – 47751	⁵ Pool Name WINCHESTER; BONE SPRING		⁶ Pool Code 65010
⁷ Property Code 329804	⁸ Property Name SHAMROCK 34 FED COM		⁹ Well Number 132H

II. ¹⁰ Surface Location

UL or lot no. I	Section 34	Township 19S	Range 28E	Lot Idn	Feet from the 2609	North/South Line South	Feet from the 340	East/West line East	County Eddy
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¹¹ Bottom Hole Location

UL or lot no. E	Section 33	Township 19S	Range 28E	Lot Idn	Feet from the 2226	North/South line North	Feet from the 31	East/West line West	County Eddy
¹² Lse Code F	¹³ Producing Method Code	¹⁴ Gas Connection Date 05/01/2022	¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date		

III. Oil and Gas Transporters

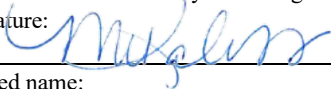
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329097	LM TOUCHDOWN, LLC	G

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²⁷ Hole Size		²⁸ Casing & Tubing Size		²⁹ Depth Set	³⁰ Sacks Cement
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Printed name: Mikah Thomas		Approved by: PATRICIA MARTINEZ	
Title: Sr. Regulatory Analyst		Title: PETROLEUM SPECIALIST	
E-mail Address: mthomas@colgateenergy.com		Approval Date: 8/2/2022	
Date: 06/14/2022	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**OIL CONSERVATION DIVISION**1220 South St. Francis Dr.
Santa Fe, N.M. 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

AS-DRILLED☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

¹ API Number 30-015-47751	² Pool Code 48035	³ Pool Name Old Millman Ranch; BS
⁴ Property Code 329804	⁵ Property Name Shamrock 34 Fed Com	⁶ Well Number 132H
⁷ GRID No. 371449	⁸ Operator Name Colgate Operating, LLC	⁹ Elevation 3310

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
I	34	19 S	28 E		2609	South	340	East	Eddy

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	33	19 S	28 E		2226	North	31	West	Eddy

¹² Dedicated Acres 320.00	¹³ Joint or Infill	¹⁴ Consolidation Code C	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16

Legend:

- = Surface Location
- = Bottom Hole Location
- ◇ = Kick Off Point (KOP)
- △ = First Take Point (FTP)
- = Last Take Point (LTP)
- ⊙ = Found 1941 USGLO Brass Cap
- ⊙ = Found 1942 USGLO Brass Cap
- ⊙ = Found Monument

NOTE:
DOWNHOLE INFORMATION TAKEN
FROM A REPORT FURNISHED
BY COLGATE ENERGY, DATED 12-16-21

SURFACE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 588309.04 N
X= 595566.64 E
LAT= 32.6171889° N
LONG= 104.1572040° W

KICK OFF POINT
NAD 83 NMSPC ZONE 3001
Y= 588634.46 N
X= 595814.76 E
LAT= 32.6180822° N
LONG= 104.1563964° W

FIRST TAKE POINT
NAD 83 NMSPC ZONE 3001
Y= 588666.67 N
X= 595643.85 E
LAT= 32.6181716° N
LONG= 104.1569513° W

LAST TAKE POINT
NAD 83 NMSPC ZONE 3001
Y= 588677.08 N
X= 585500.19 E
LAT= 32.6182421° N
LONG= 104.1898968° W

BOTTOM HOLE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 588679.61 N
X= 585429.17 E
LAT= 32.6182493° N
LONG= 104.1901275° W

17 OPERATOR CERTIFICATION

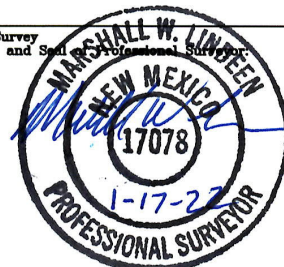
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this 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.

Mikah Thomas 01.17.2022
Signature Date
Mikah Thomas
Printed Name
mthomas@colgateenergy.com
E-mail Address

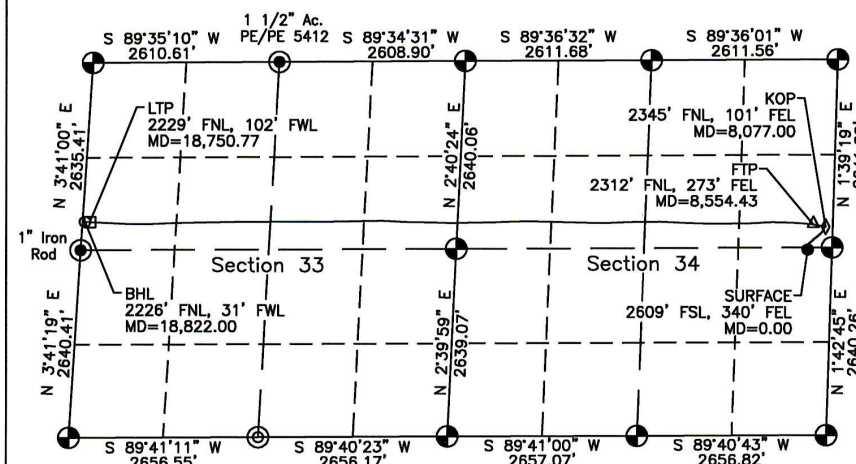
18 SURVEYOR CERTIFICATION

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.

Date of Survey
Signature and Seal of Professional Surveyor



17078
Certificate Number



DISTRICT I
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State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

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AS-DRILLED

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⁴ Property Code 329804	⁵ Property Name Shamrock 34 Fed Com	⁶ Well Number 132H
⁷ OGRID No. 371449	⁸ Operator Name Colgate Operating, LLC	⁹ Elevation 3310

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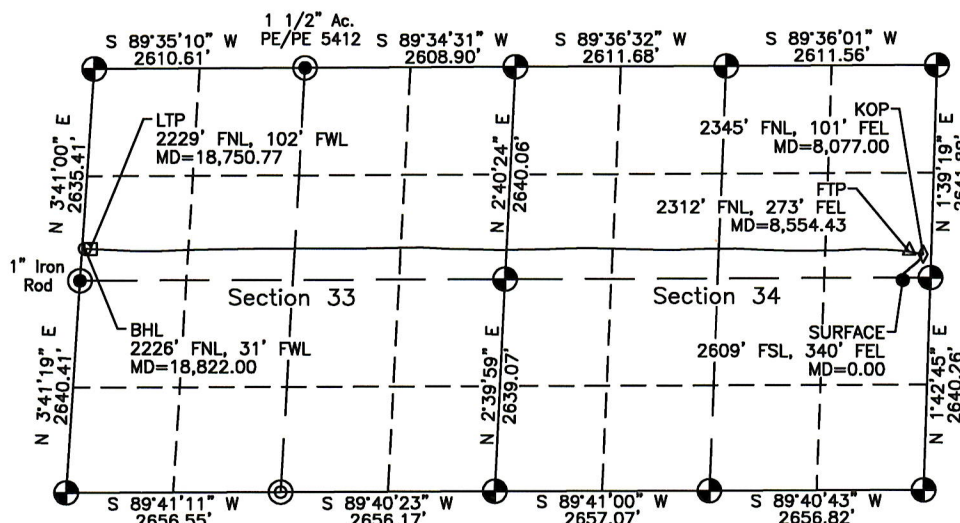
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Mikah Thomas 01.17.2022
Signature Date
Mikah Thomas
Printed Name
mthomas@colgateenergy.com
E-mail Address

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Date of Survey
Signature and Seal of Professional Surveyor



17078
Certificate Number



Colgate Energy

Eddy County, NM (N83-NME)

Shamrock 34 Fed State Com

Shamrock 34 Fed Com 132H

30-015-47751

132H

Design: DRL

Standard Survey Report

16 December, 2021



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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	Shamrock 34 Fed State Com		
Site Position:		Northing:	590,282.94 usft
From:	Map	Easting:	596,293.88 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.62261125
		Longitude:	-104.15483124

Well	Shamrock 34 Fed Com 132H		
Well Position	+N/-S	0.00 usft	Northing: 588,309.04 usft
	+E/-W	0.00 usft	Easting: 595,566.64 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
Grid Convergence:	0.09 °	Ground Level:	3,310.00 usft

Wellbore	132H		
Magnetics	Model Name	Sample Date	Declination (°)
	IFR	11/26/2021	7.12
			Dip Angle (°)
			60.34
			Field Strength (nT)
			47,737.10000000

Design	DRL		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			270.14

Survey Program	Date	12/16/2021		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
14.21	18,761.00	Survey #01_Gordon (132H)	MWD+IFR1+SAG+FDIR (SQ OWSG MWD + IFR1 + Sag + FDIR Correction	
18,822.00	18,822.00	Survey #02_PTB (132H)	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	0.02	251.65	14.21	0.00	0.00	0.00	0.14	0.14	0.00	
28.43	0.03	252.89	28.43	0.00	-0.01	0.01	0.07	0.07	8.72	
42.64	0.05	254.13	42.64	-0.01	-0.02	0.02	0.14	0.14	8.73	
56.86	0.06	255.39	56.86	-0.01	-0.03	0.03	0.07	0.07	8.86	
71.07	0.08	256.65	71.07	-0.01	-0.05	0.05	0.14	0.14	8.87	
85.29	0.09	257.92	85.29	-0.02	-0.07	0.07	0.07	0.07	8.93	
99.50	0.11	259.20	99.50	-0.02	-0.09	0.09	0.14	0.14	9.01	
105.00	0.12	259.76	105.00	-0.02	-0.10	0.10	0.15	0.14	10.27	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
Rustler										
113.71	0.13	260.49	113.71	-0.03	-0.12	0.12	0.14	0.14		8.33
127.93	0.14	261.78	127.93	-0.03	-0.16	0.16	0.07	0.07		9.07
142.14	0.16	263.07	142.14	-0.04	-0.19	0.19	0.14	0.14		9.08
156.36	0.17	264.37	156.36	-0.04	-0.23	0.23	0.08	0.07		9.14
170.57	0.19	265.66	170.57	-0.05	-0.28	0.28	0.14	0.14		9.08
184.79	0.20	266.96	184.79	-0.05	-0.33	0.33	0.08	0.07		9.14
199.00	0.22	268.26	199.00	-0.05	-0.38	0.38	0.14	0.14		9.15
212.14	0.29	265.55	212.14	-0.05	-0.44	0.44	0.54	0.53		-20.62
225.29	0.36	263.98	225.29	-0.06	-0.51	0.51	0.54	0.53		-11.94
238.43	0.43	262.99	238.43	-0.07	-0.60	0.60	0.54	0.53		-7.53
251.57	0.49	262.36	251.57	-0.09	-0.70	0.70	0.46	0.46		-4.79
264.71	0.56	261.94	264.71	-0.10	-0.82	0.82	0.53	0.53		-3.20
277.86	0.63	261.66	277.86	-0.12	-0.96	0.96	0.53	0.53		-2.13
291.00	0.70	261.49	291.00	-0.14	-1.11	1.11	0.53	0.53		-1.29
305.58	0.78	256.21	305.58	-0.18	-1.29	1.29	0.72	0.55		-36.21
320.17	0.86	251.98	320.16	-0.24	-1.50	1.49	0.69	0.55		-28.99
334.75	0.95	248.56	334.74	-0.32	-1.71	1.71	0.72	0.62		-23.46
349.33	1.04	245.76	349.32	-0.41	-1.94	1.94	0.70	0.62		-19.20
357.01	1.09	244.50	357.00	-0.47	-2.07	2.07	0.69	0.61		-16.45
Top of Salt										
363.92	1.13	243.45	363.91	-0.53	-2.19	2.19	0.69	0.62		-15.14
378.50	1.23	241.52	378.48	-0.67	-2.46	2.46	0.74	0.69		-13.24
393.08	1.32	239.89	393.06	-0.83	-2.74	2.74	0.67	0.62		-11.18
407.67	1.42	238.51	407.65	-1.01	-3.04	3.04	0.72	0.69		-9.46
422.25	1.51	237.33	422.22	-1.21	-3.36	3.36	0.65	0.62		-8.09
436.83	1.61	236.31	436.80	-1.43	-3.69	3.69	0.71	0.69		-7.00
451.42	1.70	235.42	451.38	-1.66	-4.04	4.04	0.64	0.62		-6.10
466.00	1.80	234.65	465.95	-1.92	-4.40	4.40	0.70	0.69		-5.28
480.83	1.80	231.96	480.78	-2.20	-4.78	4.77	0.57	0.00		-18.14
495.67	1.80	228.95	495.61	-2.49	-5.14	5.13	0.64	0.00		-20.28
510.50	1.81	225.77	510.43	-2.81	-5.48	5.47	0.68	0.07		-21.44
525.33	1.82	222.52	525.25	-3.15	-5.81	5.80	0.70	0.07		-21.92
540.17	1.84	219.27	540.09	-3.50	-6.12	6.11	0.71	0.13		-21.90
555.00	1.86	216.07	554.91	-3.88	-6.41	6.40	0.71	0.13		-21.58
570.00	1.84	212.88	569.90	-4.28	-6.68	6.67	0.70	-0.13		-21.27
585.00	1.82	209.72	584.89	-4.69	-6.93	6.92	0.69	-0.13		-21.07
600.00	1.80	206.62	599.89	-5.11	-7.16	7.14	0.67	-0.13		-20.67
615.00	1.79	203.63	614.88	-5.53	-7.36	7.34	0.63	-0.07		-19.93
630.00	1.77	200.80	629.87	-5.96	-7.53	7.52	0.60	-0.13		-18.87
645.00	1.76	198.26	644.86	-6.40	-7.69	7.67	0.53	-0.07		-16.93
658.44	1.74	196.49	658.30	-6.79	-7.81	7.79	0.43	-0.15		-13.17
671.89	1.71	194.97	671.74	-7.18	-7.92	7.90	0.41	-0.22		-11.30



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
683.15	1.69	193.85	683.00	-7.50	-8.00	7.98	0.33	-0.15	-9.95	
Base of Salt										
685.33	1.69	193.63	685.18	-7.57	-8.02	8.00	0.33	-0.15	-10.10	
698.78	1.67	192.44	698.62	-7.95	-8.11	8.09	0.30	-0.15	-8.85	
712.22	1.65	191.36	712.05	-8.33	-8.19	8.17	0.28	-0.15	-8.04	
725.67	1.63	190.37	725.50	-8.71	-8.26	8.24	0.26	-0.15	-7.36	
739.11	1.61	189.47	738.93	-9.08	-8.32	8.30	0.24	-0.15	-6.70	
752.56	1.59	188.67	752.38	-9.46	-8.38	8.36	0.22	-0.15	-5.95	
766.00	1.57	187.97	765.81	-9.82	-8.44	8.41	0.21	-0.15	-5.21	
779.43	1.56	187.37	779.24	-10.19	-8.49	8.46	0.14	-0.07	-4.47	
792.86	1.55	186.88	792.66	-10.55	-8.53	8.51	0.12	-0.07	-3.65	
806.29	1.54	186.50	806.09	-10.91	-8.57	8.55	0.11	-0.07	-2.83	
819.71	1.53	186.23	819.50	-11.26	-8.61	8.59	0.09	-0.07	-2.01	
833.14	1.52	186.08	832.93	-11.62	-8.65	8.62	0.08	-0.07	-1.12	
846.57	1.51	186.09	846.35	-11.97	-8.69	8.66	0.07	-0.07	0.07	
860.00	1.51	186.29	859.78	-12.32	-8.73	8.70	0.04	0.00	1.49	
873.57	1.52	186.75	873.34	-12.68	-8.77	8.74	0.12	0.07	3.39	
887.14	1.52	187.39	886.91	-13.04	-8.81	8.78	0.13	0.00	4.72	
900.71	1.53	188.12	900.47	-13.40	-8.86	8.83	0.16	0.07	5.38	
914.29	1.54	188.88	914.05	-13.76	-8.92	8.88	0.17	0.07	5.60	
927.86	1.55	189.63	927.61	-14.12	-8.97	8.94	0.17	0.07	5.53	
941.43	1.55	190.31	941.18	-14.48	-9.04	9.00	0.14	0.00	5.01	
955.00	1.55	190.85	954.74	-14.84	-9.11	9.07	0.11	0.00	3.98	
960.26	1.55	190.85	960.00	-14.98	-9.13	9.10	0.00	0.00	0.00	
Yates										
968.43	1.54	191.07	968.17	-15.19	-9.17	9.14	0.14	-0.12	2.69	
981.86	1.53	191.11	981.60	-15.55	-9.24	9.21	0.07	-0.07	0.30	
995.29	1.51	191.04	995.02	-15.90	-9.31	9.27	0.15	-0.15	-0.52	
1,008.71	1.49	190.93	1,008.44	-16.24	-9.38	9.34	0.15	-0.15	-0.82	
1,022.14	1.46	190.80	1,021.86	-16.58	-9.44	9.40	0.22	-0.22	-0.97	
1,035.57	1.44	190.70	1,035.29	-16.92	-9.51	9.47	0.15	-0.15	-0.74	
1,049.00	1.42	190.66	1,048.71	-17.24	-9.57	9.53	0.15	-0.15	-0.30	
1,062.57	1.41	190.77	1,062.28	-17.57	-9.63	9.59	0.08	-0.07	0.81	
1,076.14	1.39	190.97	1,075.84	-17.90	-9.69	9.65	0.15	-0.15	1.47	
1,089.71	1.38	191.26	1,089.41	-18.22	-9.76	9.71	0.09	-0.07	2.14	
1,103.29	1.36	191.65	1,102.99	-18.54	-9.82	9.78	0.16	-0.15	2.87	
1,116.86	1.35	192.15	1,116.55	-18.85	-9.89	9.84	0.11	-0.07	3.68	
1,130.43	1.33	192.80	1,130.12	-19.16	-9.96	9.91	0.19	-0.15	4.79	
1,144.00	1.31	193.65	1,143.69	-19.47	-10.03	9.98	0.21	-0.15	6.26	
1,157.43	1.29	194.74	1,157.11	-19.76	-10.10	10.05	0.24	-0.15	8.12	
1,170.86	1.27	196.04	1,170.54	-20.05	-10.18	10.13	0.26	-0.15	9.68	
1,184.29	1.24	197.55	1,183.97	-20.33	-10.27	10.22	0.33	-0.22	11.24	
1,197.71	1.22	199.23	1,197.38	-20.61	-10.36	10.31	0.31	-0.15	12.52	
1,211.14	1.20	201.09	1,210.81	-20.87	-10.46	10.40	0.33	-0.15	13.85	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
1,224.57	1.19	203.13	1,224.24	-21.13	-10.56	10.51	0.33	-0.07	15.19
1,238.00	1.18	205.35	1,237.66	-21.39	-10.68	10.62	0.35	-0.07	16.53
1,251.57	1.18	207.77	1,251.23	-21.64	-10.80	10.75	0.37	0.00	17.83
1,265.14	1.18	210.33	1,264.80	-21.88	-10.94	10.88	0.39	0.00	18.87
1,278.71	1.18	212.86	1,278.37	-22.12	-11.08	11.03	0.38	0.00	18.64
1,292.29	1.19	215.24	1,291.94	-22.35	-11.24	11.18	0.37	0.07	17.53
1,305.86	1.20	217.30	1,305.51	-22.58	-11.41	11.35	0.33	0.07	15.18
1,319.43	1.21	218.90	1,319.08	-22.80	-11.58	11.53	0.26	0.07	11.79
1,333.00	1.22	219.80	1,332.64	-23.03	-11.77	11.71	0.16	0.07	6.63
1,346.43	1.23	219.69	1,346.07	-23.25	-11.95	11.89	0.08	0.07	-0.82
1,359.86	1.24	218.93	1,359.50	-23.47	-12.13	12.07	0.14	0.07	-5.66
1,373.29	1.25	217.78	1,372.92	-23.70	-12.31	12.26	0.20	0.07	-8.56
1,386.71	1.26	216.41	1,386.34	-23.93	-12.49	12.43	0.24	0.07	-10.21
1,400.14	1.27	214.97	1,399.77	-24.17	-12.66	12.60	0.25	0.07	-10.72
1,413.57	1.29	213.59	1,413.19	-24.42	-12.83	12.77	0.27	0.15	-10.28
1,427.00	1.31	212.41	1,426.62	-24.68	-13.00	12.94	0.25	0.15	-8.79
1,440.57	1.33	211.33	1,440.19	-24.94	-13.16	13.10	0.24	0.15	-7.96
1,454.14	1.35	210.47	1,453.75	-25.22	-13.33	13.26	0.21	0.15	-6.34
1,467.71	1.37	209.81	1,467.32	-25.49	-13.49	13.43	0.19	0.15	-4.86
1,481.29	1.39	209.33	1,480.90	-25.78	-13.65	13.59	0.17	0.15	-3.53
1,494.86	1.39	209.07	1,494.46	-26.07	-13.81	13.75	0.05	0.00	-1.92
1,508.43	1.39	209.09	1,508.03	-26.35	-13.97	13.91	0.00	0.00	0.15
1,522.00	1.35	209.50	1,521.59	-26.64	-14.13	14.06	0.30	-0.29	3.02
1,535.43	1.29	210.65	1,535.02	-26.90	-14.28	14.22	0.49	-0.45	8.56
1,548.86	1.20	212.38	1,548.45	-27.15	-14.44	14.37	0.73	-0.67	12.88
1,562.29	1.10	214.62	1,561.87	-27.38	-14.58	14.52	0.82	-0.74	16.68
1,575.71	1.00	217.34	1,575.29	-27.58	-14.73	14.66	0.83	-0.75	20.27
1,589.14	0.90	220.42	1,588.72	-27.75	-14.87	14.80	0.84	-0.74	22.93
1,602.57	0.81	223.58	1,602.15	-27.90	-15.00	14.93	0.76	-0.67	23.53
1,616.00	0.72	226.19	1,615.58	-28.03	-15.13	15.06	0.72	-0.67	19.43
1,629.57	0.46	239.42	1,629.15	-28.11	-15.24	15.17	2.15	-1.92	97.49
1,643.14	0.49	1.49	1,642.72	-28.08	-15.28	15.21	6.13	0.22	899.56
1,656.71	1.28	21.45	1,656.28	-27.88	-15.23	15.16	6.16	5.82	147.09
1,670.29	2.12	22.12	1,669.86	-27.51	-15.08	15.01	6.19	6.19	4.93
1,683.86	2.17	18.00	1,683.42	-27.03	-14.90	14.84	1.19	0.37	-30.36
1,697.43	2.17	13.39	1,696.98	-26.54	-14.76	14.70	1.29	0.00	-33.97
1,711.00	2.18	9.35	1,710.54	-26.04	-14.66	14.60	1.13	0.07	-29.77
1,724.43	2.16	7.06	1,723.96	-25.53	-14.59	14.53	0.66	-0.15	-17.05
1,737.86	2.15	5.75	1,737.38	-25.03	-14.53	14.47	0.37	-0.07	-9.75
1,751.29	2.15	5.11	1,750.80	-24.53	-14.48	14.42	0.18	0.00	-4.77
1,764.71	2.15	4.91	1,764.21	-24.03	-14.44	14.38	0.06	0.00	-1.49
1,778.14	2.16	5.01	1,777.63	-23.52	-14.40	14.34	0.08	0.07	0.74
1,791.57	2.16	5.30	1,791.05	-23.02	-14.35	14.29	0.08	0.00	2.16



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
1,805.00	2.17	5.71	1,804.47	-22.51	-14.30	14.25	0.14	0.07	3.05	
1,818.57	2.18	6.24	1,818.03	-22.00	-14.25	14.20	0.17	0.07	3.91	
1,832.14	2.18	6.80	1,831.59	-21.49	-14.19	14.14	0.16	0.00	4.13	
1,845.71	2.18	7.36	1,845.15	-20.98	-14.13	14.08	0.16	0.00	4.13	
1,859.29	2.19	7.90	1,858.72	-20.46	-14.06	14.01	0.17	0.07	3.98	
1,872.86	2.20	8.36	1,872.28	-19.95	-13.98	13.94	0.15	0.07	3.39	
1,886.43	2.20	8.71	1,885.84	-19.43	-13.91	13.86	0.10	0.00	2.58	
1,900.00	2.21	8.87	1,899.40	-18.92	-13.83	13.78	0.09	0.07	1.18	
1,913.43	2.22	8.73	1,912.82	-18.41	-13.75	13.70	0.08	0.07	-1.04	
1,926.86	2.23	8.42	1,926.24	-17.89	-13.67	13.63	0.12	0.07	-2.31	
1,940.29	2.24	8.01	1,939.66	-17.37	-13.60	13.55	0.14	0.07	-3.05	
1,953.71	2.25	7.56	1,953.07	-16.85	-13.52	13.48	0.15	0.07	-3.35	
1,967.14	2.26	7.12	1,966.49	-16.33	-13.46	13.42	0.15	0.07	-3.28	
1,980.57	2.28	6.75	1,979.91	-15.80	-13.39	13.35	0.18	0.15	-2.76	
1,994.00	2.29	6.49	1,993.33	-15.27	-13.33	13.29	0.11	0.07	-1.94	
2,007.57	2.30	6.42	2,006.89	-14.73	-13.27	13.23	0.08	0.07	-0.52	
2,021.14	2.32	6.48	2,020.45	-14.18	-13.21	13.17	0.15	0.15	0.44	
2,034.71	2.33	6.60	2,034.01	-13.64	-13.15	13.11	0.08	0.07	0.88	
2,048.29	2.34	6.76	2,047.58	-13.09	-13.08	13.05	0.09	0.07	1.18	
2,061.86	2.35	6.93	2,061.14	-12.54	-13.01	12.98	0.09	0.07	1.25	
2,075.43	2.36	7.07	2,074.69	-11.98	-12.95	12.92	0.09	0.07	1.03	
2,089.00	2.37	7.16	2,088.25	-11.43	-12.88	12.85	0.08	0.07	0.66	
2,102.43	2.38	7.14	2,101.67	-10.87	-12.81	12.78	0.07	0.07	-0.15	
2,115.86	2.38	7.06	2,115.09	-10.32	-12.74	12.71	0.02	0.00	-0.60	
2,129.29	2.38	6.93	2,128.51	-9.77	-12.67	12.65	0.04	0.00	-0.97	
2,142.71	2.39	6.77	2,141.92	-9.21	-12.60	12.58	0.09	0.07	-1.19	
2,156.14	2.39	6.58	2,155.33	-8.66	-12.54	12.52	0.06	0.00	-1.41	
2,169.57	2.40	6.37	2,168.75	-8.10	-12.48	12.46	0.10	0.07	-1.56	
2,183.00	2.41	6.14	2,182.17	-7.54	-12.42	12.40	0.10	0.07	-1.71	
2,196.43	2.42	5.88	2,195.59	-6.98	-12.36	12.34	0.11	0.07	-1.94	
2,209.86	2.44	5.60	2,209.01	-6.41	-12.30	12.28	0.17	0.15	-2.08	
2,223.29	2.46	5.32	2,222.42	-5.84	-12.24	12.23	0.17	0.15	-2.08	
2,236.71	2.48	5.03	2,235.83	-5.26	-12.19	12.18	0.18	0.15	-2.16	
2,250.14	2.50	4.76	2,249.25	-4.68	-12.14	12.13	0.17	0.15	-2.01	
2,263.57	2.52	4.50	2,262.67	-4.09	-12.09	12.08	0.17	0.15	-1.94	
2,277.00	2.54	4.25	2,276.08	-3.50	-12.05	12.04	0.17	0.15	-1.86	
2,290.57	2.54	4.03	2,289.64	-2.90	-12.01	12.00	0.07	0.00	-1.62	
2,304.14	2.55	3.83	2,303.20	-2.30	-11.96	11.96	0.10	0.07	-1.47	
2,317.71	2.55	3.67	2,316.75	-1.70	-11.93	11.92	0.05	0.00	-1.18	
2,331.29	2.56	3.55	2,330.32	-1.10	-11.89	11.88	0.08	0.07	-0.88	
2,344.86	2.56	3.49	2,343.88	-0.49	-11.85	11.85	0.02	0.00	-0.44	
2,358.43	2.56	3.52	2,357.43	0.11	-11.81	11.81	0.01	0.00	0.22	
2,372.00	2.56	3.67	2,370.99	0.72	-11.78	11.78	0.05	0.00	1.11	
2,385.57	2.56	4.03	2,384.55	1.32	-11.73	11.74	0.12	0.00	2.65	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
2,399.14	2.57	4.49	2,398.10	1.93	-11.69	11.69	0.17	0.07	3.39	
2,412.71	2.57	5.01	2,411.66	2.54	-11.64	11.65	0.17	0.00	3.83	
2,426.29	2.57	5.54	2,425.23	3.14	-11.58	11.59	0.18	0.00	3.90	
2,439.86	2.57	6.03	2,438.78	3.75	-11.52	11.53	0.16	0.00	3.61	
2,453.43	2.58	6.44	2,452.34	4.35	-11.46	11.47	0.15	0.07	3.02	
2,467.00	2.58	6.70	2,465.89	4.96	-11.39	11.40	0.09	0.00	1.92	
2,480.43	2.58	6.71	2,479.31	5.56	-11.31	11.33	0.00	0.00	0.07	
2,493.86	2.58	6.57	2,492.73	6.16	-11.24	11.26	0.05	0.00	-1.04	
2,507.29	2.57	6.34	2,506.14	6.76	-11.18	11.19	0.11	-0.07	-1.71	
2,520.71	2.57	6.08	2,519.55	7.36	-11.11	11.13	0.09	0.00	-1.94	
2,521.16	2.57	6.26	2,520.00	7.38	-11.11	11.13	1.77	0.01	39.44	
Capitan										
2,534.14	2.57	5.82	2,532.97	7.96	-11.05	11.07	0.15	0.00	-3.37	
2,547.57	2.57	5.62	2,546.38	8.56	-10.99	11.01	0.07	0.00	-1.49	
2,561.00	2.58	5.52	2,559.80	9.16	-10.93	10.95	0.08	0.07	-0.74	
2,574.57	2.59	5.61	2,573.36	9.77	-10.87	10.90	0.08	0.07	0.66	
2,588.14	2.60	5.80	2,586.91	10.38	-10.81	10.84	0.10	0.07	1.40	
2,601.71	2.62	6.06	2,600.47	10.99	-10.75	10.77	0.17	0.15	1.92	
2,615.29	2.64	6.36	2,614.03	11.61	-10.68	10.71	0.18	0.15	2.21	
2,628.86	2.66	6.66	2,627.59	12.24	-10.61	10.64	0.18	0.15	2.21	
2,642.43	2.67	6.95	2,641.14	12.86	-10.53	10.56	0.12	0.07	2.14	
2,656.00	2.69	7.20	2,654.70	13.49	-10.46	10.49	0.17	0.15	1.84	
2,669.43	2.70	7.41	2,668.11	14.12	-10.37	10.41	0.10	0.07	1.56	
2,682.86	2.71	7.57	2,681.53	14.75	-10.29	10.33	0.09	0.07	1.19	
2,696.29	2.71	7.68	2,694.94	15.38	-10.21	10.25	0.04	0.00	0.82	
2,709.71	2.72	7.75	2,708.35	16.01	-10.12	10.16	0.08	0.07	0.52	
2,723.14	2.73	7.75	2,721.76	16.64	-10.04	10.08	0.07	0.07	0.00	
2,736.57	2.74	7.67	2,735.18	17.27	-9.95	9.99	0.08	0.07	-0.60	
2,750.00	2.75	7.47	2,748.59	17.91	-9.87	9.91	0.10	0.07	-1.49	
2,763.57	2.77	7.10	2,762.15	18.56	-9.78	9.83	0.20	0.15	-2.73	
2,777.14	2.80	6.62	2,775.70	19.21	-9.70	9.75	0.28	0.22	-3.54	
2,790.71	2.82	6.07	2,789.26	19.88	-9.63	9.68	0.25	0.15	-4.05	
2,804.29	2.85	5.48	2,802.82	20.54	-9.56	9.61	0.31	0.22	-4.34	
2,817.86	2.87	4.87	2,816.37	21.22	-9.50	9.55	0.27	0.15	-4.50	
2,831.43	2.90	4.23	2,829.92	21.90	-9.45	9.50	0.32	0.22	-4.72	
2,845.00	2.92	3.57	2,843.48	22.59	-9.40	9.46	0.29	0.15	-4.86	
2,859.00	2.92	2.85	2,857.46	23.30	-9.36	9.42	0.26	0.00	-5.14	
2,873.00	2.93	2.13	2,871.44	24.01	-9.33	9.39	0.27	0.07	-5.14	
2,887.00	2.92	1.41	2,885.42	24.73	-9.31	9.37	0.27	-0.07	-5.14	
2,901.00	2.92	0.71	2,899.40	25.44	-9.29	9.36	0.25	0.00	-5.00	
2,915.00	2.92	0.05	2,913.39	26.15	-9.29	9.35	0.24	0.00	-4.71	
2,929.00	2.92	359.46	2,927.37	26.87	-9.29	9.36	0.21	0.00	-4.21	
2,943.00	2.93	358.95	2,941.35	27.58	-9.30	9.37	0.20	0.07	-3.64	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
2,957.00	2.93	358.58	2,955.33	28.29	-9.32	9.39	0.14	0.00	-2.64
2,971.38	2.95	358.41	2,969.69	29.03	-9.34	9.41	0.15	0.14	-1.18
2,985.75	2.97	358.36	2,984.04	29.77	-9.36	9.43	0.14	0.14	-0.35
3,000.13	2.99	358.40	2,998.40	30.52	-9.38	9.45	0.14	0.14	0.28
3,014.50	3.01	358.47	3,012.75	31.27	-9.40	9.48	0.14	0.14	0.49
3,028.88	3.04	358.55	3,027.11	32.03	-9.42	9.50	0.21	0.21	0.56
3,043.25	3.06	358.59	3,041.46	32.80	-9.44	9.52	0.14	0.14	0.28
3,054.80	3.07	358.57	3,053.00	33.41	-9.45	9.54	0.08	0.08	-0.15
DLWR Mnt. Group									
3,057.63	3.07	358.57	3,055.82	33.56	-9.46	9.54	0.05	0.05	-0.09
3,072.00	3.08	358.40	3,070.17	34.34	-9.48	9.56	0.09	0.07	-1.18
3,085.43	3.07	358.01	3,083.58	35.06	-9.50	9.59	0.17	-0.07	-2.90
3,098.86	3.06	357.50	3,096.99	35.77	-9.53	9.62	0.22	-0.07	-3.80
3,112.29	3.05	356.98	3,110.40	36.49	-9.56	9.65	0.22	-0.07	-3.87
3,125.71	3.04	356.52	3,123.81	37.20	-9.60	9.70	0.20	-0.07	-3.43
3,139.14	3.03	356.23	3,137.22	37.91	-9.65	9.74	0.14	-0.07	-2.16
3,152.57	3.03	356.22	3,150.63	38.62	-9.70	9.79	0.00	0.00	-0.07
3,166.00	3.05	356.65	3,164.04	39.33	-9.74	9.84	0.23	0.15	3.20
3,179.43	3.10	357.72	3,177.45	40.05	-9.78	9.87	0.57	0.37	7.97
3,192.86	3.16	359.14	3,190.86	40.78	-9.80	9.90	0.73	0.45	10.57
3,206.29	3.24	0.70	3,204.27	41.53	-9.80	9.90	0.88	0.60	11.62
3,219.71	3.33	2.27	3,217.67	42.30	-9.78	9.88	0.95	0.67	11.70
3,233.14	3.43	3.74	3,231.07	43.09	-9.73	9.84	0.99	0.74	10.95
3,246.57	3.52	5.01	3,244.48	43.90	-9.67	9.78	0.88	0.67	9.46
3,260.00	3.61	5.97	3,257.88	44.73	-9.59	9.70	0.80	0.67	7.15
3,273.57	4.16	14.07	3,271.42	45.63	-9.43	9.54	5.72	4.05	59.69
3,287.14	4.80	22.63	3,284.95	46.64	-9.09	9.20	6.81	4.72	63.08
3,300.71	5.04	24.90	3,298.47	47.70	-8.62	8.74	2.28	1.77	16.73
3,314.29	5.12	24.85	3,312.00	48.79	-8.12	8.23	0.59	0.59	-0.37
3,327.86	5.20	24.82	3,325.51	49.90	-7.60	7.72	0.59	0.59	-0.22
3,341.43	5.30	24.93	3,339.03	51.03	-7.08	7.21	0.74	0.74	0.81
3,355.00	5.40	25.32	3,352.54	52.17	-6.54	6.67	0.78	0.74	2.87
3,368.43	5.53	26.20	3,365.90	53.32	-5.99	6.12	1.15	0.97	6.55
3,381.86	5.67	27.32	3,379.27	54.49	-5.40	5.53	1.32	1.04	8.34
3,395.29	5.81	28.54	3,392.63	55.68	-4.77	4.90	1.38	1.04	9.08
3,408.71	5.95	29.75	3,405.98	56.88	-4.10	4.24	1.39	1.04	9.02
3,422.14	6.09	30.88	3,419.34	58.10	-3.39	3.53	1.37	1.04	8.41
3,435.57	6.21	31.85	3,432.69	59.32	-2.64	2.78	1.18	0.89	7.22
3,449.00	6.64	33.97	3,446.04	60.59	-1.82	1.97	3.66	3.20	15.79
3,462.57	7.51	37.40	3,459.50	61.94	-0.84	1.00	7.12	6.41	25.28
3,476.14	8.25	40.46	3,472.95	63.39	0.33	-0.17	6.27	5.45	22.55
3,489.71	8.25	40.55	3,486.38	64.87	1.59	-1.43	0.10	0.00	0.66
3,503.29	8.23	40.53	3,499.81	66.35	2.86	-2.69	0.15	-0.15	-0.15
3,516.86	8.20	40.41	3,513.25	67.82	4.11	-3.95	0.25	-0.22	-0.88



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
3,530.43	8.15	40.19	3,526.68	69.29	5.36	-5.19	0.43	-0.37	-1.62	
3,544.00	8.07	39.85	3,540.11	70.76	6.59	-6.42	0.69	-0.59	-2.51	
3,557.43	7.96	39.38	3,553.41	72.20	7.79	-7.61	0.95	-0.82	-3.50	
3,570.86	7.83	38.82	3,566.71	73.63	8.95	-8.77	1.12	-0.97	-4.17	
3,584.29	7.69	38.21	3,580.02	75.05	10.08	-9.90	1.21	-1.04	-4.54	
3,597.71	7.55	37.59	3,593.32	76.46	11.17	-10.99	1.21	-1.04	-4.62	
3,611.14	7.43	37.02	3,606.64	77.85	12.23	-12.04	1.05	-0.89	-4.24	
3,624.57	7.32	36.58	3,619.96	79.23	13.27	-13.07	0.92	-0.82	-3.28	
3,638.00	7.24	36.37	3,633.28	80.60	14.28	-14.08	0.63	-0.60	-1.56	
3,651.43	7.21	36.57	3,646.60	81.95	15.28	-15.08	0.29	-0.22	1.49	
3,664.86	7.22	37.00	3,659.93	83.31	16.29	-16.09	0.41	0.07	3.20	
3,678.29	7.25	37.56	3,673.25	84.65	17.32	-17.11	0.57	0.22	4.17	
3,691.71	7.30	38.20	3,686.56	85.99	18.36	-18.15	0.71	0.37	4.77	
3,705.14	7.36	38.87	3,699.88	87.33	19.43	-19.22	0.78	0.45	4.99	
3,718.57	7.42	39.53	3,713.20	88.67	20.52	-20.30	0.77	0.45	4.91	
3,732.00	7.48	40.16	3,726.52	90.01	21.64	-21.42	0.75	0.45	4.69	
3,745.57	7.61	42.47	3,739.97	91.35	22.81	-22.59	2.43	0.96	17.02	
3,759.14	8.06	47.81	3,753.41	92.65	24.12	-23.90	6.30	3.32	39.35	
3,772.71	8.34	48.69	3,766.84	93.94	25.57	-25.34	2.26	2.06	6.48	
3,786.29	8.39	49.18	3,780.28	95.23	27.06	-26.83	0.64	0.37	3.61	
3,799.86	8.44	49.65	3,793.70	96.53	28.57	-28.33	0.63	0.37	3.46	
3,813.43	8.46	50.06	3,807.12	97.81	30.09	-29.85	0.47	0.15	3.02	
3,827.00	8.46	50.39	3,820.55	99.09	31.62	-31.38	0.36	0.00	2.43	
3,836.56	8.42	50.51	3,830.00	99.98	32.71	-32.46	0.42	-0.37	1.26	
Lower Brushy Canyon										
3,840.43	8.41	50.56	3,833.83	100.34	33.14	-32.90	0.42	-0.37	1.27	
3,853.86	8.33	50.64	3,847.12	101.58	34.65	-34.41	0.60	-0.60	0.60	
3,867.29	8.23	50.66	3,860.41	102.81	36.15	-35.90	0.74	-0.74	0.15	
3,880.71	8.12	50.63	3,873.69	104.02	37.63	-37.37	0.82	-0.82	-0.22	
3,894.14	8.02	50.57	3,886.99	105.22	39.08	-38.83	0.75	-0.74	-0.45	
3,907.57	7.92	50.50	3,900.29	106.40	40.52	-40.26	0.75	-0.74	-0.52	
3,921.00	7.84	50.43	3,913.59	107.57	41.94	-41.68	0.60	-0.60	-0.52	
3,934.43	7.79	50.39	3,926.90	108.74	43.35	-43.08	0.37	-0.37	-0.30	
3,947.86	7.76	50.36	3,940.20	109.90	44.75	-44.48	0.23	-0.22	-0.22	
3,961.29	7.74	50.32	3,953.51	111.05	46.14	-45.87	0.15	-0.15	-0.30	
3,974.71	7.74	50.25	3,966.81	112.21	47.53	-47.26	0.07	0.00	-0.52	
3,988.14	7.75	50.16	3,980.12	113.36	48.92	-48.65	0.12	0.07	-0.67	
4,001.57	7.77	50.01	3,993.42	114.53	50.31	-50.03	0.21	0.15	-1.12	
4,015.00	7.80	49.81	4,006.73	115.70	51.70	-51.42	0.30	0.22	-1.49	
4,028.57	7.84	49.49	4,020.17	116.89	53.11	-52.83	0.44	0.29	-2.36	
4,042.14	7.90	49.12	4,033.62	118.11	54.52	-54.23	0.58	0.44	-2.73	
4,055.71	7.96	48.72	4,047.06	119.34	55.93	-55.64	0.60	0.44	-2.95	
4,069.29	8.03	48.30	4,060.50	120.59	57.35	-57.05	0.67	0.52	-3.09	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
4,082.86	8.10	47.90	4,073.94	121.86	58.76	-58.47	0.66	0.52	-2.95	
4,096.43	8.17	47.51	4,087.37	123.15	60.18	-59.88	0.66	0.52	-2.87	
4,110.00	8.23	47.18	4,100.81	124.46	61.61	-61.30	0.56	0.44	-2.43	
4,123.43	8.28	46.92	4,114.10	125.78	63.02	-62.71	0.46	0.37	-1.94	
4,136.86	8.33	46.69	4,127.39	127.10	64.43	-64.12	0.45	0.37	-1.71	
4,150.29	8.36	46.48	4,140.67	128.44	65.85	-65.53	0.32	0.22	-1.56	
4,163.71	8.39	46.24	4,153.95	129.79	67.26	-66.95	0.34	0.22	-1.79	
4,177.14	8.39	45.96	4,167.24	131.15	68.68	-68.35	0.30	0.00	-2.08	
4,190.57	8.37	45.58	4,180.52	132.52	70.08	-69.75	0.44	-0.15	-2.83	
4,200.15	8.33	45.21	4,190.00	133.49	71.07	-70.74	0.67	-0.37	-3.87	
Bone Spring Lime										
4,204.00	8.32	45.06	4,193.81	133.89	71.46	-71.14	0.67	-0.37	-3.89	
4,217.57	8.20	44.27	4,207.24	135.27	72.83	-72.50	1.22	-0.88	-5.82	
4,231.14	8.05	43.34	4,220.67	136.66	74.16	-73.83	1.47	-1.11	-6.85	
4,244.71	7.87	42.34	4,234.11	138.04	75.44	-75.10	1.67	-1.33	-7.37	
4,258.29	7.69	41.34	4,247.57	139.41	76.67	-76.33	1.66	-1.33	-7.36	
4,271.86	7.51	40.46	4,261.02	140.76	77.84	-77.50	1.58	-1.33	-6.48	
4,285.43	7.34	39.83	4,274.48	142.10	78.97	-78.62	1.39	-1.25	-4.64	
4,299.00	7.18	39.67	4,287.94	143.42	80.07	-79.72	1.19	-1.18	-1.18	
4,312.43	7.06	40.43	4,301.26	144.69	81.14	-80.79	1.14	-0.89	5.66	
4,325.86	6.96	41.68	4,314.59	145.93	82.22	-81.86	1.36	-0.74	9.31	
4,339.29	6.89	43.21	4,327.92	147.13	83.31	-82.95	1.47	-0.52	11.39	
4,352.71	6.84	44.83	4,341.25	148.28	84.42	-84.06	1.49	-0.37	12.07	
4,366.14	6.79	46.37	4,354.58	149.39	85.56	-85.20	1.41	-0.37	11.47	
4,379.57	6.75	47.66	4,367.92	150.47	86.72	-86.35	1.17	-0.30	9.61	
4,393.00	7.47	53.08	4,381.25	151.53	88.00	-87.63	7.32	5.36	40.36	
4,406.43	7.92	58.29	4,394.56	152.54	89.49	-89.11	6.18	3.35	38.79	
4,419.86	7.87	58.30	4,407.86	153.51	91.06	-90.68	0.37	-0.37	0.07	
4,433.29	7.82	58.13	4,421.16	154.48	92.61	-92.24	0.41	-0.37	-1.27	
4,446.71	7.77	57.84	4,434.46	155.44	94.16	-93.78	0.47	-0.37	-2.16	
4,460.14	7.71	57.45	4,447.77	156.41	95.68	-95.30	0.59	-0.45	-2.90	
4,473.57	7.65	57.00	4,461.08	157.38	97.19	-96.81	0.63	-0.45	-3.35	
4,487.00	7.59	56.49	4,474.39	158.36	98.68	-98.30	0.67	-0.45	-3.80	
4,500.57	7.50	55.96	4,487.84	159.35	100.16	-99.77	0.84	-0.66	-3.91	
4,514.14	7.40	55.40	4,501.30	160.34	101.62	-101.23	0.91	-0.74	-4.13	
4,527.71	7.30	54.82	4,514.75	161.33	103.04	-102.65	0.92	-0.74	-4.27	
4,541.29	7.19	54.21	4,528.23	162.33	104.44	-104.04	0.99	-0.81	-4.49	
4,554.86	7.08	53.58	4,541.69	163.32	105.80	-105.40	0.99	-0.81	-4.64	
4,568.43	6.96	52.95	4,555.16	164.31	107.13	-106.73	1.05	-0.88	-4.64	
4,582.00	6.85	52.34	4,568.63	165.30	108.42	-108.02	0.97	-0.81	-4.50	
4,595.43	6.72	51.84	4,581.97	166.28	109.68	-109.27	1.06	-0.97	-3.72	
4,608.86	6.59	51.37	4,595.31	167.24	110.90	-110.49	1.05	-0.97	-3.50	
4,622.29	6.47	50.92	4,608.65	168.20	112.08	-111.67	0.97	-0.89	-3.35	
4,635.71	6.37	50.47	4,621.98	169.15	113.25	-112.83	0.83	-0.75	-3.35	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
4,649.14	6.30	50.03	4,635.33	170.10	114.39	-113.97	0.63	-0.52	-3.28
4,662.57	6.26	49.61	4,648.68	171.05	115.51	-115.09	0.45	-0.30	-3.13
4,676.00	6.29	49.23	4,662.03	172.00	116.62	-116.20	0.38	0.22	-2.83
4,689.57	6.41	48.88	4,675.52	172.98	117.76	-117.33	0.93	0.88	-2.58
4,703.14	6.60	48.58	4,689.00	174.00	118.91	-118.49	1.42	1.40	-2.21
4,716.71	6.81	48.31	4,702.48	175.05	120.10	-119.67	1.56	1.55	-1.99
4,730.29	7.03	48.08	4,715.96	176.14	121.32	-120.89	1.63	1.62	-1.69
4,743.86	7.24	47.89	4,729.42	177.27	122.57	-122.14	1.56	1.55	-1.40
4,757.43	7.42	47.75	4,742.88	178.43	123.85	-123.42	1.33	1.33	-1.03
4,771.00	8.43	47.71	4,756.32	179.69	125.24	-124.80	7.44	7.44	-0.29
4,784.43	9.51	48.34	4,769.59	181.09	126.79	-126.35	8.07	8.04	4.69
4,797.86	10.57	49.68	4,782.81	182.62	128.56	-128.12	8.08	7.89	9.98
4,811.29	10.58	49.84	4,796.01	184.22	130.44	-129.99	0.23	0.07	1.19
4,824.71	10.57	50.06	4,809.21	185.80	132.33	-131.87	0.31	-0.07	1.64
4,838.14	10.55	50.29	4,822.41	187.38	134.22	-133.76	0.35	-0.15	1.71
4,851.57	10.52	50.49	4,835.61	188.94	136.11	-135.65	0.35	-0.22	1.49
4,865.00	10.49	50.64	4,848.82	190.50	138.00	-137.54	0.30	-0.22	1.12
4,878.57	10.46	50.67	4,862.16	192.06	139.91	-139.44	0.22	-0.22	0.22
4,892.14	10.43	50.61	4,875.51	193.62	141.81	-141.34	0.24	-0.22	-0.44
4,905.71	10.40	50.51	4,888.85	195.18	143.71	-143.23	0.26	-0.22	-0.74
4,919.29	10.37	50.36	4,902.21	196.74	145.59	-145.11	0.30	-0.22	-1.10
4,932.86	10.33	50.18	4,915.56	198.30	147.47	-146.98	0.38	-0.29	-1.33
4,946.43	10.30	49.98	4,928.91	199.86	149.33	-148.84	0.34	-0.22	-1.47
4,960.00	10.27	49.76	4,942.26	201.42	151.18	-150.69	0.36	-0.22	-1.62
4,973.43	10.23	49.52	4,955.48	202.97	153.01	-152.51	0.44	-0.30	-1.79
4,986.86	10.20	49.28	4,968.70	204.52	154.81	-154.31	0.39	-0.22	-1.79
5,000.29	10.17	49.03	4,981.91	206.07	156.61	-156.11	0.40	-0.22	-1.86
5,013.71	10.13	48.77	4,995.12	207.62	158.39	-157.88	0.45	-0.30	-1.94
5,027.14	10.10	48.52	5,008.34	209.18	160.16	-159.65	0.40	-0.22	-1.86
5,040.57	10.06	48.27	5,021.57	210.74	161.92	-161.40	0.44	-0.30	-1.86
5,054.00	10.03	48.03	5,034.79	212.31	163.67	-163.15	0.38	-0.22	-1.79
5,067.57	9.99	47.84	5,048.16	213.89	165.42	-164.89	0.38	-0.29	-1.40
5,081.14	9.95	47.66	5,061.52	215.47	167.16	-166.63	0.37	-0.29	-1.33
5,094.71	9.91	47.49	5,074.89	217.04	168.88	-168.35	0.37	-0.29	-1.25
5,108.29	9.86	47.32	5,088.27	218.62	170.60	-170.06	0.43	-0.37	-1.25
5,121.86	9.81	47.13	5,101.64	220.20	172.30	-171.76	0.44	-0.37	-1.40
5,135.43	9.76	46.93	5,115.01	221.77	173.99	-173.45	0.45	-0.37	-1.47
5,149.00	9.70	46.70	5,128.38	223.34	175.66	-175.11	0.53	-0.44	-1.69
5,162.43	9.64	46.44	5,141.62	224.89	177.30	-176.75	0.55	-0.45	-1.94
5,175.86	9.57	46.14	5,154.86	226.44	178.92	-178.36	0.64	-0.52	-2.23
5,189.29	9.50	45.82	5,168.11	227.98	180.52	-179.96	0.65	-0.52	-2.38
5,202.71	9.42	45.46	5,181.35	229.53	182.09	-181.53	0.74	-0.60	-2.68
5,216.14	9.33	45.07	5,194.60	231.07	183.65	-183.08	0.82	-0.67	-2.90



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
5,229.57	9.24	44.64	5,207.85	232.60	185.18	-184.61	0.85	-0.67	-3.20	
5,243.00	9.15	44.15	5,221.11	234.13	186.68	-186.11	0.89	-0.67	-3.65	
5,256.57	9.04	43.60	5,234.51	235.68	188.17	-187.59	1.03	-0.81	-4.05	
5,270.14	8.92	43.00	5,247.91	237.22	189.62	-189.04	1.12	-0.88	-4.42	
5,283.71	8.80	42.36	5,261.32	238.76	191.04	-190.45	1.14	-0.88	-4.72	
5,297.29	8.69	41.70	5,274.74	240.29	192.42	-191.83	1.10	-0.81	-4.86	
5,310.86	8.57	41.02	5,288.16	241.82	193.76	-193.17	1.16	-0.88	-5.01	
5,324.43	8.47	40.35	5,301.58	243.35	195.07	-194.48	1.04	-0.74	-4.94	
5,338.00	8.37	39.72	5,315.00	244.87	196.35	-195.75	1.00	-0.74	-4.64	
5,351.43	8.28	39.22	5,328.29	246.37	197.59	-196.99	0.86	-0.67	-3.72	
5,364.86	8.21	38.76	5,341.58	247.86	198.80	-198.19	0.72	-0.52	-3.43	
5,378.29	8.15	38.33	5,354.87	249.36	199.99	-199.38	0.64	-0.45	-3.20	
5,391.71	8.09	37.92	5,368.16	250.85	201.16	-200.55	0.62	-0.45	-3.06	
5,405.14	8.03	37.51	5,381.46	252.34	202.31	-201.70	0.62	-0.45	-3.05	
5,418.57	7.98	37.10	5,394.76	253.83	203.45	-202.83	0.57	-0.37	-3.05	
5,432.00	7.94	36.70	5,408.06	255.31	204.56	-203.94	0.51	-0.30	-2.98	
5,445.57	7.90	36.31	5,421.50	256.82	205.68	-205.05	0.49	-0.29	-2.87	
5,459.14	7.87	35.92	5,434.94	258.32	206.77	-206.14	0.45	-0.22	-2.87	
5,472.71	7.84	35.50	5,448.38	259.83	207.85	-207.22	0.48	-0.22	-3.10	
5,486.29	7.80	35.04	5,461.84	261.34	208.92	-208.28	0.55	-0.29	-3.39	
5,499.86	7.77	34.52	5,475.28	262.85	209.97	-209.33	0.56	-0.22	-3.83	
5,513.43	7.72	33.92	5,488.73	264.36	211.00	-210.35	0.70	-0.37	-4.42	
5,527.00	7.67	33.20	5,502.18	265.87	212.00	-211.35	0.80	-0.37	-5.31	
5,540.57	7.59	32.30	5,515.62	267.39	212.98	-212.32	1.06	-0.59	-6.63	
5,554.14	7.51	31.24	5,529.08	268.90	213.92	-213.26	1.18	-0.59	-7.81	
5,567.71	7.41	30.06	5,542.53	270.42	214.82	-214.15	1.35	-0.74	-8.70	
5,581.29	7.31	28.75	5,556.00	271.93	215.67	-215.00	1.44	-0.74	-9.65	
5,594.86	7.21	27.29	5,569.46	273.45	216.47	-215.81	1.55	-0.74	-10.76	
5,608.43	7.10	25.65	5,582.93	274.96	217.23	-216.56	1.71	-0.81	-12.09	
5,622.00	6.98	23.77	5,596.39	276.47	217.92	-217.25	1.91	-0.88	-13.85	
5,635.43	6.82	21.72	5,609.73	277.96	218.55	-217.87	2.19	-1.19	-15.26	
5,648.86	6.65	19.42	5,623.06	279.43	219.10	-218.42	2.37	-1.27	-17.13	
5,662.29	6.49	16.93	5,636.41	280.89	219.58	-218.89	2.43	-1.19	-18.54	
5,675.71	6.33	14.31	5,649.74	282.33	219.98	-219.29	2.48	-1.19	-19.52	
5,689.14	6.20	11.61	5,663.09	283.76	220.31	-219.62	2.40	-0.97	-20.10	
5,702.57	6.09	8.94	5,676.44	285.18	220.57	-219.87	2.28	-0.82	-19.88	
5,716.00	6.00	6.41	5,689.80	286.58	220.76	-220.06	2.09	-0.67	-18.84	
5,729.57	5.90	4.37	5,703.30	287.98	220.89	-220.19	1.72	-0.74	-15.03	
5,743.14	5.82	2.54	5,716.80	289.36	220.98	-220.27	1.50	-0.59	-13.49	
5,756.71	5.76	0.87	5,730.30	290.73	221.02	-220.31	1.32	-0.44	-12.31	
5,770.29	5.71	359.37	5,743.81	292.09	221.02	-220.30	1.16	-0.37	-11.05	
5,783.86	5.67	358.04	5,757.31	293.43	220.99	-220.27	1.02	-0.29	-9.80	
5,797.43	5.65	356.91	5,770.82	294.77	220.93	-220.21	0.83	-0.15	-8.33	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
5,811.00	5.64	356.05	5,784.32	296.10	220.85	-220.12	0.63	-0.07	-6.34	
5,824.43	5.64	355.58	5,797.68	297.42	220.75	-220.02	0.34	0.00	-3.50	
5,837.86	5.80	2.23	5,811.05	298.75	220.73	-220.00	5.07	1.19	49.52	
5,851.29	6.08	11.56	5,824.41	300.13	220.90	-220.16	7.48	2.08	69.47	
5,864.71	6.30	17.38	5,837.75	301.53	221.26	-220.52	4.95	1.64	43.37	
5,878.14	6.31	17.61	5,851.10	302.93	221.70	-220.96	0.20	0.07	1.71	
5,891.57	6.33	18.06	5,864.45	304.34	222.15	-221.41	0.40	0.15	3.35	
5,905.00	6.34	18.80	5,877.79	305.75	222.62	-221.88	0.61	0.07	5.51	
5,918.57	6.29	19.91	5,891.28	307.15	223.12	-222.37	0.97	-0.37	8.18	
5,932.14	6.22	21.26	5,904.77	308.54	223.64	-222.88	1.20	-0.52	9.95	
5,945.71	6.13	22.76	5,918.26	309.89	224.18	-223.43	1.36	-0.66	11.05	
5,959.29	6.03	24.32	5,931.77	311.21	224.76	-224.00	1.42	-0.74	11.49	
5,972.86	5.92	25.85	5,945.26	312.49	225.36	-224.59	1.43	-0.81	11.27	
5,986.43	5.79	27.23	5,958.76	313.73	225.98	-225.21	1.41	-0.96	10.17	
6,000.00	5.78	32.00	5,972.26	314.92	226.65	-225.88	3.54	-0.07	35.15	
6,013.43	6.07	40.75	5,985.62	316.03	227.47	-226.70	7.06	2.16	65.15	
6,026.86	6.45	47.20	5,998.97	317.08	228.49	-227.71	5.95	2.83	48.03	
6,040.29	6.15	46.39	6,012.32	318.09	229.56	-228.79	2.33	-2.23	-6.03	
6,053.71	5.83	45.19	6,025.67	319.06	230.57	-229.79	2.56	-2.38	-8.94	
6,067.14	5.50	43.65	6,039.03	320.01	231.50	-230.71	2.71	-2.46	-11.47	
6,080.57	5.18	41.85	6,052.40	320.93	232.34	-231.56	2.69	-2.38	-13.40	
6,094.00	4.88	39.89	6,065.78	321.82	233.12	-232.33	2.57	-2.23	-14.59	
6,107.43	4.63	38.42	6,079.16	322.68	233.82	-233.03	2.07	-1.86	-10.95	
6,120.86	4.40	36.99	6,092.55	323.52	234.47	-233.67	1.91	-1.71	-10.65	
6,134.29	4.20	35.60	6,105.94	324.33	235.06	-234.27	1.68	-1.49	-10.35	
6,147.71	4.01	34.31	6,119.33	325.11	235.61	-234.82	1.57	-1.42	-9.61	
6,161.14	3.84	33.21	6,132.73	325.88	236.12	-235.33	1.38	-1.27	-8.19	
6,174.57	3.67	32.43	6,146.13	326.62	236.60	-235.80	1.32	-1.27	-5.81	
6,188.00	3.51	32.21	6,159.53	327.33	237.05	-236.25	1.20	-1.19	-1.64	
6,201.57	3.36	33.35	6,173.08	328.01	237.49	-236.69	1.21	-1.11	8.40	
6,215.14	3.43	44.99	6,186.63	328.63	238.00	-237.19	5.10	0.52	85.78	
6,228.71	3.81	60.47	6,200.17	329.14	238.67	-237.87	7.70	2.80	114.08	
6,242.29	3.74	63.69	6,213.72	329.56	239.46	-238.66	1.64	-0.52	23.71	
6,255.86	3.64	66.54	6,227.26	329.93	240.26	-239.45	1.54	-0.74	21.00	
6,269.43	3.55	69.62	6,240.80	330.24	241.05	-240.24	1.57	-0.66	22.70	
6,283.00	3.43	72.76	6,254.35	330.51	241.83	-241.02	1.66	-0.88	23.14	
6,296.43	3.22	74.60	6,267.76	330.73	242.57	-241.77	1.75	-1.56	13.70	
6,309.86	2.99	76.16	6,281.17	330.91	243.28	-242.47	1.82	-1.71	11.62	
6,323.29	2.74	77.57	6,294.58	331.07	243.93	-243.12	1.93	-1.86	10.50	
6,336.71	2.49	78.93	6,307.99	331.19	244.53	-243.72	1.92	-1.86	10.13	
6,350.14	2.25	80.28	6,321.40	331.29	245.08	-244.27	1.83	-1.79	10.05	
6,363.57	2.02	81.64	6,334.83	331.37	245.57	-244.76	1.75	-1.71	10.13	
6,377.00	1.83	82.99	6,348.25	331.43	246.02	-245.21	1.45	-1.41	10.05	
6,390.57	1.68	83.60	6,361.81	331.48	246.43	-245.62	1.11	-1.11	4.50	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
6,404.14	1.55	84.00	6,375.38	331.52	246.81	-246.00	0.96	-0.96	2.95	
6,417.71	1.45	84.20	6,388.94	331.56	247.16	-246.35	0.74	-0.74	1.47	
6,431.29	1.36	84.16	6,402.52	331.59	247.50	-246.68	0.66	-0.66	-0.29	
6,444.86	1.27	83.88	6,416.08	331.62	247.81	-246.99	0.66	-0.66	-2.06	
6,458.43	1.25	82.92	6,429.65	331.66	248.10	-247.29	0.21	-0.15	-7.07	
6,468.78	1.31	82.64	6,440.00	331.69	248.33	-247.52	0.59	0.59	-2.69	
1st Bone Spring SD										
6,472.00	1.33	82.56	6,443.22	331.70	248.40	-247.59	0.59	0.59	-2.53	
6,485.43	1.21	82.23	6,456.64	331.74	248.70	-247.89	0.90	-0.89	-2.46	
6,498.86	1.09	81.66	6,470.07	331.77	248.97	-248.16	0.90	-0.89	-4.24	
6,512.29	0.97	80.85	6,483.50	331.81	249.21	-248.39	0.90	-0.89	-6.03	
6,525.71	0.80	77.58	6,496.92	331.85	249.41	-248.60	1.32	-1.27	-24.37	
6,539.14	0.73	74.55	6,510.35	331.89	249.58	-248.77	0.60	-0.52	-22.56	
6,552.57	0.66	70.80	6,523.77	331.94	249.74	-248.93	0.62	-0.52	-27.92	
6,566.00	0.59	66.10	6,537.20	331.99	249.87	-249.06	0.65	-0.52	-35.00	
6,579.43	0.49	58.92	6,550.63	332.05	249.99	-249.18	0.90	-0.74	-53.46	
6,592.86	0.41	48.30	6,564.06	332.11	250.07	-249.26	0.86	-0.60	-79.08	
6,606.29	0.34	32.69	6,577.49	332.18	250.13	-249.32	0.92	-0.52	-116.23	
6,619.71	0.31	11.91	6,590.91	332.25	250.16	-249.35	0.90	-0.22	-154.84	
6,633.14	0.32	350.07	6,604.34	332.32	250.16	-249.35	0.89	0.07	-162.62	
6,646.57	0.38	332.48	6,617.77	332.40	250.13	-249.32	0.91	0.45	-130.98	
6,660.00	0.46	320.28	6,631.20	332.48	250.08	-249.26	0.89	0.60	-90.84	
6,673.57	0.59	302.40	6,644.77	332.56	249.98	-249.17	1.53	0.96	-131.76	
6,687.14	0.75	291.54	6,658.34	332.63	249.84	-249.03	1.50	1.18	-80.03	
6,690.80	0.80	289.40	6,662.00	332.64	249.80	-248.98	1.52	1.29	-58.49	
2nd Bone Spring LM										
6,700.71	0.93	284.72	6,671.91	332.69	249.65	-248.84	1.52	1.34	-47.22	
6,701.00	0.93	284.72	6,672.20	332.69	249.65	-248.83	0.00	0.00	0.00	
100FEL: 6701.00' MD, -248.83' VS,6672.20' TVD										
6,714.29	1.12	280.19	6,685.49	332.74	249.42	-248.60	1.55	1.43	-34.09	
6,727.86	1.31	277.00	6,699.05	332.78	249.13	-248.32	1.49	1.40	-23.51	
6,741.43	1.51	274.67	6,712.62	332.81	248.80	-247.99	1.53	1.47	-17.17	
6,755.00	1.70	272.89	6,726.18	332.84	248.42	-247.61	1.45	1.40	-13.12	
6,768.57	1.78	271.65	6,739.75	332.86	248.01	-247.19	0.65	0.59	-9.14	
6,782.14	1.89	270.42	6,753.31	332.86	247.57	-246.76	0.86	0.81	-9.06	
6,795.71	2.01	269.33	6,766.87	332.86	247.11	-246.30	0.93	0.88	-8.03	
6,809.29	2.13	268.48	6,780.44	332.85	246.62	-245.81	0.91	0.88	-6.26	
6,822.86	2.23	267.91	6,794.00	332.84	246.11	-245.29	0.75	0.74	-4.20	
6,836.43	2.30	267.70	6,807.56	332.82	245.57	-244.76	0.52	0.52	-1.55	
6,850.00	2.31	268.01	6,821.12	332.80	245.02	-244.21	0.12	0.07	2.28	
6,863.43	2.23	269.48	6,834.54	332.78	244.49	-243.68	0.74	-0.60	10.95	
6,876.86	2.10	271.83	6,847.96	332.79	243.99	-243.17	1.17	-0.97	17.50	
6,890.29	1.94	274.97	6,861.38	332.82	243.51	-242.70	1.45	-1.19	23.38	
6,903.71	1.77	278.78	6,874.80	332.87	243.08	-242.27	1.56	-1.27	28.39	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
6,917.14	1.60	283.06	6,888.22	332.94	242.69	-241.88	1.57	-1.27	31.87
6,930.57	1.44	287.33	6,901.65	333.03	242.35	-241.54	1.46	-1.19	31.79
6,944.00	0.84	323.74	6,915.07	333.16	242.13	-241.32	6.79	-4.47	271.11
6,957.43	1.06	26.34	6,928.50	333.36	242.13	-241.31	7.48	1.64	466.12
6,970.86	1.37	40.31	6,941.93	333.59	242.29	-241.47	3.18	2.31	104.02
6,984.29	1.21	33.65	6,955.36	333.83	242.47	-241.65	1.63	-1.19	-49.59
6,997.71	1.08	23.95	6,968.77	334.06	242.60	-241.78	1.74	-0.97	-72.28
7,011.14	1.00	11.66	6,982.20	334.29	242.67	-241.86	1.76	-0.60	-91.51
7,024.57	0.98	358.31	6,995.63	334.52	242.69	-241.88	1.72	-0.15	-99.40
7,038.00	1.00	346.02	7,009.06	334.75	242.66	-241.84	1.59	0.15	-91.51
7,051.57	0.95	335.65	7,022.63	334.97	242.59	-241.77	1.35	-0.37	-76.42
7,065.14	0.96	326.73	7,036.19	335.17	242.48	-241.66	1.10	0.07	-65.73
7,078.71	1.00	318.22	7,049.76	335.35	242.34	-241.52	1.11	0.29	-62.71
7,092.29	1.05	310.46	7,063.34	335.52	242.16	-241.34	1.09	0.37	-57.14
7,105.86	1.12	303.59	7,076.91	335.67	241.96	-241.14	1.09	0.52	-50.63
7,119.43	1.21	297.65	7,090.47	335.81	241.72	-240.90	1.11	0.66	-43.77
7,133.00	1.31	292.57	7,104.04	335.94	241.45	-240.63	1.10	0.74	-37.44
7,146.43	1.16	293.24	7,117.47	336.05	241.19	-240.36	1.12	-1.12	4.99
7,159.86	1.00	294.83	7,130.90	336.15	240.95	-240.13	1.21	-1.19	11.84
7,173.29	0.83	297.48	7,144.32	336.25	240.76	-239.94	1.30	-1.27	19.73
7,186.71	0.68	301.46	7,157.74	336.33	240.61	-239.78	1.18	-1.12	29.66
7,200.14	0.53	307.18	7,171.17	336.41	240.49	-239.67	1.20	-1.12	42.59
7,208.97	0.44	311.81	7,180.00	336.46	240.43	-239.61	1.07	-0.98	52.41
2nd Bone Spring SD									
7,213.57	0.40	315.00	7,184.60	336.48	240.41	-239.58	1.08	-0.95	69.40
7,227.00	0.21	35.77	7,198.03	336.54	240.39	-239.57	3.13	-1.41	601.41
7,240.43	0.85	89.93	7,211.46	336.56	240.50	-239.68	5.56	4.77	403.28
7,253.86	1.54	95.13	7,224.89	336.54	240.78	-239.96	5.20	5.14	38.72
7,267.29	1.50	91.47	7,238.31	336.52	241.14	-240.31	0.78	-0.30	-27.25
7,280.71	1.49	87.17	7,251.73	336.53	241.49	-240.66	0.84	-0.07	-32.04
7,294.14	1.48	82.57	7,265.15	336.56	241.83	-241.01	0.89	-0.07	-34.25
7,307.57	1.45	77.84	7,278.58	336.61	242.17	-241.35	0.93	-0.22	-35.22
7,321.00	1.67	72.23	7,292.00	336.71	242.52	-241.70	1.99	1.64	-41.77
7,334.57	1.50	69.61	7,305.57	336.83	242.88	-242.05	1.36	-1.25	-19.31
7,348.14	1.29	67.00	7,319.14	336.95	243.19	-242.36	1.62	-1.55	-19.23
7,361.71	1.06	63.98	7,332.70	337.07	243.44	-242.61	1.75	-1.69	-22.25
7,375.29	0.82	59.83	7,346.28	337.17	243.64	-242.81	1.84	-1.77	-30.56
7,388.86	0.59	53.03	7,359.85	337.26	243.78	-242.95	1.80	-1.69	-50.11
7,402.43	0.38	39.43	7,373.42	337.34	243.86	-243.04	1.75	-1.55	-100.22
7,416.00	0.24	8.24	7,386.99	337.40	243.89	-243.07	1.58	-1.03	-229.85
7,429.43	0.10	328.84	7,400.42	337.44	243.89	-243.07	1.30	-1.04	-293.37
7,442.86	0.15	244.40	7,413.85	337.44	243.87	-243.04	1.28	0.37	-628.74
7,456.29	0.31	225.93	7,427.28	337.41	243.83	-243.00	1.30	1.19	-137.53



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
7,469.71	0.48	220.20	7,440.70	337.34	243.76	-242.94	1.30	1.27	-42.70
7,483.14	0.65	217.51	7,454.13	337.24	243.68	-242.86	1.28	1.27	-20.03
7,496.57	0.82	215.96	7,467.56	337.10	243.58	-242.75	1.27	1.27	-11.54
7,510.00	0.99	214.97	7,480.98	336.93	243.46	-242.63	1.27	1.27	-7.37
7,523.57	0.98	211.01	7,494.55	336.73	243.33	-242.51	0.51	-0.07	-29.18
7,537.14	0.97	207.03	7,508.12	336.53	243.22	-242.39	0.50	-0.07	-29.33
7,550.71	0.97	203.05	7,521.69	336.32	243.12	-242.30	0.50	0.00	-29.33
7,564.29	0.98	199.10	7,535.27	336.11	243.04	-242.22	0.50	0.07	-29.09
7,577.86	0.99	195.23	7,548.83	335.88	242.97	-242.15	0.50	0.07	-28.52
7,591.43	1.00	191.44	7,562.40	335.66	242.91	-242.09	0.49	0.07	-27.93
7,605.00	1.02	187.77	7,575.97	335.42	242.87	-242.05	0.50	0.15	-27.04
7,618.43	1.11	184.18	7,589.40	335.17	242.85	-242.03	0.83	0.67	-26.73
7,631.86	1.22	181.69	7,602.83	334.90	242.83	-242.02	0.90	0.82	-18.54
7,645.29	1.33	179.62	7,616.25	334.60	242.83	-242.01	0.89	0.82	-15.41
7,658.71	1.44	177.87	7,629.67	334.28	242.84	-242.02	0.88	0.82	-13.04
7,672.14	1.55	176.37	7,643.09	333.93	242.86	-242.04	0.87	0.82	-11.17
7,685.57	1.66	175.08	7,656.52	333.55	242.88	-242.07	0.86	0.82	-9.61
7,699.00	1.78	173.95	7,669.94	333.15	242.92	-242.11	0.93	0.89	-8.41
7,712.57	1.79	174.18	7,683.51	332.73	242.97	-242.15	0.09	0.07	1.69
7,726.14	1.82	174.62	7,697.07	332.30	243.01	-242.20	0.24	0.22	3.24
7,739.71	1.86	175.08	7,710.63	331.87	243.05	-242.24	0.31	0.29	3.39
7,753.29	1.89	175.42	7,724.20	331.43	243.08	-242.27	0.24	0.22	2.50
7,766.86	1.91	175.51	7,737.77	330.98	243.12	-242.31	0.15	0.15	0.66
7,780.43	1.91	175.18	7,751.33	330.53	243.16	-242.35	0.08	0.00	-2.43
7,794.00	1.88	174.19	7,764.89	330.08	243.20	-242.39	0.33	-0.22	-7.30
7,807.43	1.80	171.73	7,778.32	329.65	243.25	-242.45	0.84	-0.60	-18.32
7,820.86	1.70	168.11	7,791.74	329.25	243.32	-242.52	1.11	-0.74	-26.95
7,834.29	1.59	163.34	7,805.16	328.88	243.42	-242.61	1.31	-0.82	-35.52
7,847.71	1.49	157.49	7,818.58	328.54	243.54	-242.73	1.39	-0.75	-43.59
7,849.13	1.48	156.81	7,820.00	328.50	243.55	-242.75	1.40	-0.66	-47.54
3rd Bone Spring LM									
7,861.14	1.41	150.77	7,832.00	328.23	243.68	-242.88	1.40	-0.59	-50.33
7,874.57	1.37	143.72	7,845.43	327.96	243.86	-243.06	1.31	-0.30	-52.49
7,888.00	1.37	137.24	7,858.86	327.71	244.06	-243.26	1.15	0.00	-48.25
7,901.75	1.34	132.03	7,872.60	327.48	244.30	-243.49	0.92	-0.22	-37.89
7,915.50	1.34	127.23	7,886.35	327.28	244.54	-243.74	0.82	0.00	-34.91
7,929.25	1.36	122.99	7,900.10	327.09	244.81	-244.01	0.74	0.15	-30.84
7,943.00	1.37	119.34	7,913.84	326.92	245.09	-244.29	0.64	0.07	-26.55
7,956.75	1.36	116.27	7,927.59	326.77	245.38	-244.58	0.54	-0.07	-22.33
7,970.50	1.59	114.67	7,941.33	326.62	245.70	-244.90	1.70	1.67	-11.64
7,984.25	1.82	113.60	7,955.08	326.45	246.07	-245.27	1.69	1.67	-7.78
7,998.00	2.05	112.75	7,968.82	326.27	246.50	-245.70	1.69	1.67	-6.18
8,011.71	1.83	113.36	7,982.52	326.09	246.92	-246.13	1.61	-1.60	4.45
8,025.43	1.57	114.89	7,996.24	325.92	247.30	-246.50	1.92	-1.90	11.15



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
8,039.14	1.30	117.56	8,009.94	325.77	247.60	-246.81	2.03	-1.97	19.47
8,052.86	1.04	121.83	8,023.66	325.63	247.85	-247.05	2.00	-1.90	31.12
8,066.57	0.80	128.40	8,037.37	325.51	248.03	-247.23	1.91	-1.75	47.92
8,077.00	0.55	138.18	8,047.80	325.42	248.12	-247.32	2.61	-2.37	93.75
KOP: 8077.00' MD, -247.32' VS, 8047.80' TVD									
8,080.29	0.48	143.30	8,051.09	325.40	248.14	-247.34	2.61	-2.20	155.69
8,094.00	0.78	279.51	8,064.80	325.37	248.08	-247.28	8.57	2.19	993.51
8,107.57	2.28	282.99	8,078.36	325.45	247.73	-246.93	11.07	11.05	25.64
8,121.14	3.73	279.96	8,091.91	325.58	247.03	-246.23	10.75	10.69	-22.33
8,134.71	5.08	282.26	8,105.44	325.79	246.01	-245.21	10.03	9.95	16.95
8,148.29	6.29	282.59	8,118.95	326.08	244.69	-243.90	8.91	8.91	2.43
8,161.86	7.56	282.75	8,132.42	326.43	243.10	-242.30	9.36	9.36	1.18
8,175.43	9.06	283.88	8,145.85	326.89	241.19	-240.39	11.12	11.05	8.33
8,189.00	10.58	284.35	8,159.22	327.45	238.94	-238.14	11.22	11.20	3.46
8,202.57	12.09	284.00	8,172.53	328.11	236.36	-235.56	11.14	11.13	-2.58
8,216.14	13.44	284.67	8,185.76	328.85	233.45	-232.65	10.01	9.95	4.94
8,229.71	14.44	285.32	8,198.93	329.70	230.30	-229.49	7.46	7.37	4.79
8,243.29	15.72	286.15	8,212.04	330.65	226.90	-226.09	9.56	9.43	6.11
8,256.86	16.84	285.45	8,225.07	331.69	223.24	-222.42	8.38	8.25	-5.16
8,270.43	17.78	282.21	8,238.02	332.65	219.32	-218.50	9.92	6.93	-23.88
8,284.00	18.96	280.07	8,250.90	333.48	215.12	-214.31	10.01	8.70	-15.77
8,297.43	20.25	279.28	8,263.55	334.23	210.68	-209.86	9.81	9.61	-5.88
8,310.86	21.55	279.11	8,276.10	335.00	205.95	-205.13	9.69	9.68	-1.27
8,324.29	22.83	279.23	8,288.54	335.81	200.94	-200.12	9.54	9.53	0.89
8,337.71	24.09	279.53	8,300.85	336.68	195.67	-194.85	9.43	9.39	2.24
8,351.14	25.19	279.38	8,313.05	337.60	190.15	-189.32	8.20	8.19	-1.12
8,364.57	26.32	279.06	8,325.15	338.53	184.39	-183.56	8.48	8.41	-2.38
8,378.00	27.50	278.95	8,337.12	339.48	178.38	-177.55	8.79	8.79	-0.82
8,391.57	28.68	279.38	8,349.10	340.50	172.08	-171.24	8.82	8.70	3.17
8,405.14	29.88	279.85	8,360.93	341.61	165.53	-164.70	9.00	8.84	3.46
8,418.71	30.99	280.74	8,372.63	342.84	158.77	-157.93	8.83	8.18	6.56
8,432.29	32.15	279.86	8,384.20	344.11	151.78	-150.93	9.19	8.54	-6.48
8,445.86	33.42	279.70	8,395.61	345.36	144.53	-143.69	9.38	9.36	-1.18
8,457.18	34.54	279.93	8,405.00	346.44	138.30	-137.45	9.94	9.87	2.08
3rd Bone Spring SD									
8,459.43	34.76	279.98	8,406.85	346.66	137.04	-136.19	9.94	9.88	2.00
8,473.00	36.15	280.41	8,417.90	348.05	129.29	-128.44	10.41	10.24	3.17
8,486.57	37.59	280.70	8,428.76	349.54	121.29	-120.44	10.69	10.61	2.14
8,500.14	39.09	280.80	8,439.40	351.11	113.02	-112.16	11.06	11.05	0.74
8,513.71	40.62	280.64	8,449.82	352.73	104.48	-103.61	11.30	11.27	-1.18
8,527.29	42.18	280.40	8,460.00	354.37	95.65	-94.78	11.55	11.49	-1.77
8,540.86	43.68	280.29	8,469.94	356.03	86.55	-85.68	11.07	11.05	-0.81
8,554.43	44.98	279.18	8,479.65	357.63	77.21	-76.33	11.16	9.58	-8.18



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
00-FTP(S-132H)									
8,568.00	46.41	278.30	8,489.12	359.11	67.61	-66.73	11.51	10.54	-6.48
8,581.43	47.88	277.56	8,498.26	360.46	57.86	-56.98	11.67	10.95	-5.51
8,594.86	49.37	277.04	8,507.13	361.74	47.86	-46.98	11.47	11.09	-3.87
8,608.29	50.93	277.05	8,515.74	363.01	37.63	-36.74	11.62	11.62	0.07
8,621.71	52.50	277.16	8,524.05	364.31	27.18	-26.29	11.72	11.70	0.82
8,635.14	53.74	276.22	8,532.11	365.56	16.51	-15.62	10.80	9.23	-7.00
8,648.57	55.14	275.37	8,539.92	366.66	5.64	-4.74	11.63	10.42	-6.33
8,662.00	56.75	275.17	8,547.45	367.69	-5.44	6.34	12.05	11.99	-1.49
8,675.57	58.40	275.27	8,554.72	368.73	-16.85	17.75	12.18	12.16	0.74
8,689.14	60.07	275.85	8,561.66	369.86	-28.45	29.35	12.84	12.31	4.27
8,702.71	61.69	275.50	8,568.27	371.03	-40.25	41.15	12.15	11.94	-2.58
8,703.75	61.78	275.48	8,568.76	371.12	-41.16	42.07	8.71	8.47	-2.31
01-OVS(S-132H)									
8,716.29	62.84	275.19	8,574.59	372.15	-52.21	53.12	8.71	8.47	-2.28
8,729.86	64.30	274.31	8,580.63	373.16	-64.32	65.24	12.23	10.76	-6.48
8,743.43	65.98	273.80	8,586.33	374.03	-76.60	77.52	12.84	12.38	-3.76
8,757.00	67.26	273.58	8,591.72	374.83	-89.03	89.95	9.55	9.43	-1.62
8,770.57	68.99	273.34	8,596.77	375.59	-101.60	102.52	12.85	12.75	-1.77
8,784.14	70.69	273.08	8,601.45	376.30	-114.32	115.24	12.66	12.53	-1.92
8,797.71	72.17	273.19	8,605.77	377.00	-127.17	128.09	10.93	10.91	0.81
8,811.29	73.89	273.45	8,609.73	377.76	-140.13	141.06	12.80	12.67	1.91
8,824.86	75.16	273.03	8,613.35	378.49	-153.19	154.11	9.82	9.36	-3.10
8,838.43	76.77	273.14	8,616.64	379.20	-166.33	167.26	11.89	11.86	0.81
8,852.00	78.40	273.57	8,619.56	379.98	-179.56	180.49	12.40	12.01	3.17
8,865.43	79.60	273.50	8,622.12	380.79	-192.72	193.65	8.95	8.94	-0.52
8,878.86	81.43	273.47	8,624.34	381.60	-205.94	206.88	13.63	13.63	-0.22
8,892.29	83.28	273.36	8,626.12	382.39	-219.23	220.16	13.80	13.78	-0.82
8,905.71	85.11	273.16	8,627.48	383.15	-232.56	233.49	13.72	13.64	-1.49
8,919.14	86.44	272.50	8,628.47	383.81	-245.94	246.87	11.05	9.90	-4.91
8,932.57	87.90	272.03	8,629.13	384.34	-259.34	260.28	11.42	10.87	-3.50
8,946.00	89.56	271.37	8,629.43	384.74	-272.76	273.70	13.30	12.36	-4.91
8,959.57	91.32	271.53	8,629.33	385.08	-286.32	287.26	13.02	12.97	1.18
8,973.14	93.00	271.41	8,628.82	385.43	-299.88	300.82	12.41	12.38	-0.88
8,975.00	93.07	271.41	8,628.72	385.48	-301.74	302.68	3.54	3.54	-0.15
EOC: 8975.00' MD, 302.68' VS, 8628.72' TVD									
8,986.71	93.48	271.39	8,628.05	385.76	-313.42	314.36	3.54	3.54	-0.15
8,991.52	93.51	271.41	8,627.75	385.88	-318.22	319.16	0.80	0.66	0.44
02-LP(S-132H)									
9,000.29	93.57	271.45	8,627.21	386.10	-326.97	327.92	0.80	0.66	0.44
9,013.86	93.69	271.52	8,626.35	386.45	-340.51	341.45	1.02	0.88	0.52
9,027.43	93.82	271.57	8,625.47	386.81	-354.05	354.99	1.03	0.96	0.37
9,041.00	94.00	271.61	8,624.54	387.19	-367.58	368.53	1.36	1.33	0.29
9,054.57	94.27	271.62	8,623.56	387.57	-381.11	382.06	1.99	1.99	0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
9,068.14	94.51	271.60	8,622.52	387.95	-394.63	395.58	1.77	1.77	-0.15	
9,081.71	94.73	271.56	8,621.43	388.32	-408.16	409.10	1.65	1.62	-0.29	
9,095.29	94.89	271.50	8,620.29	388.68	-421.68	422.63	1.26	1.18	-0.44	
9,108.86	95.04	271.42	8,619.12	389.03	-435.20	436.15	1.25	1.11	-0.59	
9,122.43	94.88	270.97	8,617.94	389.31	-448.71	449.66	3.51	-1.18	-3.32	
9,136.00	94.72	270.34	8,616.81	389.46	-462.24	463.19	4.77	-1.18	-4.64	
9,149.43	94.99	270.22	8,615.67	389.53	-475.62	476.57	2.20	2.01	-0.89	
9,162.86	95.16	270.01	8,614.48	389.56	-488.99	489.94	2.01	1.27	-1.56	
9,176.29	95.35	269.77	8,613.25	389.53	-502.37	503.32	2.27	1.41	-1.79	
9,189.71	95.57	269.53	8,611.98	389.45	-515.73	516.68	2.42	1.64	-1.79	
9,203.14	95.76	269.29	8,610.65	389.31	-529.09	530.04	2.27	1.41	-1.79	
9,216.57	95.08	268.41	8,609.38	389.04	-542.46	543.41	8.26	-5.06	-6.55	
9,230.00	94.03	267.36	8,608.32	388.55	-555.84	556.78	11.04	-7.82	-7.82	
9,243.57	93.76	266.88	8,607.39	387.87	-569.36	570.30	4.05	-1.99	-3.54	
9,257.14	93.76	266.60	8,606.50	387.10	-582.88	583.82	2.06	0.00	-2.06	
9,270.71	93.72	266.32	8,605.62	386.26	-596.39	597.33	2.08	-0.29	-2.06	
9,284.29	93.60	266.06	8,604.75	385.36	-609.91	610.85	2.11	-0.88	-1.91	
9,297.86	93.41	265.82	8,603.92	384.40	-623.42	624.36	2.25	-1.40	-1.77	
9,311.43	92.20	265.53	8,603.26	383.38	-636.94	637.87	9.17	-8.92	-2.14	
9,325.00	91.42	265.33	8,602.83	382.30	-650.46	651.39	5.93	-5.75	-1.47	
9,338.57	91.00	265.29	8,602.54	381.19	-663.98	664.91	3.11	-3.10	-0.29	
9,352.14	90.70	265.29	8,602.34	380.08	-677.50	678.43	2.21	-2.21	0.00	
9,365.71	90.53	265.32	8,602.20	378.97	-691.03	691.95	1.27	-1.25	0.22	
9,379.29	90.39	265.35	8,602.09	377.86	-704.56	705.48	1.05	-1.03	0.22	
9,392.86	90.20	265.37	8,602.02	376.76	-718.09	719.01	1.41	-1.40	0.15	
9,406.43	90.03	265.70	8,601.99	375.71	-731.62	732.53	2.74	-1.25	2.43	
9,420.00	89.96	267.25	8,601.99	374.87	-745.16	746.07	11.43	-0.52	11.42	
9,433.43	89.88	268.91	8,602.01	374.42	-758.58	759.49	12.37	-0.60	12.36	
9,446.86	89.76	269.02	8,602.05	374.18	-772.01	772.92	1.21	-0.89	0.82	
9,460.29	89.74	268.82	8,602.11	373.93	-785.44	786.35	1.50	-0.15	-1.49	
9,473.71	89.81	268.63	8,602.16	373.63	-798.85	799.76	1.51	0.52	-1.42	
9,487.14	89.90	268.45	8,602.20	373.29	-812.28	813.19	1.50	0.67	-1.34	
9,500.57	90.05	268.32	8,602.20	372.91	-825.70	826.61	1.48	1.12	-0.97	
9,514.00	90.21	268.29	8,602.17	372.51	-839.13	840.04	1.21	1.19	-0.22	
9,527.57	90.38	268.40	8,602.10	372.12	-852.69	853.60	1.49	1.25	0.81	
9,541.14	90.48	268.60	8,602.00	371.76	-866.26	867.16	1.65	0.74	1.47	
9,554.71	90.57	268.83	8,601.88	371.46	-879.82	880.73	1.82	0.66	1.69	
9,568.29	90.65	269.08	8,601.73	371.21	-893.40	894.30	1.93	0.59	1.84	
9,581.86	91.20	269.34	8,601.51	371.03	-906.97	907.87	4.48	4.05	1.92	
9,595.43	91.80	269.58	8,601.16	370.90	-920.53	921.43	4.76	4.42	1.77	
9,609.00	91.91	269.73	8,600.72	370.82	-934.09	935.00	1.37	0.81	1.11	
9,622.57	91.96	269.78	8,600.26	370.76	-947.66	948.56	0.52	0.37	0.37	
9,636.14	91.96	269.77	8,599.80	370.71	-961.22	962.12	0.07	0.00	-0.07	
9,649.71	91.93	269.72	8,599.34	370.64	-974.78	975.68	0.43	-0.22	-0.37	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
9,663.29	91.87	269.64	8,598.89	370.57	-988.35	989.25	0.74	-0.44	-0.59
9,676.86	91.80	269.53	8,598.45	370.47	-1,001.91	1,002.82	0.96	-0.52	-0.81
9,690.43	91.72	269.39	8,598.03	370.34	-1,015.48	1,016.38	1.19	-0.59	-1.03
9,704.00	91.64	269.22	8,597.64	370.18	-1,029.04	1,029.94	1.38	-0.59	-1.25
9,717.57	91.57	269.01	8,597.26	369.97	-1,042.60	1,043.50	1.63	-0.52	-1.55
9,731.14	91.50	268.77	8,596.89	369.71	-1,056.17	1,057.07	1.84	-0.52	-1.77
9,744.71	91.42	268.53	8,596.55	369.39	-1,069.73	1,070.63	1.86	-0.59	-1.77
9,758.29	91.34	268.30	8,596.22	369.01	-1,083.30	1,084.20	1.79	-0.59	-1.69
9,771.86	91.26	268.12	8,595.91	368.59	-1,096.86	1,097.76	1.45	-0.59	-1.33
9,785.43	91.18	268.00	8,595.62	368.13	-1,110.42	1,111.31	1.06	-0.59	-0.88
9,799.00	91.65	268.21	8,595.29	367.68	-1,123.98	1,124.87	3.79	3.46	1.55
9,812.43	91.66	268.36	8,594.90	367.28	-1,137.40	1,138.29	1.12	0.07	1.12
9,825.86	91.52	268.54	8,594.53	366.91	-1,150.81	1,151.71	1.70	-1.04	1.34
9,839.29	91.39	268.76	8,594.19	366.60	-1,164.24	1,165.13	1.90	-0.97	1.64
9,852.71	91.28	268.97	8,593.87	366.33	-1,177.65	1,178.54	1.77	-0.82	1.56
9,866.14	91.18	269.16	8,593.59	366.11	-1,191.08	1,191.97	1.60	-0.74	1.41
9,879.57	91.54	269.49	8,593.27	365.95	-1,204.50	1,205.39	3.64	2.68	2.46
9,893.00	92.03	270.26	8,592.85	365.93	-1,217.92	1,218.81	6.79	3.65	5.73
9,906.57	92.21	271.01	8,592.35	366.08	-1,231.48	1,232.37	5.68	1.33	5.53
9,920.14	92.05	270.88	8,591.84	366.30	-1,245.04	1,245.93	1.52	-1.18	-0.96
9,933.71	91.94	270.71	8,591.37	366.49	-1,258.60	1,259.50	1.49	-0.81	-1.25
9,947.29	91.86	270.52	8,590.92	366.63	-1,272.18	1,273.07	1.52	-0.59	-1.40
9,960.86	91.80	270.34	8,590.49	366.74	-1,285.74	1,286.63	1.40	-0.44	-1.33
9,974.43	91.74	270.20	8,590.07	366.80	-1,299.30	1,300.19	1.12	-0.44	-1.03
9,988.00	91.69	270.11	8,589.66	366.84	-1,312.86	1,313.76	0.76	-0.37	-0.66
10,001.57	91.63	270.14	8,589.27	366.87	-1,326.43	1,327.32	0.49	-0.44	0.22
10,015.14	91.59	270.23	8,588.89	366.91	-1,339.99	1,340.89	0.73	-0.29	0.66
10,028.71	91.55	270.35	8,588.51	366.98	-1,353.56	1,354.45	0.93	-0.29	0.88
10,042.29	91.52	270.48	8,588.15	367.08	-1,367.13	1,368.03	0.98	-0.22	0.96
10,055.86	91.51	270.59	8,587.79	367.20	-1,380.70	1,381.59	0.81	-0.07	0.81
10,069.43	92.47	271.22	8,587.32	367.42	-1,394.26	1,395.15	8.46	7.07	4.64
10,083.00	93.33	271.60	8,586.63	367.75	-1,407.81	1,408.70	6.93	6.34	2.80
10,096.43	93.29	271.61	8,585.86	368.13	-1,421.21	1,422.10	0.31	-0.30	0.07
10,109.86	93.22	271.61	8,585.10	368.50	-1,434.61	1,435.51	0.52	-0.52	0.00
10,123.29	93.09	271.60	8,584.36	368.88	-1,448.02	1,448.91	0.97	-0.97	-0.07
10,136.71	92.97	271.59	8,583.65	369.25	-1,461.41	1,462.31	0.90	-0.89	-0.07
10,150.14	92.85	271.57	8,582.97	369.62	-1,474.82	1,475.72	0.91	-0.89	-0.15
10,163.57	92.72	271.56	8,582.31	369.99	-1,488.23	1,489.13	0.97	-0.97	-0.07
10,177.00	92.58	271.56	8,581.69	370.35	-1,501.64	1,502.54	1.04	-1.04	0.00
10,190.57	92.45	271.58	8,581.10	370.72	-1,515.19	1,516.09	0.97	-0.96	0.15
10,204.14	92.33	271.62	8,580.53	371.10	-1,528.74	1,529.65	0.93	-0.88	0.29
10,217.71	92.22	271.66	8,579.99	371.49	-1,542.30	1,543.20	0.86	-0.81	0.29
10,231.29	92.12	271.71	8,579.48	371.89	-1,555.86	1,556.77	0.82	-0.74	0.37



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
10,244.86	92.04	271.76	8,578.99	372.30	-1,569.42	1,570.32	0.70	-0.59	0.37	
10,258.43	91.96	271.81	8,578.51	372.72	-1,582.97	1,583.88	0.70	-0.59	0.37	
10,272.00	91.91	271.85	8,578.05	373.16	-1,596.53	1,597.43	0.47	-0.37	0.29	
10,285.57	91.86	271.90	8,577.61	373.60	-1,610.08	1,610.99	0.52	-0.37	0.37	
10,299.14	91.81	271.94	8,577.17	374.05	-1,623.64	1,624.55	0.47	-0.37	0.29	
10,312.71	91.75	271.98	8,576.75	374.52	-1,637.19	1,638.10	0.53	-0.44	0.29	
10,326.29	91.69	272.02	8,576.34	374.99	-1,650.76	1,651.67	0.53	-0.44	0.29	
10,339.86	91.62	272.05	8,575.95	375.47	-1,664.32	1,665.23	0.56	-0.52	0.22	
10,353.43	91.55	272.09	8,575.58	375.96	-1,677.87	1,678.78	0.59	-0.52	0.29	
10,367.00	91.47	272.12	8,575.22	376.46	-1,691.43	1,692.34	0.63	-0.59	0.22	
10,380.43	91.38	272.16	8,574.89	376.96	-1,704.84	1,705.76	0.73	-0.67	0.30	
10,393.86	91.29	272.19	8,574.57	377.47	-1,718.26	1,719.18	0.71	-0.67	0.22	
10,407.29	91.19	272.22	8,574.28	377.99	-1,731.68	1,732.60	0.78	-0.74	0.22	
10,420.71	91.09	272.27	8,574.01	378.51	-1,745.08	1,746.00	0.83	-0.75	0.37	
10,434.14	90.99	272.32	8,573.77	379.05	-1,758.50	1,759.42	0.83	-0.74	0.37	
10,447.57	90.91	272.40	8,573.55	379.61	-1,771.92	1,772.84	0.84	-0.60	0.60	
10,461.00	90.82	272.51	8,573.35	380.18	-1,785.33	1,786.26	1.06	-0.67	0.82	
10,474.57	90.81	272.68	8,573.15	380.79	-1,798.89	1,799.81	1.25	-0.07	1.25	
10,488.14	90.87	272.87	8,572.95	381.45	-1,812.44	1,813.37	1.47	0.44	1.40	
10,501.71	90.99	273.08	8,572.73	382.16	-1,825.99	1,826.92	1.78	0.88	1.55	
10,515.29	91.16	273.28	8,572.48	382.91	-1,839.55	1,840.48	1.93	1.25	1.47	
10,528.86	91.39	273.47	8,572.18	383.71	-1,853.09	1,854.02	2.20	1.69	1.40	
10,542.43	92.28	272.88	8,571.74	384.46	-1,866.63	1,867.57	7.87	6.56	-4.35	
10,556.00	93.60	272.35	8,571.05	385.08	-1,880.17	1,881.11	10.48	9.73	-3.91	
10,569.57	94.96	272.27	8,570.03	385.62	-1,893.69	1,894.63	10.04	10.02	-0.59	
10,583.14	94.84	272.38	8,568.87	386.17	-1,907.20	1,908.14	1.20	-0.88	0.81	
10,596.71	94.71	272.48	8,567.74	386.74	-1,920.71	1,921.65	1.21	-0.96	0.74	
10,610.29	94.55	272.58	8,566.65	387.34	-1,934.23	1,935.18	1.39	-1.18	0.74	
10,623.86	94.38	272.66	8,565.59	387.96	-1,947.75	1,948.69	1.38	-1.25	0.59	
10,637.43	94.20	272.74	8,564.58	388.60	-1,961.27	1,962.21	1.45	-1.33	0.59	
10,651.00	94.05	272.80	8,563.60	389.25	-1,974.79	1,975.73	1.19	-1.11	0.44	
10,664.57	93.97	272.83	8,562.65	389.92	-1,988.31	1,989.25	0.63	-0.59	0.22	
10,678.14	93.95	272.85	8,561.71	390.59	-2,001.83	2,002.78	0.21	-0.15	0.15	
10,691.71	93.98	272.86	8,560.78	391.26	-2,015.35	2,016.30	0.23	0.22	0.07	
10,705.29	94.03	272.87	8,559.83	391.94	-2,028.88	2,029.83	0.38	0.37	0.07	
10,718.86	94.09	272.87	8,558.87	392.62	-2,042.40	2,043.35	0.44	0.44	0.00	
10,732.43	94.40	271.92	8,557.86	393.18	-2,055.92	2,056.87	7.35	2.28	-7.00	
10,746.00	94.90	270.57	8,556.76	393.48	-2,069.44	2,070.39	10.58	3.68	-9.95	
10,759.57	95.24	269.69	8,555.56	393.51	-2,082.96	2,083.91	6.93	2.51	-6.48	
10,773.14	95.23	269.67	8,554.32	393.43	-2,096.47	2,097.42	0.16	-0.07	-0.15	
10,786.71	95.19	269.66	8,553.09	393.35	-2,109.98	2,110.94	0.30	-0.29	-0.07	
10,800.29	95.10	269.64	8,551.87	393.27	-2,123.51	2,124.46	0.68	-0.66	-0.15	
10,813.86	94.98	269.61	8,550.68	393.18	-2,137.02	2,137.98	0.91	-0.88	-0.22	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
10,827.43	94.83	269.59	8,549.52	393.09	-2,150.54	2,151.50	1.12	-1.11	-0.15	
10,841.00	94.68	269.56	8,548.40	392.99	-2,164.07	2,165.02	1.13	-1.11	-0.22	
10,854.43	94.54	269.54	8,547.32	392.88	-2,177.45	2,178.41	1.05	-1.04	-0.15	
10,867.86	94.42	269.51	8,546.27	392.77	-2,190.84	2,191.80	0.92	-0.89	-0.22	
10,881.29	94.31	269.48	8,545.25	392.65	-2,204.23	2,205.19	0.85	-0.82	-0.22	
10,894.71	94.23	269.45	8,544.25	392.53	-2,217.61	2,218.57	0.64	-0.60	-0.22	
10,908.14	94.18	269.42	8,543.26	392.40	-2,231.01	2,231.96	0.43	-0.37	-0.22	
10,921.57	94.16	269.40	8,542.29	392.26	-2,244.40	2,245.35	0.21	-0.15	-0.15	
10,935.00	94.15	269.37	8,541.31	392.11	-2,257.80	2,258.75	0.23	-0.07	-0.22	
10,948.57	94.16	269.34	8,540.33	391.96	-2,271.33	2,272.28	0.23	0.07	-0.22	
10,962.14	94.19	269.32	8,539.34	391.80	-2,284.86	2,285.81	0.27	0.22	-0.15	
10,975.71	94.24	269.30	8,538.34	391.64	-2,298.39	2,299.34	0.40	0.37	-0.15	
10,989.29	94.28	269.29	8,537.34	391.47	-2,311.94	2,312.89	0.30	0.29	-0.07	
11,002.86	94.32	269.27	8,536.32	391.30	-2,325.47	2,326.42	0.33	0.29	-0.15	
11,016.43	94.37	269.26	8,535.29	391.13	-2,339.00	2,339.95	0.38	0.37	-0.07	
11,030.00	94.43	269.25	8,534.25	390.95	-2,352.53	2,353.47	0.45	0.44	-0.07	
11,043.57	94.51	269.25	8,533.19	390.78	-2,366.05	2,367.00	0.59	0.59	0.00	
11,057.14	94.59	269.25	8,532.12	390.60	-2,379.58	2,380.53	0.59	0.59	0.00	
11,070.71	94.68	269.24	8,531.02	390.42	-2,393.10	2,394.05	0.67	0.66	-0.07	
11,084.29	94.76	269.23	8,529.90	390.24	-2,406.64	2,407.58	0.59	0.59	-0.07	
11,097.86	94.83	269.20	8,528.77	390.06	-2,420.16	2,421.10	0.56	0.52	-0.22	
11,111.43	94.85	269.15	8,527.62	389.86	-2,433.68	2,434.62	0.40	0.15	-0.37	
11,125.00	94.77	269.06	8,526.48	389.65	-2,447.20	2,448.14	0.89	-0.59	-0.66	
11,138.57	94.54	268.89	8,525.38	389.41	-2,460.72	2,461.67	2.11	-1.69	-1.25	
11,152.14	94.29	268.70	8,524.34	389.12	-2,474.25	2,475.19	2.31	-1.84	-1.40	
11,165.71	94.04	268.49	8,523.35	388.79	-2,487.78	2,488.72	2.40	-1.84	-1.55	
11,179.29	93.83	268.27	8,522.42	388.41	-2,501.32	2,502.26	2.24	-1.55	-1.62	
11,192.86	93.64	268.07	8,521.54	387.98	-2,514.86	2,515.80	2.03	-1.40	-1.47	
11,206.43	93.16	267.77	8,520.73	387.48	-2,528.39	2,529.33	4.17	-3.54	-2.21	
11,220.00	93.08	267.65	8,519.99	386.94	-2,541.93	2,542.87	1.06	-0.59	-0.88	
11,233.57	93.04	267.61	8,519.27	386.38	-2,555.47	2,556.41	0.42	-0.29	-0.29	
11,247.14	93.05	267.61	8,518.55	385.82	-2,569.01	2,569.94	0.07	0.07	0.00	
11,260.71	93.09	267.64	8,517.82	385.26	-2,582.55	2,583.48	0.37	0.29	0.22	
11,274.29	93.15	267.68	8,517.08	384.70	-2,596.10	2,597.03	0.53	0.44	0.29	
11,287.86	93.21	267.72	8,516.33	384.16	-2,609.63	2,610.57	0.53	0.44	0.29	
11,301.43	93.25	267.75	8,515.56	383.62	-2,623.17	2,624.10	0.37	0.29	0.22	
11,315.00	93.27	267.74	8,514.79	383.09	-2,636.71	2,637.64	0.16	0.15	-0.07	
11,328.43	93.26	267.68	8,514.03	382.55	-2,650.11	2,651.03	0.45	-0.07	-0.45	
11,341.86	93.20	267.58	8,513.27	382.00	-2,663.51	2,664.43	0.87	-0.45	-0.74	
11,355.29	93.13	267.47	8,512.53	381.42	-2,676.90	2,677.83	0.97	-0.52	-0.82	
11,368.71	92.99	267.36	8,511.81	380.82	-2,690.29	2,691.21	1.33	-1.04	-0.82	
11,382.14	92.81	267.26	8,511.13	380.19	-2,703.69	2,704.61	1.53	-1.34	-0.74	
11,395.57	92.59	267.20	8,510.50	379.54	-2,717.09	2,718.01	1.70	-1.64	-0.45	
11,409.00	92.38	267.19	8,509.92	378.88	-2,730.49	2,731.41	1.57	-1.56	-0.07	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
11,422.57	92.18	267.28	8,509.38	378.23	-2,744.03	2,744.95	1.62	-1.47	0.66
11,436.14	92.03	267.41	8,508.88	377.60	-2,757.58	2,758.49	1.46	-1.11	0.96
11,449.71	91.90	267.57	8,508.42	377.01	-2,771.13	2,772.04	1.52	-0.96	1.18
11,463.29	91.73	267.73	8,507.99	376.45	-2,784.69	2,785.60	1.72	-1.25	1.18
11,476.86	91.51	267.87	8,507.60	375.93	-2,798.24	2,799.15	1.92	-1.62	1.03
11,490.43	91.37	268.56	8,507.26	375.51	-2,811.80	2,812.71	5.19	-1.03	5.08
11,504.00	91.25	269.69	8,506.95	375.30	-2,825.37	2,826.28	8.37	-0.88	8.33
11,517.57	91.08	270.36	8,506.67	375.30	-2,838.93	2,839.84	5.09	-1.25	4.94
11,531.14	90.84	270.30	8,506.45	375.38	-2,852.50	2,853.41	1.82	-1.77	-0.44
11,544.71	90.73	270.22	8,506.26	375.44	-2,866.07	2,866.98	1.00	-0.81	-0.59
11,558.29	90.65	270.13	8,506.10	375.49	-2,879.65	2,880.56	0.89	-0.59	-0.66
11,571.86	90.59	270.05	8,505.95	375.51	-2,893.22	2,894.13	0.74	-0.44	-0.59
11,585.43	90.56	269.98	8,505.82	375.51	-2,906.79	2,907.70	0.56	-0.22	-0.52
11,599.00	90.53	269.95	8,505.69	375.50	-2,920.36	2,921.27	0.31	-0.22	-0.22
11,612.57	90.50	269.98	8,505.56	375.49	-2,933.93	2,934.84	0.31	-0.22	0.22
11,626.14	90.49	270.05	8,505.45	375.50	-2,947.50	2,948.40	0.52	-0.07	0.52
11,639.71	90.49	270.14	8,505.33	375.52	-2,961.07	2,961.97	0.66	0.00	0.66
11,653.29	90.50	270.25	8,505.21	375.57	-2,974.65	2,975.55	0.81	0.07	0.81
11,666.86	90.52	270.35	8,505.09	375.64	-2,988.21	2,989.12	0.75	0.15	0.74
11,680.43	91.28	270.60	8,504.88	375.75	-3,001.78	3,002.69	5.90	5.60	1.84
11,694.00	92.02	270.96	8,504.49	375.93	-3,015.35	3,016.25	6.06	5.45	2.65
11,707.43	91.97	271.04	8,504.02	376.17	-3,028.76	3,029.67	0.70	-0.37	0.60
11,720.86	91.92	271.12	8,503.57	376.42	-3,042.18	3,043.10	0.70	-0.37	0.60
11,734.29	91.90	271.19	8,503.12	376.69	-3,055.60	3,056.52	0.54	-0.15	0.52
11,747.71	91.89	271.26	8,502.67	376.98	-3,069.01	3,069.93	0.53	-0.07	0.52
11,761.14	91.89	271.31	8,502.23	377.28	-3,082.43	3,083.35	0.37	0.00	0.37
11,774.57	92.39	271.49	8,501.73	377.61	-3,095.85	3,096.76	3.96	3.72	1.34
11,788.00	92.63	271.58	8,501.14	377.97	-3,109.26	3,110.18	1.91	1.79	0.67
11,801.57	92.62	271.57	8,500.52	378.34	-3,122.81	3,123.73	0.10	-0.07	-0.07
11,815.14	92.60	271.54	8,499.90	378.71	-3,136.36	3,137.28	0.27	-0.15	-0.22
11,828.71	92.56	271.50	8,499.29	379.07	-3,149.92	3,150.83	0.42	-0.29	-0.29
11,842.29	92.55	271.45	8,498.69	379.42	-3,163.48	3,164.40	0.38	-0.07	-0.37
11,855.86	92.55	271.39	8,498.08	379.75	-3,177.03	3,177.95	0.44	0.00	-0.44
11,869.43	92.56	271.35	8,497.48	380.08	-3,190.58	3,191.50	0.30	0.07	-0.29
11,883.00	92.56	271.31	8,496.87	380.39	-3,204.14	3,205.06	0.29	0.00	-0.29
11,896.57	92.58	271.28	8,496.26	380.70	-3,217.69	3,218.61	0.27	0.15	-0.22
11,910.14	92.59	271.26	8,495.65	381.00	-3,231.24	3,232.16	0.16	0.07	-0.15
11,923.71	92.59	271.25	8,495.04	381.30	-3,244.79	3,245.72	0.07	0.00	-0.07
11,937.29	92.57	271.24	8,494.43	381.59	-3,258.36	3,259.28	0.16	-0.15	-0.07
11,950.86	92.55	271.24	8,493.82	381.88	-3,271.91	3,272.83	0.15	-0.15	0.00
11,964.43	92.52	271.23	8,493.22	382.18	-3,285.46	3,286.39	0.23	-0.22	-0.07
11,978.00	92.49	271.22	8,492.63	382.47	-3,299.02	3,299.94	0.23	-0.22	-0.07
11,991.57	92.45	271.20	8,492.04	382.75	-3,312.57	3,313.50	0.33	-0.29	-0.15



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
12,005.14	92.41	271.19	8,491.47	383.03	-3,326.13	3,327.05	0.30	-0.29	-0.07	
12,018.71	92.38	271.18	8,490.90	383.31	-3,339.68	3,340.61	0.23	-0.22	-0.07	
12,032.29	92.32	271.17	8,490.34	383.59	-3,353.25	3,354.18	0.45	-0.44	-0.07	
12,045.86	92.27	271.17	8,489.80	383.87	-3,366.80	3,367.73	0.37	-0.37	0.00	
12,059.43	92.22	271.19	8,489.27	384.15	-3,380.36	3,381.29	0.40	-0.37	0.15	
12,073.00	92.17	271.23	8,488.75	384.44	-3,393.92	3,394.85	0.47	-0.37	0.29	
12,086.43	92.12	271.32	8,488.25	384.73	-3,407.34	3,408.27	0.77	-0.37	0.67	
12,099.86	92.05	271.43	8,487.76	385.06	-3,420.75	3,421.68	0.97	-0.52	0.82	
12,113.29	91.95	271.55	8,487.29	385.41	-3,434.17	3,435.10	1.16	-0.74	0.89	
12,126.71	91.87	271.66	8,486.84	385.78	-3,447.58	3,448.51	1.01	-0.60	0.82	
12,140.14	91.80	271.77	8,486.41	386.18	-3,460.99	3,461.93	0.97	-0.52	0.82	
12,153.57	92.00	271.79	8,485.97	386.60	-3,474.41	3,475.34	1.50	1.49	0.15	
12,167.00	93.10	271.59	8,485.37	387.00	-3,487.82	3,488.76	8.32	8.19	-1.49	
12,180.57	93.13	271.60	8,484.63	387.37	-3,501.37	3,502.30	0.23	0.22	0.07	
12,194.14	93.23	271.59	8,483.88	387.75	-3,514.91	3,515.85	0.74	0.74	-0.07	
12,207.71	93.28	271.57	8,483.11	388.12	-3,528.45	3,529.39	0.40	0.37	-0.15	
12,221.29	93.28	271.54	8,482.33	388.49	-3,542.01	3,542.94	0.22	0.00	-0.22	
12,234.86	93.28	271.50	8,481.55	388.85	-3,555.55	3,556.49	0.29	0.00	-0.29	
12,248.43	93.27	271.46	8,480.78	389.20	-3,569.09	3,570.03	0.30	-0.07	-0.29	
12,262.00	93.26	271.42	8,480.01	389.54	-3,582.64	3,583.58	0.30	-0.07	-0.29	
12,275.57	93.25	271.38	8,479.24	389.87	-3,596.18	3,597.12	0.30	-0.07	-0.29	
12,289.14	93.24	271.34	8,478.47	390.19	-3,609.72	3,610.67	0.30	-0.07	-0.29	
12,302.71	93.23	271.30	8,477.70	390.51	-3,623.27	3,624.21	0.30	-0.07	-0.29	
12,316.29	93.22	271.26	8,476.94	390.81	-3,636.82	3,637.77	0.30	-0.07	-0.29	
12,329.86	93.20	271.22	8,476.18	391.10	-3,650.37	3,651.31	0.33	-0.15	-0.29	
12,343.43	93.18	271.18	8,475.42	391.39	-3,663.92	3,664.86	0.33	-0.15	-0.29	
12,357.00	93.15	271.14	8,474.67	391.66	-3,677.46	3,678.41	0.37	-0.22	-0.29	
12,370.57	93.10	271.10	8,473.93	391.92	-3,691.01	3,691.96	0.47	-0.37	-0.29	
12,377.66	93.09	271.08	8,473.55	392.06	-3,698.09	3,699.04	0.33	-0.15	-0.29	
03-V3700(S-132H)										
12,384.14	93.08	271.06	8,473.20	392.18	-3,704.56	3,705.50	0.33	-0.15	-0.29	
12,397.71	93.07	271.02	8,472.47	392.43	-3,718.10	3,719.05	0.30	-0.07	-0.29	
12,411.29	93.05	270.98	8,471.75	392.66	-3,731.66	3,732.61	0.33	-0.15	-0.29	
12,424.86	93.05	270.93	8,471.03	392.89	-3,745.21	3,746.16	0.37	0.00	-0.37	
12,438.43	93.08	270.87	8,470.30	393.10	-3,758.76	3,759.71	0.49	0.22	-0.44	
12,452.00	93.12	270.80	8,469.57	393.30	-3,772.31	3,773.26	0.59	0.29	-0.52	
12,465.43	93.08	270.72	8,468.84	393.48	-3,785.72	3,786.67	0.67	-0.30	-0.60	
12,478.86	93.01	270.62	8,468.13	393.63	-3,799.13	3,800.08	0.91	-0.52	-0.74	
12,492.29	92.96	270.53	8,467.43	393.77	-3,812.54	3,813.49	0.77	-0.37	-0.67	
12,505.71	92.88	270.43	8,466.74	393.88	-3,825.94	3,826.89	0.95	-0.60	-0.75	
12,519.14	92.74	270.34	8,466.09	393.97	-3,839.36	3,840.31	1.24	-1.04	-0.67	
12,532.57	92.23	270.19	8,465.50	394.03	-3,852.77	3,853.72	3.96	-3.80	-1.12	
12,546.00	91.63	270.03	8,465.05	394.06	-3,866.20	3,867.15	4.62	-4.47	-1.19	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
12,559.57	91.51	270.00	8,464.68	394.06	-3,879.76	3,880.71	0.91	-0.88	-0.22
12,573.14	91.44	269.99	8,464.33	394.06	-3,893.33	3,894.28	0.52	-0.52	-0.07
12,586.71	91.43	269.99	8,463.99	394.06	-3,906.89	3,907.84	0.07	-0.07	0.00
12,600.29	91.43	269.98	8,463.65	394.05	-3,920.47	3,921.42	0.07	0.00	-0.07
12,613.86	91.43	269.97	8,463.31	394.05	-3,934.03	3,934.98	0.07	0.00	-0.07
12,627.43	91.40	269.94	8,462.98	394.04	-3,947.60	3,948.55	0.31	-0.22	-0.22
12,641.00	91.37	269.89	8,462.65	394.02	-3,961.17	3,962.12	0.43	-0.22	-0.37
12,654.57	91.32	269.80	8,462.33	393.98	-3,974.73	3,975.68	0.76	-0.37	-0.66
12,668.14	91.30	269.68	8,462.02	393.92	-3,988.30	3,989.25	0.90	-0.15	-0.88
12,681.71	91.36	269.55	8,461.71	393.83	-4,001.86	4,002.81	1.05	0.44	-0.96
12,695.29	91.44	269.42	8,461.37	393.71	-4,015.44	4,016.39	1.12	0.59	-0.96
12,708.86	91.51	269.28	8,461.03	393.55	-4,029.00	4,029.95	1.15	0.52	-1.03
12,722.43	91.46	269.14	8,460.67	393.37	-4,042.57	4,043.52	1.10	-0.37	-1.03
12,736.00	90.54	268.72	8,460.44	393.11	-4,056.13	4,057.08	7.45	-6.78	-3.10
12,749.43	90.28	268.59	8,460.34	392.80	-4,069.56	4,070.51	2.16	-1.94	-0.97
12,762.86	90.19	268.52	8,460.29	392.46	-4,082.98	4,083.93	0.85	-0.67	-0.52
12,776.29	90.11	268.45	8,460.25	392.10	-4,096.41	4,097.36	0.79	-0.60	-0.52
12,789.71	90.06	268.38	8,460.23	391.73	-4,109.82	4,110.77	0.64	-0.37	-0.52
12,803.14	90.04	268.32	8,460.22	391.35	-4,123.25	4,124.19	0.47	-0.15	-0.45
12,816.57	90.05	268.26	8,460.21	390.94	-4,136.67	4,137.62	0.45	0.07	-0.45
12,830.00	90.07	268.20	8,460.19	390.53	-4,150.10	4,151.04	0.47	0.15	-0.45
12,843.57	90.13	268.13	8,460.17	390.10	-4,163.66	4,164.60	0.68	0.44	-0.52
12,857.14	90.19	268.07	8,460.13	389.65	-4,177.22	4,178.16	0.63	0.44	-0.44
12,870.71	90.27	268.01	8,460.08	389.18	-4,190.78	4,191.72	0.74	0.59	-0.44
12,884.29	90.34	267.95	8,460.01	388.70	-4,204.36	4,205.29	0.68	0.52	-0.44
12,897.86	90.39	267.89	8,459.92	388.21	-4,217.92	4,218.85	0.58	0.37	-0.44
12,911.43	90.40	267.83	8,459.83	387.70	-4,231.48	4,232.41	0.45	0.07	-0.44
12,925.00	90.41	267.78	8,459.73	387.18	-4,245.04	4,245.97	0.38	0.07	-0.37
12,938.57	90.37	267.74	8,459.64	386.65	-4,258.60	4,259.53	0.42	-0.29	-0.29
12,952.14	90.32	267.70	8,459.56	386.11	-4,272.15	4,273.09	0.47	-0.37	-0.29
12,965.71	90.30	267.66	8,459.48	385.56	-4,285.71	4,286.64	0.33	-0.15	-0.29
12,979.29	90.29	267.62	8,459.41	385.00	-4,299.28	4,300.21	0.30	-0.07	-0.29
12,992.86	90.30	267.58	8,459.34	384.44	-4,312.84	4,313.77	0.30	0.07	-0.29
13,006.43	90.28	267.53	8,459.27	383.86	-4,326.40	4,327.32	0.40	-0.15	-0.37
13,020.00	90.18	267.48	8,459.22	383.27	-4,339.95	4,340.88	0.82	-0.74	-0.37
13,033.43	89.97	267.41	8,459.20	382.67	-4,353.37	4,354.29	1.65	-1.56	-0.52
13,046.86	89.68	267.34	8,459.24	382.05	-4,366.79	4,367.71	2.22	-2.16	-0.52
13,060.29	89.32	267.27	8,459.36	381.42	-4,380.20	4,381.12	2.73	-2.68	-0.52
13,073.71	88.94	267.20	8,459.56	380.77	-4,393.60	4,394.52	2.88	-2.83	-0.52
13,087.14	88.55	267.13	8,459.86	380.11	-4,407.01	4,407.93	2.95	-2.90	-0.52
13,100.57	88.19	267.93	8,460.24	379.53	-4,420.43	4,421.34	6.53	-2.68	5.96
13,114.00	88.13	268.96	8,460.67	379.17	-4,433.84	4,434.76	7.68	-0.45	7.67
13,127.57	88.10	269.24	8,461.12	378.95	-4,447.41	4,448.32	2.07	-0.22	2.06
13,141.14	88.04	269.23	8,461.57	378.77	-4,460.97	4,461.88	0.45	-0.44	-0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
13,154.71	88.07	269.23	8,462.04	378.59	-4,474.53	4,475.44	0.22	0.22	0.00
13,168.29	88.12	269.22	8,462.49	378.41	-4,488.10	4,489.01	0.38	0.37	-0.07
13,181.86	88.18	269.22	8,462.92	378.22	-4,501.66	4,502.57	0.44	0.44	0.00
13,195.43	88.23	269.22	8,463.35	378.04	-4,515.22	4,516.13	0.37	0.37	0.00
13,209.00	88.26	269.22	8,463.77	377.85	-4,528.78	4,529.69	0.22	0.22	0.00
13,222.57	88.25	269.20	8,464.18	377.67	-4,542.35	4,543.26	0.16	-0.07	-0.15
13,236.14	88.23	269.18	8,464.60	377.47	-4,555.91	4,556.82	0.21	-0.15	-0.15
13,249.71	88.23	269.16	8,465.01	377.28	-4,569.47	4,570.38	0.15	0.00	-0.15
13,263.29	88.24	269.13	8,465.43	377.08	-4,583.04	4,583.95	0.23	0.07	-0.22
13,276.86	88.27	269.10	8,465.85	376.87	-4,596.61	4,597.51	0.31	0.22	-0.22
13,290.43	88.37	269.08	8,466.24	376.65	-4,610.17	4,611.07	0.75	0.74	-0.15
13,304.00	88.53	269.05	8,466.61	376.43	-4,623.73	4,624.64	1.20	1.18	-0.22
13,317.57	88.75	269.02	8,466.93	376.20	-4,637.30	4,638.20	1.64	1.62	-0.22
13,331.14	88.97	268.98	8,467.20	375.96	-4,650.86	4,651.77	1.65	1.62	-0.29
13,344.71	89.15	268.95	8,467.43	375.72	-4,664.43	4,665.33	1.34	1.33	-0.22
13,358.29	89.26	268.92	8,467.61	375.47	-4,678.00	4,678.91	0.84	0.81	-0.22
13,371.86	89.29	268.89	8,467.79	375.21	-4,691.57	4,692.47	0.31	0.22	-0.22
13,385.43	89.26	268.86	8,467.96	374.94	-4,705.14	4,706.04	0.31	-0.22	-0.22
13,399.00	89.24	268.83	8,468.14	374.67	-4,718.70	4,719.60	0.27	-0.15	-0.22
13,412.43	89.25	268.80	8,468.31	374.39	-4,732.13	4,733.03	0.24	0.07	-0.22
13,425.86	89.25	268.77	8,468.49	374.11	-4,745.55	4,746.45	0.22	0.00	-0.22
13,439.29	89.22	268.74	8,468.67	373.81	-4,758.98	4,759.88	0.32	-0.22	-0.22
13,452.71	89.13	268.71	8,468.86	373.51	-4,772.39	4,773.29	0.71	-0.67	-0.22
13,466.14	89.03	268.67	8,469.08	373.21	-4,785.82	4,786.72	0.80	-0.74	-0.30
13,479.57	88.98	268.63	8,469.31	372.89	-4,799.24	4,800.14	0.48	-0.37	-0.30
13,493.00	88.95	268.58	8,469.55	372.56	-4,812.67	4,813.56	0.43	-0.22	-0.37
13,506.57	88.95	268.51	8,469.80	372.22	-4,826.23	4,827.13	0.52	0.00	-0.52
13,520.14	88.98	268.43	8,470.05	371.86	-4,839.79	4,840.69	0.63	0.22	-0.59
13,533.71	89.03	268.36	8,470.28	371.48	-4,853.36	4,854.25	0.63	0.37	-0.52
13,547.29	89.05	268.29	8,470.51	371.08	-4,866.93	4,867.82	0.54	0.15	-0.52
13,560.86	89.04	268.24	8,470.73	370.67	-4,880.49	4,881.38	0.38	-0.07	-0.37
13,574.43	88.98	268.22	8,470.97	370.25	-4,894.05	4,894.94	0.47	-0.44	-0.15
13,588.00	88.93	268.23	8,471.22	369.83	-4,907.61	4,908.50	0.38	-0.37	0.07
13,601.57	88.90	268.30	8,471.47	369.42	-4,921.17	4,922.06	0.56	-0.22	0.52
13,615.14	88.83	268.41	8,471.74	369.03	-4,934.74	4,935.62	0.96	-0.52	0.81
13,628.71	88.74	268.55	8,472.03	368.67	-4,948.30	4,949.18	1.23	-0.66	1.03
13,642.29	88.56	268.68	8,472.35	368.34	-4,961.87	4,962.76	1.63	-1.33	0.96
13,655.86	88.29	268.82	8,472.72	368.05	-4,975.43	4,976.32	2.24	-1.99	1.03
13,669.43	88.18	269.55	8,473.14	367.85	-4,988.99	4,989.88	5.44	-0.81	5.38
13,680.24	88.15	270.32	8,473.49	367.84	-4,999.80	5,000.68	7.15	-0.30	7.15
04-V5000(S-132H)									
13,683.00	88.14	270.52	8,473.58	367.86	-5,002.56	5,003.44	7.15	-0.29	7.15
13,696.43	88.15	271.15	8,474.01	368.06	-5,015.98	5,016.86	4.69	0.07	4.69



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
13,709.86	88.20	271.27	8,474.44	368.34	-5,029.40	5,030.28	0.97	0.37	0.89
13,723.29	88.38	271.39	8,474.84	368.65	-5,042.82	5,043.71	1.61	1.34	0.89
13,736.71	88.58	271.51	8,475.20	368.99	-5,056.23	5,057.12	1.74	1.49	0.89
13,750.14	88.78	271.61	8,475.51	369.36	-5,069.65	5,070.54	1.66	1.49	0.74
13,763.57	89.33	271.77	8,475.73	369.75	-5,083.07	5,083.96	4.27	4.10	1.19
13,777.00	89.81	271.90	8,475.83	370.18	-5,096.50	5,097.39	3.70	3.57	0.97
13,790.57	89.97	271.92	8,475.85	370.64	-5,110.06	5,110.95	1.19	1.18	0.15
13,804.14	90.10	271.91	8,475.85	371.09	-5,123.62	5,124.51	0.96	0.96	-0.07
13,817.71	90.18	271.89	8,475.81	371.54	-5,137.18	5,138.08	0.61	0.59	-0.15
13,831.29	90.21	271.86	8,475.77	371.98	-5,150.76	5,151.65	0.31	0.22	-0.22
13,844.86	90.20	271.82	8,475.72	372.42	-5,164.32	5,165.21	0.30	-0.07	-0.29
13,858.43	90.12	271.77	8,475.68	372.84	-5,177.88	5,178.78	0.70	-0.59	-0.37
13,872.00	89.95	271.70	8,475.67	373.26	-5,191.45	5,192.34	1.35	-1.25	-0.52
13,885.57	89.66	271.62	8,475.72	373.65	-5,205.01	5,205.91	2.22	-2.14	-0.59
13,899.14	89.29	271.52	8,475.84	374.02	-5,218.58	5,219.47	2.82	-2.73	-0.74
13,912.71	88.96	271.43	8,476.05	374.37	-5,232.14	5,233.04	2.52	-2.43	-0.66
13,926.29	88.77	271.33	8,476.32	374.70	-5,245.71	5,246.61	1.58	-1.40	-0.74
13,939.86	88.70	271.25	8,476.62	375.00	-5,259.28	5,260.18	0.78	-0.52	-0.59
13,953.43	88.72	271.17	8,476.92	375.29	-5,272.84	5,273.74	0.61	0.15	-0.59
13,967.00	88.80	271.12	8,477.22	375.56	-5,286.40	5,287.31	0.70	0.59	-0.37
13,980.57	88.92	271.11	8,477.49	375.82	-5,299.97	5,300.87	0.89	0.88	-0.07
13,994.14	89.09	271.11	8,477.72	376.09	-5,313.53	5,314.44	1.25	1.25	0.00
14,007.71	89.32	271.13	8,477.91	376.35	-5,327.10	5,328.00	1.70	1.69	0.15
14,021.29	89.57	271.16	8,478.04	376.62	-5,340.68	5,341.58	1.85	1.84	0.22
14,034.86	89.82	271.17	8,478.11	376.90	-5,354.24	5,355.15	1.84	1.84	0.07
14,048.43	90.02	271.18	8,478.13	377.18	-5,367.81	5,368.72	1.48	1.47	0.07
14,062.00	90.15	271.16	8,478.11	377.45	-5,381.38	5,382.28	0.97	0.96	-0.15
14,075.43	90.18	271.09	8,478.07	377.72	-5,394.80	5,395.71	0.57	0.22	-0.52
14,088.86	90.16	271.00	8,478.03	377.96	-5,408.23	5,409.14	0.69	-0.15	-0.67
14,102.29	90.11	270.90	8,478.00	378.19	-5,421.66	5,422.57	0.83	-0.37	-0.74
14,115.71	89.98	270.80	8,477.99	378.38	-5,435.08	5,435.99	1.22	-0.97	-0.75
14,129.14	89.76	270.71	8,478.02	378.56	-5,448.51	5,449.42	1.77	-1.64	-0.67
14,142.57	89.48	270.64	8,478.11	378.72	-5,461.94	5,462.85	2.15	-2.08	-0.52
14,156.00	89.13	270.60	8,478.28	378.86	-5,475.36	5,476.27	2.62	-2.61	-0.30
14,169.57	88.88	270.61	8,478.51	379.01	-5,488.93	5,489.84	1.84	-1.84	0.07
14,183.14	88.74	270.65	8,478.79	379.16	-5,502.50	5,503.41	1.07	-1.03	0.29
14,196.71	88.73	270.72	8,479.09	379.32	-5,516.06	5,516.97	0.52	-0.07	0.52
14,210.29	88.76	270.80	8,479.39	379.50	-5,529.64	5,530.55	0.63	0.22	0.59
14,223.86	88.79	270.90	8,479.68	379.70	-5,543.21	5,544.12	0.77	0.22	0.74
14,237.43	89.11	270.95	8,479.93	379.92	-5,556.77	5,557.68	2.39	2.36	0.37
14,251.00	89.82	271.00	8,480.06	380.15	-5,570.34	5,571.25	5.25	5.23	0.37
14,264.57	89.76	271.17	8,480.10	380.41	-5,583.91	5,584.82	1.33	-0.44	1.25
14,278.14	89.41	271.35	8,480.20	380.71	-5,597.47	5,598.39	2.90	-2.58	1.33
14,291.71	89.18	271.54	8,480.37	381.05	-5,611.04	5,611.95	2.20	-1.69	1.40



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
14,305.29	89.08	271.74	8,480.58	381.44	-5,624.61	5,625.52	1.65	-0.74	1.47
14,318.86	88.99	271.92	8,480.80	381.87	-5,638.17	5,639.09	1.48	-0.66	1.33
14,332.43	89.73	272.28	8,480.96	382.37	-5,651.73	5,652.65	6.06	5.45	2.65
14,346.00	90.52	272.53	8,480.93	382.94	-5,665.29	5,666.21	6.11	5.82	1.84
14,359.57	91.34	272.51	8,480.71	383.53	-5,678.84	5,679.76	6.04	6.04	-0.15
14,373.14	91.03	272.60	8,480.43	384.14	-5,692.40	5,693.32	2.38	-2.28	0.66
14,386.71	90.58	272.77	8,480.24	384.77	-5,705.95	5,706.87	3.54	-3.32	1.25
14,400.29	90.38	272.95	8,480.12	385.45	-5,719.51	5,720.44	1.98	-1.47	1.33
14,413.86	90.41	273.12	8,480.03	386.17	-5,733.06	5,733.99	1.27	0.22	1.25
14,427.43	90.59	273.29	8,479.91	386.93	-5,746.61	5,747.54	1.82	1.33	1.25
14,441.00	91.82	273.14	8,479.62	387.69	-5,760.16	5,761.09	9.13	9.06	-1.11
14,454.43	93.12	272.96	8,479.05	388.40	-5,773.56	5,774.49	9.77	9.68	-1.34
14,467.86	94.40	272.62	8,478.16	389.06	-5,786.94	5,787.87	9.86	9.53	-2.53
14,481.29	94.63	272.76	8,477.11	389.68	-5,800.31	5,801.25	2.00	1.71	1.04
14,494.71	94.67	273.00	8,476.02	390.36	-5,813.67	5,814.61	1.81	0.30	1.79
14,508.14	94.66	273.23	8,474.93	391.08	-5,827.04	5,827.98	1.71	-0.07	1.71
14,521.57	94.61	273.41	8,473.84	391.86	-5,840.40	5,841.34	1.39	-0.37	1.34
14,535.00	94.51	273.51	8,472.77	392.67	-5,853.77	5,854.71	1.05	-0.74	0.74
14,548.57	94.44	273.46	8,471.72	393.49	-5,867.27	5,868.21	0.63	-0.52	-0.37
14,562.14	94.40	273.32	8,470.67	394.29	-5,880.78	5,881.72	1.07	-0.29	-1.03
14,575.71	94.39	273.12	8,469.63	395.05	-5,894.28	5,895.23	1.47	-0.07	-1.47
14,589.29	94.40	272.90	8,468.59	395.76	-5,907.81	5,908.75	1.62	0.07	-1.62
14,602.86	94.44	272.67	8,467.54	396.42	-5,921.32	5,922.27	1.72	0.29	-1.69
14,616.43	94.27	272.11	8,466.51	396.98	-5,934.84	5,935.79	4.30	-1.25	-4.13
14,630.00	93.62	270.94	8,465.58	397.34	-5,948.37	5,949.32	9.85	-4.79	-8.62
14,643.57	93.26	270.28	8,464.77	397.49	-5,961.92	5,962.87	5.53	-2.65	-4.86
14,657.14	93.22	270.13	8,464.00	397.53	-5,975.46	5,976.42	1.14	-0.29	-1.11
14,670.71	93.14	269.99	8,463.25	397.55	-5,989.01	5,989.97	1.19	-0.59	-1.03
14,684.29	93.01	269.85	8,462.52	397.53	-6,002.57	6,003.53	1.41	-0.96	-1.03
14,697.86	92.79	269.71	8,461.83	397.48	-6,016.13	6,017.08	1.92	-1.62	-1.03
14,711.43	92.13	269.68	8,461.25	397.41	-6,029.68	6,030.64	4.87	-4.86	-0.22
14,725.00	90.98	269.55	8,460.88	397.31	-6,043.25	6,044.20	8.53	-8.47	-0.96
14,738.43	89.64	269.50	8,460.81	397.20	-6,056.68	6,057.63	9.98	-9.98	-0.37
14,751.86	88.87	269.58	8,460.98	397.10	-6,070.10	6,071.06	5.76	-5.73	0.60
14,765.29	88.79	269.41	8,461.26	396.98	-6,083.53	6,084.48	1.40	-0.60	-1.27
14,778.71	88.78	269.24	8,461.54	396.82	-6,096.95	6,097.90	1.27	-0.07	-1.27
14,792.14	88.81	269.06	8,461.82	396.62	-6,110.37	6,111.32	1.36	0.22	-1.34
14,805.57	88.89	268.91	8,462.09	396.38	-6,123.80	6,124.75	1.27	0.60	-1.12
14,819.00	88.96	268.79	8,462.34	396.11	-6,137.22	6,138.17	1.03	0.52	-0.89
14,832.57	88.98	268.73	8,462.59	395.82	-6,150.79	6,151.74	0.47	0.15	-0.44
14,846.14	88.96	268.71	8,462.83	395.52	-6,164.35	6,165.30	0.21	-0.15	-0.15
14,859.71	88.91	268.71	8,463.08	395.21	-6,177.92	6,178.86	0.37	-0.37	0.00
14,873.29	88.87	268.72	8,463.35	394.91	-6,191.49	6,192.44	0.30	-0.29	0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
14,886.86	88.83	268.74	8,463.62	394.60	-6,205.05	6,206.00	0.33	-0.29	0.15
14,900.43	88.78	268.76	8,463.90	394.31	-6,218.62	6,219.56	0.40	-0.37	0.15
14,914.00	88.71	268.77	8,464.20	394.02	-6,232.18	6,233.13	0.52	-0.52	0.07
14,927.43	88.63	268.75	8,464.51	393.73	-6,245.61	6,246.55	0.61	-0.60	-0.15
14,940.86	88.56	268.72	8,464.84	393.43	-6,259.03	6,259.97	0.57	-0.52	-0.22
14,954.29	88.50	268.69	8,465.19	393.13	-6,272.45	6,273.39	0.50	-0.45	-0.22
14,967.71	88.45	268.65	8,465.54	392.81	-6,285.86	6,286.80	0.48	-0.37	-0.30
14,981.14	88.42	268.62	8,465.91	392.49	-6,299.28	6,300.22	0.32	-0.22	-0.22
14,994.57	88.42	268.60	8,466.28	392.17	-6,312.70	6,313.64	0.15	0.00	-0.15
15,008.00	88.41	268.59	8,466.65	391.84	-6,326.12	6,327.06	0.11	-0.07	-0.07
15,021.57	88.42	268.60	8,467.03	391.51	-6,339.69	6,340.62	0.10	0.07	0.07
15,035.14	88.41	268.63	8,467.40	391.18	-6,353.25	6,354.18	0.23	-0.07	0.22
15,048.71	88.42	268.67	8,467.78	390.86	-6,366.81	6,367.74	0.30	0.07	0.29
15,062.29	88.45	268.71	8,468.15	390.55	-6,380.38	6,381.31	0.37	0.22	0.29
15,075.86	88.49	268.75	8,468.51	390.25	-6,393.94	6,394.87	0.42	0.29	0.29
15,089.43	88.53	268.79	8,468.86	389.96	-6,407.50	6,408.44	0.42	0.29	0.29
15,103.00	88.57	268.83	8,469.21	389.68	-6,421.07	6,422.00	0.42	0.29	0.29
15,116.43	88.57	268.86	8,469.54	389.41	-6,434.49	6,435.42	0.22	0.00	0.22
15,129.86	88.56	268.88	8,469.88	389.14	-6,447.91	6,448.84	0.17	-0.07	0.15
15,143.29	88.54	268.90	8,470.22	388.88	-6,461.33	6,462.27	0.21	-0.15	0.15
15,156.71	88.54	268.91	8,470.56	388.62	-6,474.75	6,475.68	0.07	0.00	0.07
15,170.14	88.53	268.92	8,470.90	388.37	-6,488.17	6,489.10	0.11	-0.07	0.07
15,183.57	88.50	268.93	8,471.25	388.12	-6,501.59	6,502.52	0.24	-0.22	0.07
15,197.00	88.50	268.94	8,471.60	387.87	-6,515.02	6,515.95	0.07	0.00	0.07
15,210.57	88.50	268.95	8,471.96	387.62	-6,528.58	6,529.51	0.07	0.00	0.07
15,224.14	88.48	268.96	8,472.32	387.37	-6,542.14	6,543.07	0.16	-0.15	0.07
15,237.71	88.47	268.97	8,472.68	387.13	-6,555.71	6,556.63	0.10	-0.07	0.07
15,251.29	88.44	268.98	8,473.04	386.88	-6,569.28	6,570.21	0.23	-0.22	0.07
15,264.86	88.39	268.99	8,473.42	386.64	-6,582.84	6,583.77	0.38	-0.37	0.07
15,278.43	88.33	269.01	8,473.81	386.41	-6,596.40	6,597.33	0.47	-0.44	0.15
15,292.00	88.26	269.03	8,474.21	386.17	-6,609.97	6,610.89	0.54	-0.52	0.15
15,305.43	88.25	269.06	8,474.62	385.95	-6,623.39	6,624.31	0.24	-0.07	0.22
15,318.86	88.29	269.09	8,475.02	385.73	-6,636.81	6,637.73	0.37	0.30	0.22
15,332.29	88.34	269.12	8,475.42	385.52	-6,650.23	6,651.16	0.43	0.37	0.22
15,345.71	88.38	269.16	8,475.80	385.32	-6,663.65	6,664.57	0.42	0.30	0.30
15,359.14	88.44	269.20	8,476.18	385.13	-6,677.07	6,677.99	0.54	0.45	0.30
15,372.57	88.55	269.23	8,476.53	384.95	-6,690.49	6,691.41	0.85	0.82	0.22
15,386.00	88.69	269.26	8,476.85	384.77	-6,703.92	6,704.84	1.07	1.04	0.22
15,399.57	88.75	269.28	8,477.16	384.60	-6,717.48	6,718.40	0.47	0.44	0.15
15,413.14	88.74	269.30	8,477.45	384.43	-6,731.05	6,731.97	0.16	-0.07	0.15
15,426.71	88.69	269.31	8,477.76	384.26	-6,744.62	6,745.53	0.38	-0.37	0.07
15,440.29	88.70	269.33	8,478.07	384.10	-6,758.19	6,759.11	0.16	0.07	0.15
15,453.86	88.79	269.36	8,478.36	383.95	-6,771.76	6,772.67	0.70	0.66	0.22



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
15,467.43	88.88	269.40	8,478.64	383.80	-6,785.32	6,786.24	0.73	0.66	0.29	
15,481.00	88.94	269.46	8,478.90	383.67	-6,798.89	6,799.81	0.63	0.44	0.44	
15,494.43	89.03	269.56	8,479.14	383.55	-6,812.32	6,813.23	1.00	0.67	0.74	
15,507.86	89.16	269.68	8,479.35	383.46	-6,825.75	6,826.66	1.32	0.97	0.89	
15,521.29	89.32	269.81	8,479.53	383.40	-6,839.17	6,840.09	1.53	1.19	0.97	
15,534.71	89.51	269.94	8,479.66	383.37	-6,852.59	6,853.51	1.72	1.42	0.97	
15,548.14	89.73	270.06	8,479.75	383.37	-6,866.02	6,866.94	1.87	1.64	0.89	
15,561.57	89.97	270.17	8,479.79	383.40	-6,879.45	6,880.37	1.97	1.79	0.82	
15,575.00	90.19	270.26	8,479.77	383.45	-6,892.88	6,893.80	1.77	1.64	0.67	
15,588.57	90.35	270.31	8,479.70	383.52	-6,906.45	6,907.37	1.24	1.18	0.37	
15,602.14	90.43	270.34	8,479.61	383.60	-6,920.02	6,920.94	0.63	0.59	0.22	
15,615.71	90.45	270.35	8,479.51	383.68	-6,933.59	6,934.51	0.16	0.15	0.07	
15,629.29	90.42	270.34	8,479.41	383.76	-6,947.17	6,948.09	0.23	-0.22	-0.07	
15,642.86	90.40	270.33	8,479.31	383.84	-6,960.74	6,961.66	0.16	-0.15	-0.07	
15,656.43	90.38	270.31	8,479.22	383.91	-6,974.31	6,975.23	0.21	-0.15	-0.15	
15,670.00	90.37	270.28	8,479.13	383.98	-6,987.88	6,988.80	0.23	-0.07	-0.22	
15,683.43	90.36	270.24	8,479.04	384.04	-7,001.31	7,002.23	0.31	-0.07	-0.30	
15,696.86	90.37	270.19	8,478.96	384.10	-7,014.74	7,015.66	0.38	0.07	-0.37	
15,710.29	90.36	270.14	8,478.87	384.13	-7,028.17	7,029.09	0.38	-0.07	-0.37	
15,723.71	90.26	270.09	8,478.80	384.16	-7,041.59	7,042.51	0.83	-0.75	-0.37	
15,737.14	90.09	270.04	8,478.76	384.18	-7,055.02	7,055.94	1.32	-1.27	-0.37	
15,750.57	89.89	269.98	8,478.76	384.18	-7,068.45	7,069.37	1.55	-1.49	-0.45	
15,764.00	89.71	269.93	8,478.81	384.17	-7,081.88	7,082.80	1.39	-1.34	-0.37	
15,777.57	89.59	269.88	8,478.89	384.15	-7,095.45	7,096.36	0.96	-0.88	-0.37	
15,791.14	89.51	269.83	8,479.00	384.11	-7,109.02	7,109.93	0.70	-0.59	-0.37	
15,804.71	89.48	269.78	8,479.11	384.06	-7,122.59	7,123.50	0.43	-0.22	-0.37	
15,818.29	89.50	269.74	8,479.24	384.01	-7,136.17	7,137.08	0.33	0.15	-0.29	
15,831.86	89.54	269.70	8,479.35	383.94	-7,149.74	7,150.65	0.42	0.29	-0.29	
15,845.43	89.59	269.67	8,479.45	383.87	-7,163.30	7,164.22	0.43	0.37	-0.22	
15,859.00	89.65	269.65	8,479.54	383.79	-7,176.87	7,177.79	0.47	0.44	-0.15	
15,872.43	89.71	269.65	8,479.62	383.70	-7,190.30	7,191.22	0.45	0.45	0.00	
15,885.86	89.78	269.67	8,479.68	383.62	-7,203.73	7,204.65	0.54	0.52	0.15	
15,899.29	89.84	269.69	8,479.72	383.55	-7,217.16	7,218.08	0.47	0.45	0.15	
15,912.71	89.90	269.71	8,479.75	383.48	-7,230.58	7,231.50	0.47	0.45	0.15	
15,926.14	89.95	269.74	8,479.77	383.42	-7,244.01	7,244.93	0.43	0.37	0.22	
15,939.57	89.98	269.76	8,479.78	383.36	-7,257.44	7,258.36	0.27	0.22	0.15	
15,953.00	90.02	269.78	8,479.78	383.30	-7,270.87	7,271.79	0.33	0.30	0.15	
15,966.57	90.07	269.78	8,479.77	383.25	-7,284.44	7,285.36	0.37	0.37	0.00	
15,980.14	90.12	269.78	8,479.74	383.20	-7,298.01	7,298.93	0.37	0.37	0.00	
15,993.71	90.16	269.77	8,479.71	383.15	-7,311.58	7,312.50	0.30	0.29	-0.07	
16,007.29	90.18	269.76	8,479.67	383.09	-7,325.16	7,326.08	0.16	0.15	-0.07	
16,020.86	90.19	269.74	8,479.63	383.03	-7,338.73	7,339.65	0.16	0.07	-0.15	
16,034.43	90.17	269.73	8,479.58	382.97	-7,352.30	7,353.22	0.16	-0.15	-0.07	
16,048.00	90.14	269.70	8,479.55	382.90	-7,365.87	7,366.78	0.31	-0.22	-0.22	



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
16,061.43	90.10	269.68	8,479.52	382.83	-7,379.30	7,380.21	0.33	-0.30	-0.15
16,074.86	90.07	269.65	8,479.50	382.75	-7,392.73	7,393.64	0.32	-0.22	-0.22
16,088.29	90.06	269.62	8,479.48	382.66	-7,406.16	7,407.07	0.24	-0.07	-0.22
16,101.71	90.09	269.59	8,479.47	382.57	-7,419.58	7,420.49	0.32	0.22	-0.22
16,115.14	90.13	269.56	8,479.44	382.47	-7,433.01	7,433.92	0.37	0.30	-0.22
16,128.57	90.18	269.53	8,479.41	382.36	-7,446.44	7,447.35	0.43	0.37	-0.22
16,142.00	90.23	269.51	8,479.36	382.25	-7,459.87	7,460.78	0.40	0.37	-0.15
16,155.71	90.27	269.48	8,479.30	382.13	-7,473.58	7,474.49	0.36	0.29	-0.22
16,169.43	90.31	269.46	8,479.23	382.00	-7,487.30	7,488.21	0.33	0.29	-0.15
16,181.26	90.34	269.45	8,479.16	381.89	-7,499.13	7,500.04	0.30	0.29	-0.07
05-V7500(S-132H)									
16,183.14	90.35	269.45	8,479.15	381.87	-7,501.01	7,501.92	0.30	0.29	-0.07
16,196.86	90.41	269.43	8,479.06	381.74	-7,514.73	7,515.64	0.46	0.44	-0.15
16,210.57	90.50	269.41	8,478.95	381.60	-7,528.43	7,529.34	0.67	0.66	-0.15
16,224.29	90.56	269.39	8,478.82	381.46	-7,542.15	7,543.06	0.46	0.44	-0.15
16,238.00	90.65	269.37	8,478.68	381.31	-7,555.86	7,556.77	0.67	0.66	-0.15
16,251.43	90.73	269.34	8,478.52	381.16	-7,569.29	7,570.20	0.64	0.60	-0.22
16,264.86	90.81	269.31	8,478.34	381.00	-7,582.72	7,583.63	0.64	0.60	-0.22
16,278.29	90.88	269.28	8,478.14	380.83	-7,596.14	7,597.05	0.57	0.52	-0.22
16,291.71	90.90	269.26	8,477.93	380.66	-7,609.56	7,610.47	0.21	0.15	-0.15
16,305.14	90.86	269.24	8,477.72	380.49	-7,622.99	7,623.90	0.33	-0.30	-0.15
16,318.57	90.75	269.24	8,477.53	380.31	-7,636.42	7,637.32	0.82	-0.82	0.00
16,332.00	90.65	269.27	8,477.37	380.13	-7,649.84	7,650.75	0.78	-0.74	0.22
16,345.43	90.65	269.32	8,477.22	379.97	-7,663.27	7,664.18	0.37	0.00	0.37
16,358.86	90.75	269.40	8,477.05	379.82	-7,676.70	7,677.61	0.95	0.74	0.60
16,372.29	90.90	269.49	8,476.86	379.69	-7,690.13	7,691.03	1.30	1.12	0.67
16,385.71	91.08	269.58	8,476.63	379.58	-7,703.55	7,704.45	1.50	1.34	0.67
16,399.14	91.28	269.68	8,476.35	379.49	-7,716.97	7,717.88	1.66	1.49	0.74
16,412.57	91.48	269.76	8,476.03	379.43	-7,730.40	7,731.30	1.60	1.49	0.60
16,426.00	91.67	269.84	8,475.66	379.38	-7,743.82	7,744.73	1.53	1.41	0.60
16,439.57	91.82	269.89	8,475.25	379.35	-7,757.39	7,758.29	1.17	1.11	0.37
16,453.14	91.90	269.92	8,474.81	379.33	-7,770.95	7,771.85	0.63	0.59	0.22
16,466.71	91.93	269.94	8,474.35	379.31	-7,784.51	7,785.42	0.27	0.22	0.15
16,480.29	91.93	269.94	8,473.89	379.30	-7,798.09	7,798.99	0.00	0.00	0.00
16,493.86	91.92	269.94	8,473.44	379.28	-7,811.65	7,812.55	0.07	-0.07	0.00
16,507.43	91.89	269.92	8,472.99	379.27	-7,825.21	7,826.11	0.27	-0.22	-0.15
16,521.00	91.87	269.88	8,472.54	379.24	-7,838.77	7,839.68	0.33	-0.15	-0.29
16,534.43	91.84	269.82	8,472.11	379.21	-7,852.20	7,853.10	0.50	-0.22	-0.45
16,547.86	91.79	269.74	8,471.68	379.16	-7,865.62	7,866.52	0.70	-0.37	-0.60
16,561.29	91.69	269.66	8,471.27	379.08	-7,879.04	7,879.95	0.95	-0.74	-0.60
16,574.71	91.59	269.57	8,470.89	378.99	-7,892.46	7,893.36	1.00	-0.75	-0.67
16,588.14	91.50	269.49	8,470.53	378.88	-7,905.88	7,906.78	0.90	-0.67	-0.60
16,601.57	91.42	269.43	8,470.19	378.76	-7,919.31	7,920.21	0.74	-0.60	-0.45



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
16,615.00	91.33	269.38	8,469.86	378.62	-7,932.73	7,933.63	0.77	-0.67	-0.37
16,628.57	91.27	269.38	8,469.56	378.47	-7,946.30	7,947.20	0.44	-0.44	0.00
16,642.14	91.23	269.40	8,469.26	378.33	-7,959.86	7,960.76	0.33	-0.29	0.15
16,655.71	91.20	269.43	8,468.97	378.19	-7,973.43	7,974.33	0.31	-0.22	0.22
16,669.29	91.20	269.46	8,468.69	378.06	-7,987.01	7,987.91	0.22	0.00	0.22
16,682.86	91.24	269.48	8,468.40	377.93	-8,000.57	8,001.47	0.33	0.29	0.15
16,696.43	91.29	269.48	8,468.10	377.81	-8,014.14	8,015.04	0.37	0.37	0.00
16,710.00	91.38	269.44	8,467.78	377.68	-8,027.70	8,028.60	0.73	0.66	-0.29
16,723.43	91.49	269.33	8,467.45	377.54	-8,041.13	8,042.03	1.16	0.82	-0.82
16,736.86	91.61	269.19	8,467.08	377.36	-8,054.55	8,055.45	1.37	0.89	-1.04
16,750.29	91.72	269.03	8,466.69	377.15	-8,067.98	8,068.87	1.45	0.82	-1.19
16,763.71	91.78	268.87	8,466.28	376.91	-8,081.39	8,082.28	1.27	0.45	-1.19
16,777.14	91.74	268.72	8,465.87	376.63	-8,094.81	8,095.70	1.16	-0.30	-1.12
16,790.57	91.00	268.76	8,465.55	376.33	-8,108.23	8,109.13	5.52	-5.51	0.30
16,804.00	89.69	268.87	8,465.47	376.05	-8,121.66	8,122.55	9.79	-9.75	0.82
16,817.57	89.47	268.84	8,465.57	375.78	-8,135.22	8,136.12	1.64	-1.62	-0.22
16,831.14	89.48	268.80	8,465.69	375.50	-8,148.79	8,149.68	0.30	0.07	-0.29
16,844.71	89.48	268.78	8,465.82	375.22	-8,162.36	8,163.25	0.15	0.00	-0.15
16,858.29	89.53	268.77	8,465.93	374.93	-8,175.93	8,176.83	0.38	0.37	-0.07
16,871.86	89.57	268.76	8,466.04	374.63	-8,189.50	8,190.39	0.30	0.29	-0.07
16,885.43	89.59	268.76	8,466.14	374.34	-8,203.07	8,203.96	0.15	0.15	0.00
16,899.00	89.59	268.76	8,466.24	374.05	-8,216.63	8,217.52	0.00	0.00	0.00
16,912.43	89.57	268.76	8,466.33	373.76	-8,230.06	8,230.95	0.15	-0.15	0.00
16,925.86	89.54	268.77	8,466.44	373.47	-8,243.49	8,244.37	0.24	-0.22	0.07
16,939.29	89.52	268.78	8,466.55	373.18	-8,256.91	8,257.80	0.17	-0.15	0.07
16,952.71	89.55	268.78	8,466.66	372.89	-8,270.33	8,271.22	0.22	0.22	0.00
16,966.14	89.62	268.79	8,466.76	372.61	-8,283.76	8,284.64	0.53	0.52	0.07
16,979.57	89.68	268.80	8,466.84	372.33	-8,297.18	8,298.07	0.45	0.45	0.07
16,993.00	89.73	268.81	8,466.91	372.05	-8,310.61	8,311.49	0.38	0.37	0.07
17,006.57	89.74	268.82	8,466.97	371.77	-8,324.18	8,325.06	0.10	0.07	0.07
17,020.14	89.74	268.82	8,467.03	371.49	-8,337.74	8,338.63	0.00	0.00	0.00
17,033.71	89.72	268.83	8,467.09	371.21	-8,351.31	8,352.19	0.16	-0.15	0.07
17,047.29	89.70	268.83	8,467.16	370.93	-8,364.89	8,365.77	0.15	-0.15	0.00
17,060.86	89.70	268.83	8,467.23	370.65	-8,378.45	8,379.34	0.00	0.00	0.00
17,074.43	89.74	268.84	8,467.30	370.38	-8,392.02	8,392.90	0.30	0.29	0.07
17,088.00	89.78	268.84	8,467.36	370.10	-8,405.59	8,406.47	0.29	0.29	0.00
17,101.43	89.82	268.83	8,467.40	369.83	-8,419.02	8,419.89	0.31	0.30	-0.07
17,114.86	89.80	268.83	8,467.45	369.56	-8,432.44	8,433.32	0.15	-0.15	0.00
17,128.29	89.75	268.82	8,467.50	369.28	-8,445.87	8,446.75	0.38	-0.37	-0.07
17,141.71	89.69	268.82	8,467.57	369.00	-8,459.29	8,460.16	0.45	-0.45	0.00
17,155.14	89.62	268.81	8,467.65	368.73	-8,472.71	8,473.59	0.53	-0.52	-0.07
17,168.57	89.48	268.79	8,467.75	368.45	-8,486.14	8,487.02	1.05	-1.04	-0.15
17,182.00	89.33	268.77	8,467.89	368.16	-8,499.57	8,500.44	1.13	-1.12	-0.15



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
17,195.57	89.24	268.75	8,468.06	367.87	-8,513.13	8,514.01	0.68	-0.66	-0.15
17,209.14	89.18	268.71	8,468.25	367.56	-8,526.70	8,527.57	0.53	-0.44	-0.29
17,222.71	89.16	268.68	8,468.45	367.26	-8,540.26	8,541.13	0.27	-0.15	-0.22
17,236.29	89.15	268.65	8,468.65	366.94	-8,553.84	8,554.71	0.23	-0.07	-0.22
17,249.86	89.15	268.62	8,468.85	366.62	-8,567.40	8,568.27	0.22	0.00	-0.22
17,263.43	89.13	268.60	8,469.05	366.29	-8,580.97	8,581.84	0.21	-0.15	-0.15
17,277.00	89.13	268.59	8,469.26	365.95	-8,594.53	8,595.40	0.07	0.00	-0.07
17,290.43	89.16	268.60	8,469.46	365.63	-8,607.96	8,608.82	0.24	0.22	0.07
17,303.86	89.20	268.63	8,469.65	365.30	-8,621.38	8,622.25	0.37	0.30	0.22
17,317.29	89.25	268.66	8,469.83	364.98	-8,634.81	8,635.67	0.43	0.37	0.22
17,330.71	89.30	268.69	8,470.00	364.67	-8,648.22	8,649.09	0.43	0.37	0.22
17,344.14	89.34	268.72	8,470.16	364.37	-8,661.65	8,662.51	0.37	0.30	0.22
17,357.57	89.36	268.74	8,470.31	364.07	-8,675.07	8,675.94	0.21	0.15	0.15
17,371.00	89.35	268.76	8,470.46	363.78	-8,688.50	8,689.36	0.17	-0.07	0.15
17,384.57	89.35	268.75	8,470.62	363.48	-8,702.06	8,702.93	0.07	0.00	-0.07
17,398.14	89.38	268.74	8,470.77	363.19	-8,715.63	8,716.49	0.23	0.22	-0.07
17,411.71	89.42	268.72	8,470.91	362.89	-8,729.20	8,730.06	0.33	0.29	-0.15
17,425.29	89.47	268.69	8,471.04	362.58	-8,742.77	8,743.63	0.43	0.37	-0.22
17,438.86	89.52	268.65	8,471.16	362.26	-8,756.34	8,757.20	0.47	0.37	-0.29
17,452.43	89.59	268.61	8,471.27	361.94	-8,769.90	8,770.76	0.59	0.52	-0.29
17,466.00	89.68	268.56	8,471.35	361.60	-8,783.47	8,784.33	0.76	0.66	-0.37
17,479.43	89.79	268.50	8,471.42	361.26	-8,796.89	8,797.75	0.93	0.82	-0.45
17,492.86	89.91	268.43	8,471.45	360.90	-8,810.32	8,811.17	1.03	0.89	-0.52
17,506.29	90.01	268.36	8,471.46	360.52	-8,823.74	8,824.60	0.91	0.74	-0.52
17,519.71	90.13	268.29	8,471.44	360.13	-8,837.16	8,838.01	1.04	0.89	-0.52
17,533.14	90.25	268.21	8,471.40	359.72	-8,850.58	8,851.43	1.07	0.89	-0.60
17,546.57	90.35	268.14	8,471.33	359.29	-8,864.01	8,864.86	0.91	0.74	-0.52
17,560.00	90.42	268.07	8,471.24	358.85	-8,877.43	8,878.28	0.74	0.52	-0.52
17,573.57	90.44	267.99	8,471.14	358.38	-8,890.99	8,891.84	0.61	0.15	-0.59
17,587.14	90.46	267.92	8,471.03	357.90	-8,904.55	8,905.40	0.54	0.15	-0.52
17,600.71	90.52	267.86	8,470.91	357.40	-8,918.11	8,918.96	0.63	0.44	-0.44
17,614.29	90.60	267.79	8,470.78	356.88	-8,931.68	8,932.53	0.78	0.59	-0.52
17,627.86	90.69	267.73	8,470.63	356.35	-8,945.24	8,946.08	0.80	0.66	-0.44
17,641.43	90.80	267.67	8,470.45	355.81	-8,958.80	8,959.64	0.92	0.81	-0.44
17,655.00	90.92	267.61	8,470.25	355.25	-8,972.35	8,973.19	0.99	0.88	-0.44
17,668.43	91.01	267.56	8,470.02	354.68	-8,985.77	8,986.61	0.77	0.67	-0.37
17,681.86	91.09	267.52	8,469.78	354.11	-8,999.19	9,000.02	0.67	0.60	-0.30
17,695.29	91.13	267.48	8,469.52	353.52	-9,012.60	9,013.44	0.42	0.30	-0.30
17,708.71	91.15	267.44	8,469.25	352.93	-9,026.00	9,026.84	0.33	0.15	-0.30
17,722.14	91.16	267.41	8,468.98	352.32	-9,039.42	9,040.25	0.24	0.07	-0.22
17,735.57	91.17	267.38	8,468.71	351.71	-9,052.83	9,053.66	0.24	0.07	-0.22
17,749.00	91.21	267.36	8,468.43	351.10	-9,066.24	9,067.07	0.33	0.30	-0.15
17,762.57	91.23	267.35	8,468.14	350.47	-9,079.80	9,080.63	0.16	0.15	-0.07
17,776.14	91.24	267.34	8,467.85	349.84	-9,093.35	9,094.18	0.10	0.07	-0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)
17,789.71	91.26	267.35	8,467.55	349.22	-9,106.90	9,107.73	0.16	0.15	0.07
17,803.29	91.28	267.36	8,467.25	348.59	-9,120.46	9,121.29	0.16	0.15	0.07
17,816.86	91.31	267.38	8,466.94	347.97	-9,134.02	9,134.84	0.27	0.22	0.15
17,830.43	91.33	267.41	8,466.63	347.35	-9,147.57	9,148.39	0.27	0.15	0.22
17,844.00	91.37	267.47	8,466.31	346.74	-9,161.12	9,161.94	0.53	0.29	0.44
17,857.43	91.32	267.55	8,465.99	346.16	-9,174.53	9,175.35	0.70	-0.37	0.60
17,870.86	91.25	267.64	8,465.69	345.60	-9,187.95	9,188.77	0.85	-0.52	0.67
17,884.29	91.11	267.74	8,465.42	345.06	-9,201.37	9,202.18	1.28	-1.04	0.74
17,897.71	90.83	267.83	8,465.19	344.54	-9,214.77	9,215.59	2.19	-2.09	0.67
17,911.14	90.46	267.91	8,465.04	344.04	-9,228.19	9,229.01	2.82	-2.76	0.60
17,924.57	89.98	268.60	8,464.99	343.63	-9,241.62	9,242.43	6.26	-3.57	5.14
17,938.00	89.51	269.76	8,465.05	343.44	-9,255.04	9,255.86	9.32	-3.50	8.64
17,951.57	89.13	270.47	8,465.21	343.46	-9,268.61	9,269.43	5.93	-2.80	5.23
17,965.14	88.92	270.40	8,465.44	343.57	-9,282.18	9,282.99	1.63	-1.55	-0.52
17,978.71	88.82	270.31	8,465.71	343.65	-9,295.75	9,296.56	0.99	-0.74	-0.66
17,992.29	88.78	270.20	8,465.99	343.71	-9,309.33	9,310.14	0.86	-0.29	-0.81
18,005.86	88.74	270.10	8,466.28	343.75	-9,322.89	9,323.70	0.79	-0.29	-0.74
18,019.43	88.74	269.99	8,466.58	343.76	-9,336.46	9,337.27	0.81	0.00	-0.81
18,033.00	88.76	269.89	8,466.88	343.74	-9,350.03	9,350.84	0.75	0.15	-0.74
18,046.43	88.79	269.82	8,467.17	343.71	-9,363.45	9,364.26	0.57	0.22	-0.52
18,059.86	88.82	269.76	8,467.45	343.66	-9,376.88	9,377.69	0.50	0.22	-0.45
18,073.29	88.87	269.71	8,467.72	343.60	-9,390.31	9,391.12	0.53	0.37	-0.37
18,086.71	88.92	269.69	8,467.98	343.53	-9,403.72	9,404.54	0.40	0.37	-0.15
18,100.14	89.02	269.68	8,468.22	343.45	-9,417.15	9,417.96	0.75	0.74	-0.07
18,113.57	89.16	269.71	8,468.43	343.38	-9,430.58	9,431.39	1.07	1.04	0.22
18,127.00	89.31	269.78	8,468.61	343.32	-9,444.01	9,444.82	1.23	1.12	0.52
18,140.57	89.37	269.92	8,468.77	343.29	-9,457.58	9,458.39	1.12	0.44	1.03
18,154.14	89.39	270.10	8,468.91	343.29	-9,471.15	9,471.96	1.33	0.15	1.33
18,167.71	89.39	270.31	8,469.06	343.34	-9,484.72	9,485.53	1.55	0.00	1.55
18,181.29	89.31	270.52	8,469.21	343.44	-9,498.29	9,499.11	1.65	-0.59	1.55
18,194.86	89.16	270.73	8,469.39	343.58	-9,511.86	9,512.67	1.90	-1.11	1.55
18,208.43	89.58	270.99	8,469.54	343.79	-9,525.43	9,526.24	3.64	3.10	1.92
18,222.00	90.06	271.61	8,469.58	344.10	-9,539.00	9,539.81	5.78	3.54	4.57
18,235.43	89.99	271.95	8,469.58	344.51	-9,552.42	9,553.23	2.58	-0.52	2.53
18,248.86	90.03	272.14	8,469.58	344.99	-9,565.84	9,566.66	1.45	0.30	1.41
18,262.29	90.17	272.33	8,469.55	345.52	-9,579.26	9,580.08	1.76	1.04	1.41
18,275.71	90.34	272.51	8,469.49	346.08	-9,592.67	9,593.49	1.84	1.27	1.34
18,289.14	90.53	272.67	8,469.39	346.69	-9,606.08	9,606.90	1.85	1.41	1.19
18,302.57	91.17	272.82	8,469.19	347.33	-9,619.50	9,620.32	4.89	4.77	1.12
18,316.00	92.07	272.95	8,468.81	348.01	-9,632.91	9,633.73	6.77	6.70	0.97
18,329.43	92.48	273.01	8,468.28	348.71	-9,646.31	9,647.13	3.09	3.05	0.45
18,342.86	92.62	273.04	8,467.68	349.41	-9,659.70	9,660.53	1.07	1.04	0.22
18,356.29	92.76	273.05	8,467.05	350.13	-9,673.10	9,673.93	1.05	1.04	0.07



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	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)	
18,369.71	92.88	273.04	8,466.39	350.84	-9,686.49	9,687.31	0.90	0.89	-0.07	
18,383.14	92.96	273.03	8,465.71	351.55	-9,699.88	9,700.71	0.60	0.60	-0.07	
18,396.57	93.02	273.02	8,465.01	352.26	-9,713.27	9,714.10	0.45	0.45	-0.07	
18,410.00	93.07	273.00	8,464.29	352.96	-9,726.66	9,727.50	0.40	0.37	-0.15	
18,423.57	93.17	272.97	8,463.55	353.67	-9,740.20	9,741.03	0.77	0.74	-0.22	
18,437.14	93.25	272.95	8,462.79	354.37	-9,753.73	9,754.56	0.61	0.59	-0.15	
18,450.71	93.31	272.92	8,462.02	355.06	-9,767.26	9,768.10	0.49	0.44	-0.22	
18,464.29	93.37	272.89	8,461.23	355.75	-9,780.80	9,781.64	0.49	0.44	-0.22	
18,477.86	93.41	272.85	8,460.42	356.43	-9,794.33	9,795.17	0.42	0.29	-0.29	
18,491.43	93.47	272.82	8,459.61	357.10	-9,807.85	9,808.70	0.49	0.44	-0.22	
18,505.00	93.52	272.78	8,458.78	357.76	-9,821.38	9,822.23	0.47	0.37	-0.29	
18,518.43	93.54	272.75	8,457.96	358.40	-9,834.77	9,835.62	0.27	0.15	-0.22	
18,531.86	93.53	272.71	8,457.13	359.04	-9,848.16	9,849.01	0.31	-0.07	-0.30	
18,545.29	93.51	272.67	8,456.30	359.67	-9,861.55	9,862.40	0.33	-0.15	-0.30	
18,558.71	93.48	272.63	8,455.48	360.29	-9,874.93	9,875.78	0.37	-0.22	-0.30	
18,572.14	93.46	272.59	8,454.67	360.90	-9,888.32	9,889.18	0.33	-0.15	-0.30	
18,585.57	93.47	272.55	8,453.86	361.50	-9,901.72	9,902.57	0.31	0.07	-0.30	
18,599.00	93.51	272.51	8,453.04	362.09	-9,915.11	9,915.96	0.42	0.30	-0.30	
18,612.57	93.55	272.46	8,452.21	362.68	-9,928.64	9,929.50	0.47	0.29	-0.37	
18,626.14	93.56	272.41	8,451.37	363.26	-9,942.17	9,943.03	0.38	0.07	-0.37	
18,639.71	93.57	272.36	8,450.52	363.82	-9,955.70	9,956.56	0.38	0.07	-0.37	
18,653.29	93.57	272.31	8,449.68	364.37	-9,969.25	9,970.11	0.37	0.00	-0.37	
18,666.86	93.59	272.26	8,448.83	364.91	-9,982.78	9,983.64	0.40	0.15	-0.37	
18,680.43	93.61	272.21	8,447.98	365.44	-9,996.31	9,997.17	0.40	0.15	-0.37	
18,684.20	93.61	272.20	8,447.74	365.59	-10,000.07	10,000.94	0.30	0.07	-0.29	
06-V10000(S-132H)										
18,694.00	93.62	272.17	8,447.12	365.96	-10,009.84	10,010.71	0.30	0.07	-0.29	
18,707.40	93.69	272.14	8,446.27	366.46	-10,023.21	10,024.07	0.57	0.52	-0.22	
18,720.80	93.77	272.11	8,445.40	366.96	-10,036.57	10,037.44	0.64	0.60	-0.22	
18,734.20	93.83	272.08	8,444.51	367.45	-10,049.93	10,050.80	0.50	0.45	-0.22	
18,747.60	93.88	272.06	8,443.61	367.93	-10,063.29	10,064.16	0.40	0.37	-0.15	
18,750.77	93.89	272.06	8,443.39	368.04	-10,066.45	10,067.32	0.40	0.37	-0.15	
07-LTP(S-132H)										
18,753.00	93.90	272.05	8,443.24	368.12	-10,068.68	10,069.55	0.40	0.37	-0.15	
100FWL: 18753.00' MD, 10069.55' VS, 8443.24' TVD										
18,761.00	93.93	272.04	8,442.69	368.41	-10,076.65	10,077.52	0.40	0.37	-0.15	
Final MWD Survey: 18761.00' MD, 93.93°INC, 272.04°AZ										
18,822.00	93.93	272.04	8,438.51	370.57	-10,137.47	10,138.35	0.00	0.00	0.00	
PTB: 18822.00' MD, 93.93°INC, 272.04°AZ - 08-PBHL(S-132H)										



Survey Report

Company:	Colgate Energy	Local Co-ordinate Reference:	Well Shamrock 34 Fed Com 132H
Project:	Eddy County, NM (N83-NME)	TVD Reference:	3310+30 @ 3340.00usft
Site:	Shamrock 34 Fed State Com	MD Reference:	3310+30 @ 3340.00usft
Well:	Shamrock 34 Fed Com 132H	North Reference:	Grid
Wellbore:	132H	Survey Calculation Method:	Minimum Curvature
Design:	DRL	Database:	EDM 5000.14 Single User Db

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
105.00	105.00	Rustler				
357.01	357.00	Top of Salt				
683.15	683.00	Base of Salt				
960.26	960.00	Yates				
2,521.16	2,520.00	Capitan				
3,054.80	3,053.00	DLWR Mnt. Group				
3,836.56	3,830.00	Lower Brushy Canyon				
4,200.15	4,190.00	Bone Spring Lime				
6,468.78	6,440.00	1st Bone Spring SD				
6,690.80	6,662.00	2nd Bone Spring LM				
7,208.97	7,180.00	2nd Bone Spring SD				
7,849.13	7,820.00	3rd Bone Spring LM				
8,457.18	8,405.00	3rd Bone Spring SD				

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
6,701.00	6,672.20	332.69	249.65	100FEL: 6701.00' MD, -248.83' VS, 6672.20' TVD	
8,077.00	8,047.80	325.42	248.12	KOP: 8077.00' MD, -247.32' VS, 8047.80' TVD	
8,975.00	8,628.72	385.48	-301.74	EOC: 8975.00' MD, 302.68' VS, 8628.72' TVD	
18,753.00	8,443.24	368.12	-10,068.68	100FWL: 18753.00' MD, 10069.55' VS, 8443.24' TVD	
18,761.00	8,442.69	368.41	-10,076.65	Final MWD Survey: 18761.00' MD, 93.93°INC, 272.04°AZ	
18,822.00	8,438.51	370.57	-10,137.47	PTB: 18822.00' MD, 93.93°INC, 272.04°AZ	

Checked By: _____ Approved By: _____ Date: _____

Submit a Copy To Appropriate District
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. 30-015-47751
5. Indicate Type of Lease STATE ☐ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Shamrock 34 Fed Com
8. Well Number 132H
9. OGRID Number 371449
10. Pool name or Wildcat Winchester; BS & Old Millman Ranch
4. Well Location Unit Letter: <u>I</u> <u>2609</u> feet from the <u>South</u> line and <u>340</u> feet from the <u>East</u> line Section: <u>34</u> Township: <u>19S</u> Range: <u>28E</u> NMPM County: <u>Eddy</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3310 GL

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

NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK ☐	REMEDIAL WORK ☐
TEMPORARILY ABANDON ☐	ALTERING CASING ☐
PULL OR ALTER CASING ☐	COMMENCE DRILLING OPNS. ☐
DOWNHOLE COMMINGLE ☐	P AND A ☐
CLOSED-LOOP SYSTEM ☐	CASING/CEMENT JOB ☐
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.

3/12/2022- Pressured up casing to 7,100 psi with a 15 minute test and then to 8,100 with an additional 15 minute test

4/15/2022- Perf and frac stages 1-55.

Perfs 8,959-18,589

Frac with 422,085bbl liquid and 21,681,741lbs of proppant

5/08/2022- Drilled out plugs

Turn over to production. Tubing 2.875 @ 8,673

TD 18,822 - PBTD 18,802

Spud Date: 12/03/2021

Rig Release Date: 12/16/2021

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

SIGNATURE: Mikah Thomas

TITLE: Sr. Regulatory Analyst

DATE: 06/14/2022

Type or print name Mikah Thomas

E-mail address: mthomas@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								1. WELL API NO. 30-015-47751		
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 Shamrock 34 Fed Com		
								6. Well Number: 132H		
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 Mareienfeld, Suite 1,000 Midland, Texas 79705						11. Pool name or Wildcat Winchester; BS & Old Millman Ranch				
12. Location	Unit Ltr	Section	Township	Range	Lot	Feet from the	N/S Line	Feet from the	E/W Line	County
Surface:	I	34	19S	28E		2609	South	340	East	Eddy
BH:	E	33	19S	28E		2226	North	31	West	Eddy
13. Date Spudded 12/03/2021	14. Date T.D. Reached 12/14/2021		15. Date Rig Released 12/16/2021			16. Date Completed (Ready to Produce) 05/08/2022 <u>5/1/2022</u>		17. Elevations (DF and RKB, RT, GR, etc.) 3310		
18. Total Measured Depth of Well 18,822			19. Plug Back Measured Depth 18,802			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 8,959-13,774 Old Millman Ranch and 13,774-18,589 Winchester BS										
23. CASING RECORD (Report all strings set in well)										
CASING SIZE		WEIGHT LB./FT.		DEPTH SET		HOLE SIZE		CEMENTING RECORD		AMOUNT PULLED
13.375		54.5		350		17.5		Prem Plus 350 sx 1.34		
9.625		36		3,024		12.25		Prem Plus 550 sx 2.07, 210 sx 1.34		
5.5		17		18,802		8.75		Prem 800 sx 2.41, 1,330 sx 1.73		
24. LINER RECORD										
SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN		25. TUBING RECORD				
						SIZE		DEPTH SET		PACKER SET
						2 7/8		8673		
26. Perforation record (interval, size, and number) 8,959-13,774 0.37 1,821 holes										
						27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.				
						DEPTH INTERVAL		AMOUNT AND KIND MATERIAL USED		
						8,959-13,774		Total Proppant 21,681,741 – Total Fluid 422,085		
28. PRODUCTION										
Date First Production 05/24/2022		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 06/13/2022	Hours Tested 24	Choke Size 88/88	Prod'n For Test Period	Oil – Bbl 1,148	Gas – MCF 3,274	Water - Bbl. 4,014	Gas - Oil Ratio			
Flow Tubing Press. 2300	Casing Pressure 435	Calculated 24-Hour Rate	Oil - Bbl. 1,148	Gas - MCF 3,274	Water - Bbl. 4,014	Oil Gravity - API - (<i>Corr.</i>) 45.6				
29. Disposition of Gas (<i>Sold, used for fuel, vented, etc.</i>) Sold							30. Test Witnessed By Colgate Operating, LLC			
31. List Attachments C-102, C-103, C-104, Directionnel Survey										
32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.							33. Rig Release Date:			
34. If an on-site burial was used at the well, report the exact location of the on-site burial: Latitude Longitude NAD83										

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

Signature

Printed

Name: Mikah Thomas

Title: Sr. Regulatory Analyst

Date: 06/14/2022

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- 105	T. Canyon	T. Ojo Alamo	T. Penn A"
T. Salt- 357	T. Strawn	T. Kirtland	T. Penn. "B"
B. Salt- 683	T. Atoka	T. Fruitland	T. Penn. "C"
T. Yates- 960	T. Miss	T. Pictured Cliffs	T. Penn. "D"
T. DLWR Mnt. Group- 3055	T. Devonian	T. Cliff House	T. Leadville
T. L Brushy Canyon- 3837	T. Silurian	T. Menefee	T. Madison
T. BS Lime- 4200	T. Montoya	T. Point Lookout	T. Elbert
T. 1 st Bone Spring SD- 6469	T. Simpson	T. Mancos	T. McCracken
T. 2 nd Bone Spring LM- 6691	T. McKee	T. Gallup	T. Ignacio Otzte
T. 2 nd Bone Spring SD- 7209	T. Ellenburger	Base Greenhorn	T. Granite
T. 3 rd Bone Spring LM- 7849	T. Gr. Wash	T. Dakota	
T. 3 rd Bone Spring SD- 8457	T. Delaware Sand	T. Morrison	
T. Drinkard	T. Bone Springs	T. Todilto	
T. Abo	T. Capitan- 2521	T. Entrada	
T. Wolfcamp	T.	T. Wingate	
T. Penn	T.	T. Chinle	
T. Cisco (Bough C)	T.	T. Permian	

OIL OR GAS SANDS OR ZONES

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

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

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

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

IMPORTANT WATER SANDS

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

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

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

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

LITHOLOGY RECORD (Attach additional sheet if necessary)

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

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 130387

ACKNOWLEDGMENTS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 130387
	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
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1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
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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 130387

CONDITIONS

Operator: COLGATE OPERATING, LLC 300 North Marienfeld Street Midland, TX 79701	OGRID: 371449
	Action Number: 130387
	Action Type: [C-104] Completion Packet (C-104C)

CONDITIONS

Created By	Condition	Condition Date
plmartinez	File 3160-4 Completion Report and 3160-5 Completion Sundry within 10 days to NMOCD after BLM approval.	8/2/2022