

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

Form C-101
August 1, 2011
Permit 272948

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address COLGATE OPERATING, LLC 306 W Wall Street Midland, TX 79701		2. OGRID Number 371449
4. Property Code 326127		3. API Number 30-015-46356
5. Property Name LADY FRANKLIN 25 STATE		6. Well No. 134H

7. Surface Location

UL - Lot	M	Section	25	Township	19S	Range	28E	Lot Idn	Feet From	1246	N/S Line	S	Feet From	265	E/W Line	W	County	Eddy
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8. Proposed Bottom Hole Location

UL - Lot	P	Section	25	Township	19S	Range	28E	Lot Idn	P	Feet From	330	N/S Line	S	Feet From	10	E/W Line	E	County	Eddy
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9. Pool Information

WINCHESTER;BONE SPRING	65010
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3332
16. Multiple N	17. Proposed Depth 13698	18. Formation Bone Spring	19. Contractor	20. Spud Date 12/1/2019
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	950	733	0
Int1	12.25	9.625	36	3050	985	0
Prod	8.5	5.5	20	13698	2582	2050

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	3000	Shaffer
Double Ram	5000	5000	Shaffer

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable. Signature:	OIL CONSERVATION DIVISION
Printed Name: Electronically filed by Mikah Thomas	Approved By: Raymond Podany
Title: Operations Tech	Title: Geologist
Email Address: mthomas@colgateenergy.com	Approved Date: 10/8/2019 Expiration Date: 10/8/2021
Date: 10/2/2019 Phone: 432-695-4272	Conditions of Approval Attached

[illegible]

Intent ☒ YES As Drilled ☐

API #

Operator Name: COLGATE ENERGY LLC	Property Name: LADY FRANKLIN 25 STATE	Well Number 134H
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Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude			NAD	

First Take Point (FTP)

UL M	Section 25	Township 19S	Range 28E	Lot	Feet 330	From N/S SOUTH	Feet 100	From E/W WEST	County EDDY
Latitude 32.6255071					Longitude 104.1385720			NAD 83	

Last Take Point (LTP)

UL P	Section 25	Township 19S	Range 28E	Lot	Feet 330	From N/S SOUTH	Feet 10	From E/W EAST	County EDDY
Latitude 32.6255795					Longitude 104.1219474			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☒ NO

Is this well an infill well? ☒ YES

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name: COLGATE OPERATING, LLC	Property Name: LADY FRANKLIN 25 STATE	Well Number 124H
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KZ 06/29/2018

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GAS CAPTURE PLAN

Date: 10/8/2019

☒ Original

Operator & OGRID No.: [371449] COLGATE OPERATING, LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
LADY FRANKLIN 25 STATE #134H	30-015-46356	M-25-19S-28E	1246S 0265W	250	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LM Touchdown LLC and will be connected to LM Touchdown LLC Low Pressure gathering system located in Eddy County, New Mexico. It will require 4500' of pipeline to connect the facility to Low Pressure gathering system. COLGATE OPERATING, LLC provides (periodically) to LM Touchdown LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COLGATE OPERATING, LLC and LM Touchdown LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LM Touchdown LLC Processing Plant located in Sec. 25, Twn. 19S, Rng. 28E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on LM Touchdown LLC system at that time. Based on current information, it is COLGATE OPERATING, LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 272948

PERMIT COMMENTS

Operator Name and Address: COLGATE OPERATING, LLC [371449] 306 W Wall Street Midland, TX 79701		API Number: 30-015-46356
		Well: LADY FRANKLIN 25 STATE #134H

Created By	Comment	Comment Date
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Form APD Conditions

Permit 272948

PERMIT CONDITIONS OF APPROVAL

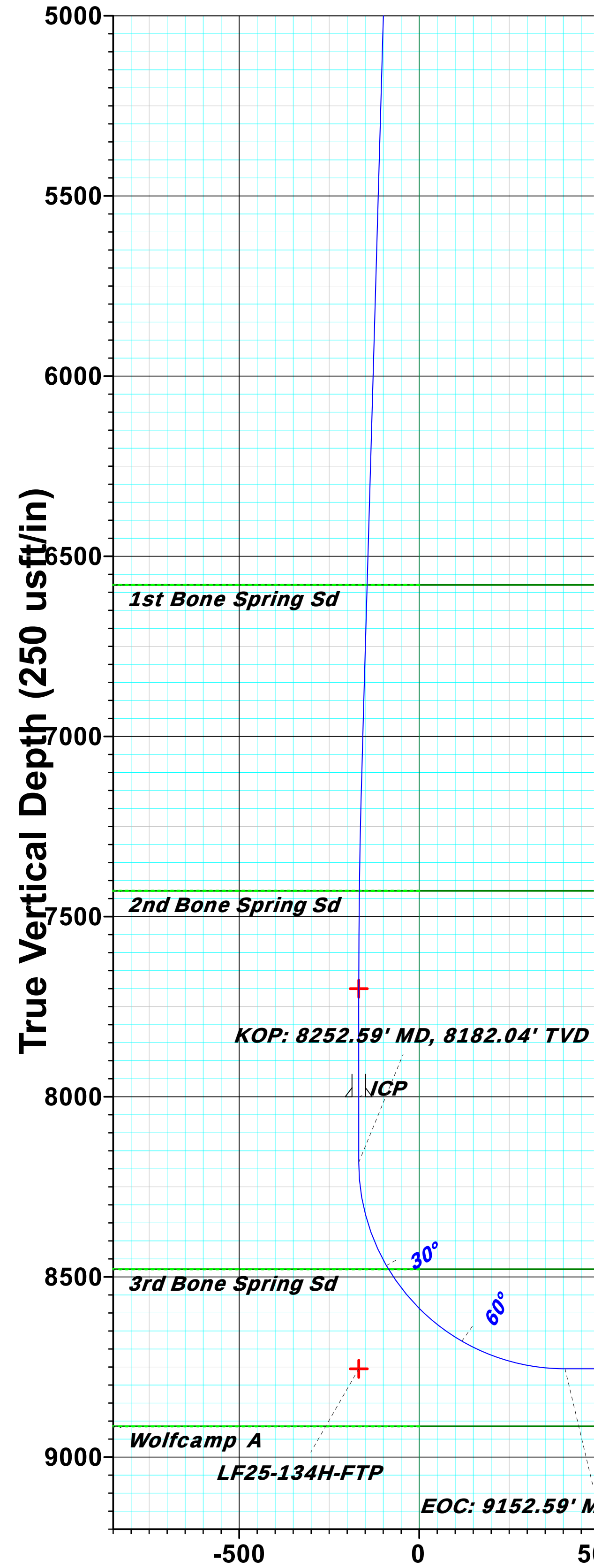
Operator Name and Address: COLGATE OPERATING, LLC [371449] 306 W Wall Street Midland, TX 79701		API Number: 30-015-46356
		Well: LADY FRANKLIN 25 STATE #134H
OCD Reviewer	Condition	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	
rpodany	Will require a directional survey with the C-104	



Colgate Energy
Project: Eddy County, NM (N83-NME)
Site: Lady Franklin 25
Well: Lady Franklin 25 State 134H
Wellbore: Permit
Plan: Plan #1

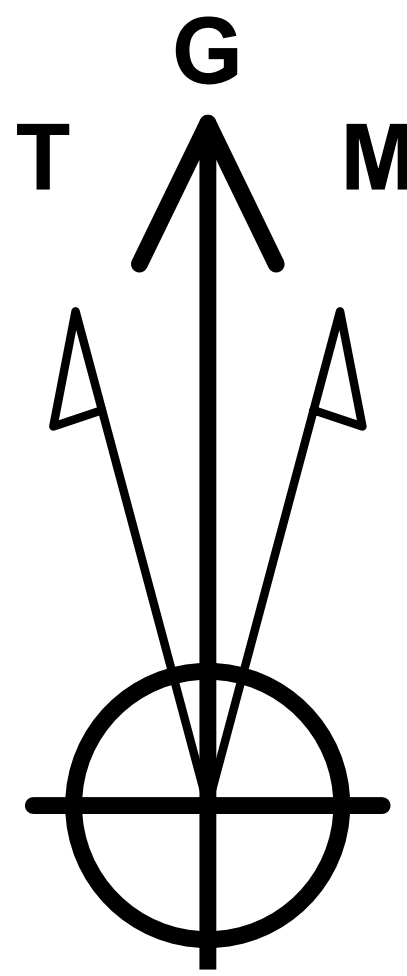
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
678.50	678.50	Top of Salt
977.50	977.50	Base of Salt
2079.50	2085.45	Yates
2675.50	2688.82	Capitan
2915.50	2931.79	Cherry Canyon
3188.50	3208.17	Brushy Canyon
4198.50	4230.66	Bone Spring LM
6579.50	6641.12	1st Bone Spring Sd
7428.50	7498.82	2nd Bone Spring Sd
8478.50	8564.18	3rd Bone Spring Sd

CASING DETAILS		
TVD	MD	Name
400.00	400.00	SCP
8000.00	8070.55	ICP



WELL DETAILS: Lady Franklin 25 State 134H

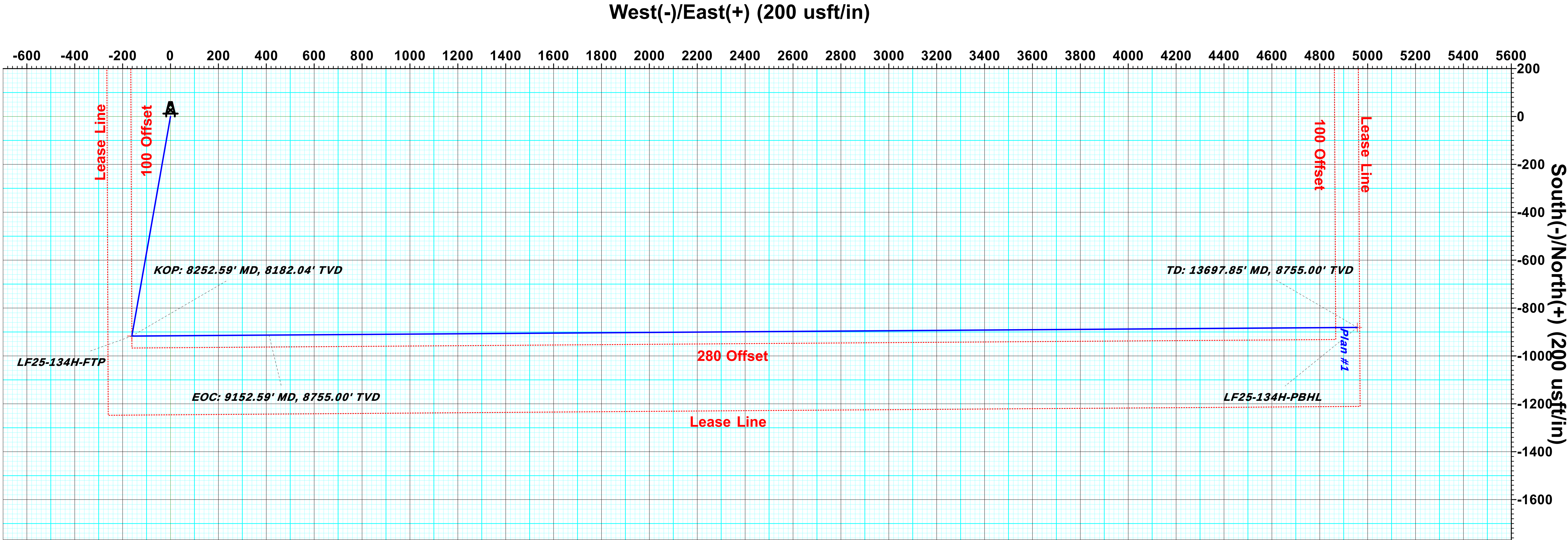
Northing	Easting	Latitude	Longitude	Slot
592262.21	601459.14	32.62802673	-104.13804239	S04



Azimuths to Grid North
True North: -0.10°
Magnetic North: 6.91°

Magnetic Field
Strength: 47891.5snT
Dip Angle: 60.31°
Date: 8/27/2019
Model: IGRF2015

PROJECT DETAILS: Eddy County, NM (N83-NME)	
Geodetic System: US State Plane 1983	
Datum: North American Datum 1983	
Ellipsoid: GRS 1980	
Zone: New Mexico Eastern Zone	
System Datum: Mean Sea Level	
Local North: Grid	
KB Elevation: 3332.5+26 @ 3358.50usft (Permit)	
Elevation: 3332.50	



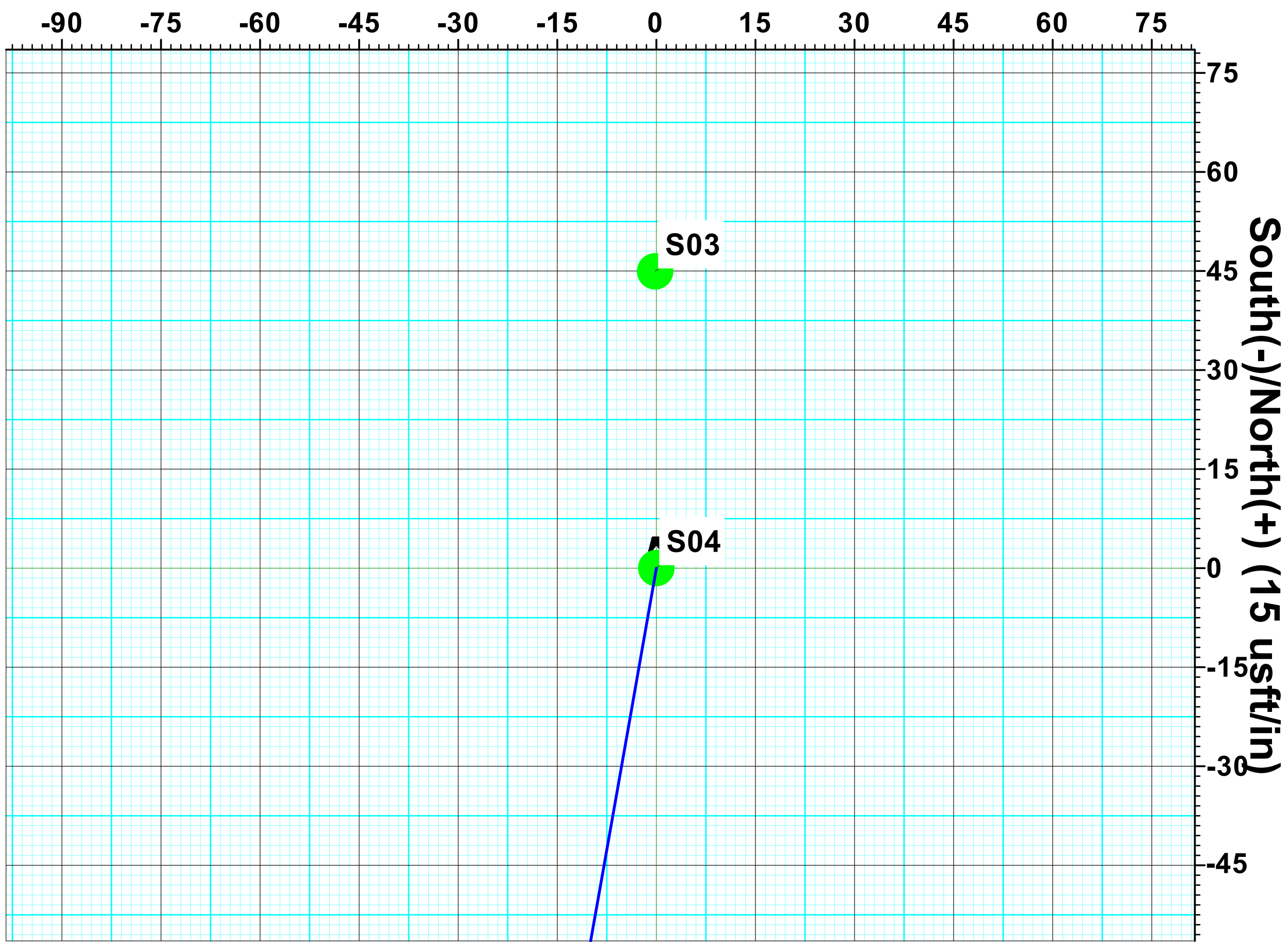
Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00
3	1797.73	8.97	189.98	1795.29	-45.97	-8.09	1.50	189.98	-8.41
4	7172.82	8.97	189.98	7104.71	-870.98	-153.28	0.00	0.00	-159.36
5	7770.55	0.00	0.00	7700.00	-916.95	-161.37	1.50	180.00	-167.77
6	8252.59	0.00	0.00	8182.04	-916.95	-161.37	0.00	0.00	-167.77
7	9152.59	90.00	89.60	8755.00	-912.91	411.57	10.00	89.60	405.19
8	13697.85	90.00	89.60	8755.00	-880.84	4956.72	0.00	0.00	4950.45

DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting
LF25-134H-EON	-916.95	-161.37	591345.26	601297.77
LF25-134H-FTP	-916.95	-161.37	591345.26	601297.77
LF25-134H-PBHL	-880.84	4956.72	591381.37	606415.86

West(-)/East(+) (15 usft/in)



Vertical Section at 89.60° (250 usft/in)

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 134H - Slot S04
Company:	Colgate Energy	TVD Reference:	3332.5+26 @ 3358.50usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3332.5+26 @ 3358.50usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 134H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

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		Lady Franklin 25			
Site Position:		Northing:	596,295.72 usft	Latitude:	32.63911509
From:	Map	Easting:	601,180.81 usft	Longitude:	-104.13892250
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well	Lady Franklin 25 State 134H - Slot S04					
Well Position	+N/-S	-4,033.51 usft	Northing:	592,262.21 usft	Latitude:	32.62802673
	+E/-W	278.33 usft	Easting:	601,459.14 usft	Longitude:	-104.13804239
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,332.50 usft

Wellbore	Permit				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/27/2019	7.01	60.31	47,891.45843820

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	89.60

Plan Survey Tool Program	Date	9/16/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,697.85	Plan #1 (Permit)	MWD
				MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,797.73	8.97	189.98	1,795.29	-45.97	-8.09	1.50	1.50	0.00	189.98	
7,172.82	8.97	189.98	7,104.71	-870.98	-153.28	0.00	0.00	0.00	0.00	
7,770.55	0.00	0.00	7,700.00	-916.95	-161.37	1.50	-1.50	0.00	180.00	LF25-134H-EON
8,252.59	0.00	0.00	8,182.04	-916.95	-161.37	0.00	0.00	0.00	0.00	
9,152.59	90.00	89.60	8,755.00	-912.91	411.57	10.00	10.00	9.96	89.60	
13,697.85	90.00	89.60	8,755.00	-880.84	4,956.72	0.00	0.00	0.00	0.00	LF25-134H-PBHL

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 134H - Slot S04
Company:	Colgate Energy	TVD Reference:	3332.5+26 @ 3358.50usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3332.5+26 @ 3358.50usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 134H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Planned 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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
SCP									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
678.50	0.00	0.00	678.50	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
977.50	0.00	0.00	977.50	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	1.50	189.98	1,299.99	-1.29	-0.23	-0.24	1.50	1.50	0.00
1,400.00	3.00	189.98	1,399.91	-5.16	-0.91	-0.94	1.50	1.50	0.00
1,500.00	4.50	189.98	1,499.69	-11.60	-2.04	-2.12	1.50	1.50	0.00
1,600.00	6.00	189.98	1,599.27	-20.61	-3.63	-3.77	1.50	1.50	0.00
1,700.00	7.50	189.98	1,698.57	-32.18	-5.66	-5.89	1.50	1.50	0.00
1,797.73	8.97	189.98	1,795.29	-45.97	-8.09	-8.41	1.50	1.50	0.00
1,800.00	8.97	189.98	1,797.54	-46.31	-8.15	-8.47	0.00	0.00	0.00
1,900.00	8.97	189.98	1,896.31	-61.66	-10.85	-11.28	0.00	0.00	0.00
2,000.00	8.97	189.98	1,995.09	-77.01	-13.55	-14.09	0.00	0.00	0.00
2,085.45	8.97	189.98	2,079.50	-90.13	-15.86	-16.49	0.00	0.00	0.00
Yates									
2,100.00	8.97	189.98	2,093.87	-92.36	-16.25	-16.90	0.00	0.00	0.00
2,200.00	8.97	189.98	2,192.65	-107.71	-18.96	-19.71	0.00	0.00	0.00
2,300.00	8.97	189.98	2,291.43	-123.06	-21.66	-22.52	0.00	0.00	0.00
2,400.00	8.97	189.98	2,390.20	-138.41	-24.36	-25.32	0.00	0.00	0.00
2,500.00	8.97	189.98	2,488.98	-153.76	-27.06	-28.13	0.00	0.00	0.00
2,600.00	8.97	189.98	2,587.76	-169.11	-29.76	-30.94	0.00	0.00	0.00
2,688.82	8.97	189.98	2,675.50	-182.74	-32.16	-33.43	0.00	0.00	0.00
Capitan									
2,700.00	8.97	189.98	2,686.54	-184.45	-32.46	-33.75	0.00	0.00	0.00
2,800.00	8.97	189.98	2,785.32	-199.80	-35.16	-36.56	0.00	0.00	0.00
2,900.00	8.97	189.98	2,884.10	-215.15	-37.86	-39.36	0.00	0.00	0.00
2,931.79	8.97	189.98	2,915.50	-220.03	-38.72	-40.26	0.00	0.00	0.00
Cherry Canyon									
3,000.00	8.97	189.98	2,982.87	-230.50	-40.56	-42.17	0.00	0.00	0.00
3,100.00	8.97	189.98	3,081.65	-245.85	-43.27	-44.98	0.00	0.00	0.00
3,200.00	8.97	189.98	3,180.43	-261.20	-45.97	-47.79	0.00	0.00	0.00
3,208.17	8.97	189.98	3,188.50	-262.45	-46.19	-48.02	0.00	0.00	0.00
Brushy Canyon									
3,300.00	8.97	189.98	3,279.21	-276.55	-48.67	-50.60	0.00	0.00	0.00
3,400.00	8.97	189.98	3,377.99	-291.90	-51.37	-53.41	0.00	0.00	0.00
3,500.00	8.97	189.98	3,476.76	-307.25	-54.07	-56.21	0.00	0.00	0.00
3,600.00	8.97	189.98	3,575.54	-322.59	-56.77	-59.02	0.00	0.00	0.00
3,700.00	8.97	189.98	3,674.32	-337.94	-59.47	-61.83	0.00	0.00	0.00
3,800.00	8.97	189.98	3,773.10	-353.29	-62.17	-64.64	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 134H - Slot S04
Company:	Colgate Energy	TVD Reference:	3332.5+26 @ 3358.50usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3332.5+26 @ 3358.50usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 134H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Planned 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)
3,900.00	8.97	189.98	3,871.88	-368.64	-64.88	-67.45	0.00	0.00	0.00
4,000.00	8.97	189.98	3,970.65	-383.99	-67.58	-70.26	0.00	0.00	0.00
4,100.00	8.97	189.98	4,069.43	-399.34	-70.28	-73.06	0.00	0.00	0.00
4,200.00	8.97	189.98	4,168.21	-414.69	-72.98	-75.87	0.00	0.00	0.00
4,230.66	8.97	189.98	4,198.50	-419.40	-73.81	-76.73	0.00	0.00	0.00
Bone Spring LM									
4,300.00	8.97	189.98	4,266.99	-430.04	-75.68	-78.68	0.00	0.00	0.00
4,400.00	8.97	189.98	4,365.77	-445.39	-78.38	-81.49	0.00	0.00	0.00
4,500.00	8.97	189.98	4,464.54	-460.74	-81.08	-84.30	0.00	0.00	0.00
4,600.00	8.97	189.98	4,563.32	-476.08	-83.78	-87.11	0.00	0.00	0.00
4,700.00	8.97	189.98	4,662.10	-491.43	-86.49	-89.91	0.00	0.00	0.00
4,800.00	8.97	189.98	4,760.88	-506.78	-89.19	-92.72	0.00	0.00	0.00
4,900.00	8.97	189.98	4,859.66	-522.13	-91.89	-95.53	0.00	0.00	0.00
5,000.00	8.97	189.98	4,958.44	-537.48	-94.59	-98.34	0.00	0.00	0.00
5,100.00	8.97	189.98	5,057.21	-552.83	-97.29	-101.15	0.00	0.00	0.00
5,200.00	8.97	189.98	5,155.99	-568.18	-99.99	-103.96	0.00	0.00	0.00
5,300.00	8.97	189.98	5,254.77	-583.53	-102.69	-106.76	0.00	0.00	0.00
5,400.00	8.97	189.98	5,353.55	-598.88	-105.39	-109.57	0.00	0.00	0.00
5,500.00	8.97	189.98	5,452.33	-614.22	-108.09	-112.38	0.00	0.00	0.00
5,600.00	8.97	189.98	5,551.10	-629.57	-110.80	-115.19	0.00	0.00	0.00
5,700.00	8.97	189.98	5,649.88	-644.92	-113.50	-118.00	0.00	0.00	0.00
5,800.00	8.97	189.98	5,748.66	-660.27	-116.20	-120.80	0.00	0.00	0.00
5,900.00	8.97	189.98	5,847.44	-675.62	-118.90	-123.61	0.00	0.00	0.00
6,000.00	8.97	189.98	5,946.22	-690.97	-121.60	-126.42	0.00	0.00	0.00
6,100.00	8.97	189.98	6,044.99	-706.32	-124.30	-129.23	0.00	0.00	0.00
6,200.00	8.97	189.98	6,143.77	-721.67	-127.00	-132.04	0.00	0.00	0.00
6,300.00	8.97	189.98	6,242.55	-737.02	-129.70	-134.85	0.00	0.00	0.00
6,400.00	8.97	189.98	6,341.33	-752.36	-132.41	-137.65	0.00	0.00	0.00
6,500.00	8.97	189.98	6,440.11	-767.71	-135.11	-140.46	0.00	0.00	0.00
6,600.00	8.97	189.98	6,538.89	-783.06	-137.81	-143.27	0.00	0.00	0.00
6,641.12	8.97	189.98	6,579.50	-789.37	-138.92	-144.43	0.00	0.00	0.00
1st Bone Spring Sd									
6,700.00	8.97	189.98	6,637.66	-798.41	-140.51	-146.08	0.00	0.00	0.00
6,800.00	8.97	189.98	6,736.44	-813.76	-143.21	-148.89	0.00	0.00	0.00
6,900.00	8.97	189.98	6,835.22	-829.11	-145.91	-151.70	0.00	0.00	0.00
7,000.00	8.97	189.98	6,934.00	-844.46	-148.61	-154.50	0.00	0.00	0.00
7,100.00	8.97	189.98	7,032.78	-859.81	-151.31	-157.31	0.00	0.00	0.00
7,172.82	8.97	189.98	7,104.71	-870.98	-153.28	-159.36	0.00	0.00	0.00
7,200.00	8.56	189.98	7,131.57	-875.06	-154.00	-160.10	1.50	-1.50	0.00
7,300.00	7.06	189.98	7,230.64	-888.44	-156.35	-162.55	1.50	-1.50	0.00
7,400.00	5.56	189.98	7,330.03	-899.26	-158.26	-164.53	1.50	-1.50	0.00
7,498.82	4.08	189.98	7,428.50	-907.44	-159.70	-166.03	1.50	-1.50	0.00
2nd Bone Spring Sd									
7,500.00	4.06	189.98	7,429.68	-907.52	-159.71	-166.04	1.50	-1.50	0.00
7,600.00	2.56	189.98	7,529.51	-913.20	-160.71	-167.08	1.50	-1.50	0.00
7,700.00	1.06	189.98	7,629.45	-916.31	-161.26	-167.65	1.50	-1.50	0.00
7,770.55	0.00	0.00	7,700.00	-916.95	-161.37	-167.77	1.50	-1.50	0.00
LF25-134H-EON									
7,800.00	0.00	0.00	7,729.45	-916.95	-161.37	-167.77	0.00	0.00	0.00
7,900.00	0.00	0.00	7,829.45	-916.95	-161.37	-167.77	0.00	0.00	0.00
8,000.00	0.00	0.00	7,929.45	-916.95	-161.37	-167.77	0.00	0.00	0.00
8,070.55	0.00	0.00	8,000.00	-916.95	-161.37	-167.77	0.00	0.00	0.00
ICP									
8,100.00	0.00	0.00	8,029.45	-916.95	-161.37	-167.77	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 134H - Slot S04
Company:	Colgate Energy	TVD Reference:	3332.5+26 @ 3358.50usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3332.5+26 @ 3358.50usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 134H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Planned 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)
8,200.00	0.00	0.00	8,129.45	-916.95	-161.37	-167.77	0.00	0.00	0.00
8,252.59	0.00	0.00	8,182.04	-916.95	-161.37	-167.77	0.00	0.00	0.00
KOP: 8252.59' MD, 8182.04' TVD									
8,300.00	4.74	89.60	8,229.40	-916.94	-159.41	-165.81	10.00	10.00	0.00
8,350.00	9.74	89.60	8,278.98	-916.89	-153.11	-159.51	10.00	10.00	0.00
8,400.00	14.74	89.60	8,327.83	-916.82	-142.51	-148.91	10.00	10.00	0.00
8,450.00	19.74	89.60	8,375.57	-916.71	-127.70	-134.09	10.00	10.00	0.00
8,500.00	24.74	89.60	8,421.83	-916.58	-108.78	-115.18	10.00	10.00	0.00
8,550.00	29.74	89.60	8,466.27	-916.42	-85.90	-92.30	10.00	10.00	0.00
8,564.18	31.16	89.60	8,478.50	-916.37	-78.71	-85.11	10.00	10.00	0.00
3rd Bone Spring Sd									
8,600.00	34.74	89.60	8,508.55	-916.23	-59.24	-65.63	10.00	10.00	0.00
8,650.00	39.74	89.60	8,548.34	-916.02	-28.99	-35.38	10.00	10.00	0.00
8,700.00	44.74	89.60	8,585.35	-915.78	4.61	-1.78	10.00	10.00	0.00
LF25-134H-FTP									
8,750.00	49.74	89.60	8,619.28	-915.52	41.31	34.92	10.00	10.00	0.00
8,800.00	54.74	89.60	8,649.89	-915.24	80.83	74.44	10.00	10.00	0.00
8,850.00	59.74	89.60	8,676.94	-914.94	122.86	116.47	10.00	10.00	0.00
8,900.00	64.74	89.60	8,700.22	-914.63	167.09	160.70	10.00	10.00	0.00
8,950.00	69.74	89.60	8,719.55	-914.31	213.18	206.79	10.00	10.00	0.00
9,000.00	74.74	89.60	8,734.80	-913.97	260.78	254.40	10.00	10.00	0.00
9,050.00	79.74	89.60	8,745.84	-913.63	309.53	303.15	10.00	10.00	0.00
9,100.00	84.74	89.60	8,752.59	-913.28	359.06	352.67	10.00	10.00	0.00
9,152.59	90.00	89.60	8,755.00	-912.91	411.57	405.19	10.00	10.00	0.00
EOC: 9152.59' MD, 8755.00' TVD									
9,200.00	90.00	89.60	8,755.00	-912.57	458.98	452.60	0.00	0.00	0.00
9,300.00	90.00	89.60	8,755.00	-911.87	558.98	552.60	0.00	0.00	0.00
9,400.00	90.00	89.60	8,755.00	-911.16	658.98	652.60	0.00	0.00	0.00
9,500.00	90.00	89.60	8,755.00	-910.46	758.97	752.60	0.00	0.00	0.00
9,600.00	90.00	89.60	8,755.00	-909.75	858.97	852.60	0.00	0.00	0.00
9,700.00	90.00	89.60	8,755.00	-909.05	958.97	952.60	0.00	0.00	0.00
9,800.00	90.00	89.60	8,755.00	-908.34	1,058.97	1,052.60	0.00	0.00	0.00
9,900.00	90.00	89.60	8,755.00	-907.63	1,158.96	1,152.60	0.00	0.00	0.00
10,000.00	90.00	89.60	8,755.00	-906.93	1,258.96	1,252.60	0.00	0.00	0.00
10,100.00	90.00	89.60	8,755.00	-906.22	1,358.96	1,352.60	0.00	0.00	0.00
10,200.00	90.00	89.60	8,755.00	-905.52	1,458.96	1,452.60	0.00	0.00	0.00
10,300.00	90.00	89.60	8,755.00	-904.81	1,558.95	1,552.60	0.00	0.00	0.00
10,400.00	90.00	89.60	8,755.00	-904.11	1,658.95	1,652.60	0.00	0.00	0.00
10,500.00	90.00	89.60	8,755.00	-903.40	1,758.95	1,752.60	0.00	0.00	0.00
10,600.00	90.00	89.60	8,755.00	-902.70	1,858.95	1,852.60	0.00	0.00	0.00
10,700.00	90.00	89.60	8,755.00	-901.99	1,958.94	1,952.60	0.00	0.00	0.00
10,800.00	90.00	89.60	8,755.00	-901.28	2,058.94	2,052.60	0.00	0.00	0.00
10,900.00	90.00	89.60	8,755.00	-900.58	2,158.94	2,152.60	0.00	0.00	0.00
11,000.00	90.00	89.60	8,755.00	-899.87	2,258.94	2,252.60	0.00	0.00	0.00
11,100.00	90.00	89.60	8,755.00	-899.17	2,358.93	2,352.60	0.00	0.00	0.00
11,200.00	90.00	89.60	8,755.00	-898.46	2,458.93	2,452.60	0.00	0.00	0.00
11,300.00	90.00	89.60	8,755.00	-897.76	2,558.93	2,552.60	0.00	0.00	0.00
11,400.00	90.00	89.60	8,755.00	-897.05	2,658.93	2,652.60	0.00	0.00	0.00
11,500.00	90.00	89.60	8,755.00	-896.35	2,758.92	2,752.60	0.00	0.00	0.00
11,600.00	90.00	89.60	8,755.00	-895.64	2,858.92	2,852.60	0.00	0.00	0.00
11,700.00	90.00	89.60	8,755.00	-894.94	2,958.92	2,952.60	0.00	0.00	0.00
11,800.00	90.00	89.60	8,755.00	-894.23	3,058.92	3,052.60	0.00	0.00	0.00
11,900.00	90.00	89.60	8,755.00	-893.52	3,158.91	3,152.60	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 134H - Slot S04
Company:	Colgate Energy	TVD Reference:	3332.5+26 @ 3358.50usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3332.5+26 @ 3358.50usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 134H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Planned 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)	
12,000.00	90.00	89.60	8,755.00	-892.82	3,258.91	3,252.60	0.00	0.00	0.00	
12,100.00	90.00	89.60	8,755.00	-892.11	3,358.91	3,352.60	0.00	0.00	0.00	
12,200.00	90.00	89.60	8,755.00	-891.41	3,458.91	3,452.60	0.00	0.00	0.00	
12,300.00	90.00	89.60	8,755.00	-890.70	3,558.90	3,552.60	0.00	0.00	0.00	
12,400.00	90.00	89.60	8,755.00	-890.00	3,658.90	3,652.60	0.00	0.00	0.00	
12,500.00	90.00	89.60	8,755.00	-889.29	3,758.90	3,752.60	0.00	0.00	0.00	
12,600.00	90.00	89.60	8,755.00	-888.59	3,858.90	3,852.60	0.00	0.00	0.00	
12,700.00	90.00	89.60	8,755.00	-887.88	3,958.89	3,952.60	0.00	0.00	0.00	
12,800.00	90.00	89.60	8,755.00	-887.17	4,058.89	4,052.60	0.00	0.00	0.00	
12,900.00	90.00	89.60	8,755.00	-886.47	4,158.89	4,152.60	0.00	0.00	0.00	
13,000.00	90.00	89.60	8,755.00	-885.76	4,258.89	4,252.60	0.00	0.00	0.00	
13,100.00	90.00	89.60	8,755.00	-885.06	4,358.88	4,352.60	0.00	0.00	0.00	
13,200.00	90.00	89.60	8,755.00	-884.35	4,458.88	4,452.60	0.00	0.00	0.00	
13,300.00	90.00	89.60	8,755.00	-883.65	4,558.88	4,552.60	0.00	0.00	0.00	
13,400.00	90.00	89.60	8,755.00	-882.94	4,658.88	4,652.60	0.00	0.00	0.00	
13,500.00	90.00	89.60	8,755.00	-882.24	4,758.87	4,752.60	0.00	0.00	0.00	
13,600.00	90.00	89.60	8,755.00	-881.53	4,858.87	4,852.60	0.00	0.00	0.00	
13,697.85	90.00	89.60	8,755.00	-880.84	4,956.72	4,950.45	0.00	0.00	0.00	
TD: 13697.85' MD, 8755.00' TVD - LF25-134H-PBHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
LF25-134H-EON - hit/miss target - Shape - Point	0.00	0.00	7,700.00	-916.95	-161.37	591,345.26	601,297.77	32.62550711	-104.13857202	
LF25-134H-PBHL - plan hits target center - Point	0.00	0.00	8,755.00	-880.84	4,956.72	591,381.37	606,415.86	32.62557948	-104.12194744	
LF25-134H-FTP - plan misses target center by 237.35usft at 8700.00usft MD (8585.35 TVD, -915.78 N, 4.61 E) - Point	0.00	0.00	8,755.00	-916.95	-161.37	591,345.26	601,297.77	32.62550711	-104.13857202	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
400.00	400.00	SCP	0	0	
8,070.55	8,000.00	ICP	0	0	

Database:	EDM 5000.14 Single User Db	Local Co-ordinate Reference:	Well Lady Franklin 25 State 134H - Slot S04
Company:	Colgate Energy	TVD Reference:	3332.5+26 @ 3358.50usft (Permit)
Project:	Eddy County, NM (N83-NME)	MD Reference:	3332.5+26 @ 3358.50usft (Permit)
Site:	Lady Franklin 25	North Reference:	Grid
Well:	Lady Franklin 25 State 134H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Permit		
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
678.50	678.50	Top of Salt				
977.50	977.50	Base of Salt				
2,085.45	2,079.50	Yates				
2,688.82	2,675.50	Capitan				
2,931.79	2,915.50	Cherry Canyon				
3,208.17	3,188.50	Brushy Canyon				
4,230.66	4,198.50	Bone Spring LM				
6,641.12	6,579.50	1st Bone Spring Sd				
7,498.82	7,428.50	2nd Bone Spring Sd				
8,564.18	8,478.50	3rd Bone Spring Sd				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
8,252.59	8,182.04	-916.95	-161.37	KOP: 8252.59' MD, 8182.04' TVD	
9,152.59	8,755.00	-912.91	411.57	EOC: 9152.59' MD, 8755.00' TVD	
13,697.85	8,755.00	-880.84	4,956.72	TD: 13697.85' MD, 8755.00' TVD	