Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30 015 48117

Scanlon Draw Bone Spring

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
Title		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Title	Office	

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

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

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 01/21/2021

Entered - KMS NMOCD

DISTRICT I
1625 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) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015- 48117	55510	Scanlon Draw; Bone Spring
[4] Property Code	[5] Property Name	[6] Well Number
330327	Atlas 18 State Fed Com	122H
[7] OGRID No.	[8] Operator Name	[9] Elevation
371449	Colgate Operating, LLC	3380

[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
C	18	19 S	29 E		1072	North	2197	West	Eddy

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	13	19 S	28 E		1960	North	10	West	Eddy

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

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

16

SURFACE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 605822.33 N
X= 608589.63 E
LAT.= 32.6652613° N
LONG.= 104.1147902° W

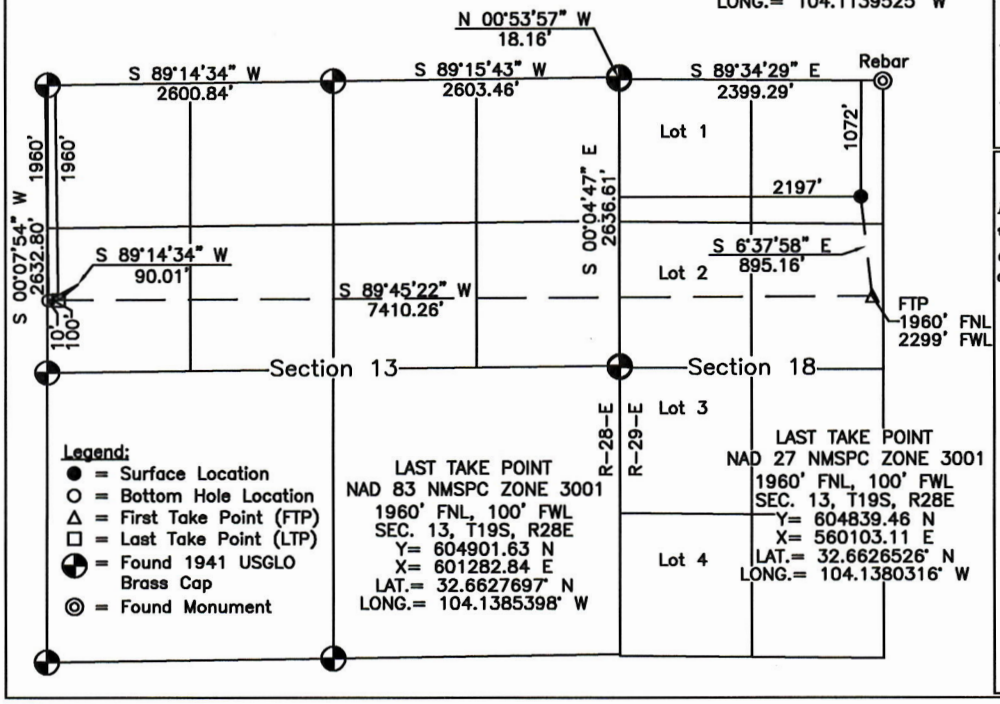
SURFACE LOCATION
NAD 27 NMSPC ZONE 3001
Y= 605760.08 N
X= 567409.92 E
LAT.= 32.6651440° N
LONG.= 104.1142825° W

FIRST TAKE POINT
NAD 83 NMSPC ZONE 3001
1960' FNL, 2299' FWL
SEC. 18, T19S, R29E
Y= 604933.16 N
X= 608693.03 E
LAT.= 32.6628167° N
LONG.= 104.1144601° W

BOTTOM HOLE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 604900.44 N
X= 601192.83 E
LAT.= 32.6627669° N
LONG.= 104.1388322° W

BOTTOM HOLE LOCATION
NAD 27 NMSPC ZONE 3001
Y= 604838.27 N
X= 560013.11 E
LAT.= 32.6626498° N
LONG.= 104.1383240° W

FIRST TAKE POINT
NAD 27 NMSPC ZONE 3001
1960' FNL, 2299' FWL
SEC. 18, T19S, R29E
Y= 604870.93 N
X= 567513.30 E
LAT.= 32.6626993° N
LONG.= 104.1139525° W



LAST TAKE POINT
NAD 83 NMSPC ZONE 3001
1960' FNL, 100' FWL
SEC. 13, T19S, R28E
Y= 604901.63 N
X= 601282.84 E
LAT.= 32.6627697° N
LONG.= 104.1385398° W

LAST TAKE POINT
NAD 27 NMSPC ZONE 3001
1960' FNL, 100' FWL
SEC. 13, T19S, R28E
Y= 604839.46 N
X= 560103.11 E
LAT.= 32.6626526° N
LONG.= 104.1380316° W

[17] OPERATOR CERTIFICATION

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

Signature 01/27/2021
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.

5/28/20
Date of Survey

Signature and Seal of Professional Surveyor:

MARSHALL W. WEEN
NEW MEXICO
17078
PROFESSIONAL SURVEYOR
7-13-20

17078
Certificate Number

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

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: 06/22/2020

☒ Original Operator & OGRID No.: Colgate Operating, LLC (371449)
☐ 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, recomplete 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
Atlas 18 State Fed Com 122H	30-015					

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/high pressure gathering system located in Eddy County, New Mexico. It will require 10' of pipeline to connect the facility to low/high 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. 22, 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 production facilities. During flowback, the fluids and sand content will be monitored. 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 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

Drilling Program
Colgate Energy
Atlas 18 Fed State 122H
1072' FNL & 2,197' FWL (SHL)
Sec 18-T19S-R29E
Eddy County, New Mexico

The estimated tops of geologic formations are as follows:

Formation:	TVD	Subsea
Rustler	426	2980
Top of Salt	446	2960
Base of Salt	696	2710
Yates	946	2460
Capitan	-	-
Delaware Mountain Group	2913	493
Lower Brushy Canyon*	3339	67
Bone Spring Lime	3930	-524
1st Bone Spring Sand*	6828	-3422
2nd Bone Spring Sand*	7534	-4128
3rd Bone Spring Sand*	8555	-5149
Wolfcamp A*	8906	-5500

Formations anticipated to contain fresh water, oil or gas are as follows:

Water — Fresh water is anticipated at 65' and will be protected by setting a water string at 400' and cementing to surface.
Hydrocarbons — Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing as necessary.

Proposed casing program is as follows:

Name	Hole Size	Casing Size	Weight & Grade	Thread Collar	Top Csg	Setting Depth	Collapse	Burst	Tension
Surface	17 1/2	13 3/8	54.5# J-55 (new)	BTC	0	400'	1.125	1.2	1.6
Intermediate	12 1/4	9 5/8	36# J-55 (new)	BTC	0	2,830'	1.125	1.2	1.6
Production	8 3/4	5 1/2	20# HCP-110 (new)	CDC HTQ	0	15,138'	1.125	1.2	1.6

SF Values will meet or exceed

Proposed cementing program is as follows:

Name	Slurry	Sacks	Yield	Weight	Excess	Top Cement	Blend
Surface	Tail	293	1.8	13.5	100%	0'	Class C w/ salt, accelerator, extender and LCM additives
Intermediate	Lead	599	2.19	12.7	100%	0'	Class C w/ salt, extender and LCM additives
	Tail	167	1.33	14.8	25%	2,264'	Class C w/ accelerator & LCM additives
Production	Tail	3173	1.24	14.2	20%	2,050'	Class H w/ Fluid Loss, Dispersant, Retarder & LCM additives

Proposed casing and cementing accessories are as follows: (Casing will be centralized per Onshore Order 2.III.B.1.f)

Surface: 1 centralizer 5' above shoe held in place with stop ring; 1 centralizer per joint for following 2 joints then every other joint to surface
Intermediate: 2 centralizers on 1st joint, 1 centralizer on 2nd joint, 1 centralizer every 4th joint to surface
Production: 2 centralizers on bottom joint, 1 centralizer on 2nd joint, 1 centralizer every 3rd joint to 2330'

Proposed pressure control equipment is as follows (see schematics below):

BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. A rotating head will also be installed and utilized as needed. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the pre-set level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multi-bowl speed head allowing for hang-off of intermediate casing & isolation of the 13-3/8” x 9-5/8” annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead.

A request for variance of pressure control equipment as follows:

1. Colgate Energy requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

BOPE will be tested per the following procedure:

After surface casing is set and the BOPE installed, pressure tests of BOPE will be performed by a third party tester utilizing water and a test plug to 250 psi low and 10,000 psi high. To deem a pressure test successful, pressure must be maintainined for ten minutes without any bleed-off. A valve on the wellhead below seat of test plug will be open at all time during BOPE tests to gaurd against damage to casing. The BOPE will be re-tested in this manner after any connection breaks or passage of allotted time (25 days). Any BOPE which fails to pass pressure tests after initial install will be replaced prior to drilling out of surface casing shoe. If at any time a BOPE component cannot function to secure the hole, the hole shall be secured utilizing a retrievable packer, and the non-functioning BOPE component shall be repair or replaced. After repair or replacement, a pressure test of the repaired or replaced component and any connections broken to repair or replace the non-functioning component will be tested in the same manner as described for initial install of BOPE. The annular preventer will be fuction tested at least weekly, and the ram-type preventers will be function tested on each trip. BOPE pit level drills will be conducted weekly with each drilling crews. All pressure tests performed on BOPE and BOPE pit level drills will be logged in the drilling log. Isolation of 13-3/8" x 9-5/8" casing annulus shall be confirmed by pressure testing of wellhead sealing component after said sealing component is installed.

Each casing string will be tested once installed in the wellbore per the following procedure:

After cement has been allowed to sit undisturbed for eight hours and has reached a compressive strength of 500 psi across the zone of interest, the 13-3/8" surface casing will be pressured to 1,500 psi and held for 30 minutes. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review. A casing test will be deemed successful if test pressure does not decline more than 10% over the thirty minute period. The casing pressure test will be completed against the blind rams of 13-5/8" 10M BOPE prior to PU tools to drill out. After cement has been allowed to sit undisturbed for eight hours and has reached a compressive strength of 500 psi across the zone of interest, the 9-5/8" intermediate casing will be pressured to 2,500 psi and held for 30 minutes. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review. A casing test will be deemed successful if test pressure does not decline more than 10% over the thirty minute period. Casing pressure test will be completed against the lower pipe rams of 13-5/8" 10M BOPE immediately prior to drilling out float equipment. Casing pressure test on 5-1/2" production casing will occur more than 72 hours after cement is placed and reached ultimate compressive strength. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review. A casing test will be deemed successful if test pressure does not decline more than 10% over the thirty minute period. Casing will be tested by pressuring up to 10,000 psi and holding pressure for 30 minutes prior to the beginning of perforating & stimulating operations.

Each casing string will be cemented per the following cementing procedure:

Cement will be placed on all casing strings utilizing the pump and plug method. A float will be installed in the casing shoe and float collar on all casing strings to hold cement in place once pumping is completed. A top plug will be utilized on all casing strings to prevent contamination of the cement by the displacement fluid. A preflush fluid will be pumped prior to cement to aid in removal of drilling mud from the wellbore, eliminate drilling mud contamination of the cement slurry and prepare the surface of both the wellbore and casing for cement.

Proposed mud system is as follows:

Name	Hole Size	Mud Weight	Viscosity	Fluid Loss	Type Mud
Surface	17-1/2"	8.6 - 9.0	28 - 34	NC	FW Spud Mud
Intermediate	12-1/4"	10.0 - 10.2	30 - 32	NC	Brine Water
Production	8-3/4"	9.0 - 10.0	32 - 35	NC	Cut-brine poly-oil mud

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions. The mud monitoring system is an electronic Pason system satisfying requirements of Onshore Order #1. Both visual and electronic mud monitoring equipment will be utilized to detect volume changes indicating loss or gain of circulating system fluid volume. Slow pump rates will be taken & recorded tourly in the drilling log. Mud engineer will perform tests and provide written report at least every 12 hours while circulating. A trip tank will be utilized and trip sheet will be recorded to ensure wellbore is taking proper fill or displacing proper fluid volume during all tripping operations. Gas detecting equipment will be utilized to monitor for hydrocarbon gas at the shakers while drilling and/or circulating. H2S monitoring equipment with both visual & auditory alarms will be installed and operational at the shakers, rig floor and cellar while drilling and/or circulating. A flare system with an effective method for ignition & discharge more than 100 feet from the wellbore will be utilized to gather and burn all gas; lines will be straight unless targeted with running tees. A mud gas separator will be installed and operable at least 500 feet before first anticipated hydrocarbon zone.

Proposed testing, surveying, logging and coring program is as follows:

No open-hole logs are planned at this time. Directional surveys will be collected at no greater than 200' intervals while drilling through the MWD tools. A GR log will be collected while drilling through the MWD tools from intermediate casing to TD. No DSTs or cores are planned at this time. No CBL or temperature logs planned at this time. A formation integrity test (FIT) will be performed on all casing strings after BOPE is installed to at least 1 ppge over planned section mud weight after drilling ten feet of new hole.

Anticipated potential hazards are as follows:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order No. 6, Colgate Energy does not anticipate that there will be enough H_2S from the surface to the Wolfcamp formations to meet the BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H_2S safety package on all wells, attached is an "H_2S Drilling Operations Plan". Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP: 8.3 lbs/gal gradient or less
Estimated BHT: 120° F

Planned commencement of operations is as follows:
Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 30 days. If production casing is run an additional 60 days will be required to complete and construct surface facilities.

COLGATE ENERGY

Colgate Energy

Eddy County, NM (N83-NME)
Atlas 18 State Com
Atlast 18 State Fed Com #122H

Permit

Plan: APD-Rev 0

Standard Planning Report

22 July, 2020

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Atlast 18 State Fed Com #122H
Company:	Colgate Energy	**TVD Reference:**	3380+26 @ 3406.00usft (Permit)
Project:	Eddy County, NM (N83-NME)	**MD Reference:**	3380+26 @ 3406.00usft (Permit)
Site:	Atlas 18 State Com	**North Reference:**	Grid
Well:	Atlast 18 State Fed Com #122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev 0		

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	Atlas 18 State Com				
Site Position:		**Northing:**	605,867.37 usft	**Latitude:**	32.66538511
From:	Map	**Easting:**	608,589.94 usft	**Longitude:**	-104.11478887
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.12 °

Well	Atlast 18 State Fed Com #122H				
Well Position	**+N/-S**	-45.04 usft	**Northing:**	605,822.33 usft	**Latitude:**	32.66526131
	+E/-W	-0.31 usft	**Easting:**	608,589.63 usft	**Longitude:**	-104.11479018
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,380.00 usft

Wellbore	Permit			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2020	7/21/2020	6.94	60.25	47,817.02857583

Design	APD-Rev 0			
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	269.75

Plan Survey Tool Program **Date** 7/21/2020

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	15,138.34	APD-Rev 0 (Permit)	OWSG MWD Rev 4	
				OWSG MWD - Standard	

COLGATE ENERGY

Planning Report

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Company:	Colgate Energy	**TVD Reference:**	3380+26 @ 3406.00usft (Permit)
Project:	Eddy County, NM (N83-NME)	**MD Reference:**	3380+26 @ 3406.00usft (Permit)
Site:	Atlas 18 State Com	**North Reference:**	Grid
Well:	Atlast 18 State Fed Com #122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev 0		

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	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,059.71	9.90	169.65	2,056.43	-55.90	10.21	1.50	1.50	0.00	169.65	
6,360.83	9.90	169.65	6,293.57	-783.05	142.97	0.00	0.00	0.00	0.00	
7,020.54	0.00	0.00	6,950.00	-838.95	153.18	1.50	-1.50	0.00	180.00	00-EON (Atlas 18-122
7,253.40	0.00	0.00	7,182.86	-838.95	153.18	0.00	0.00	0.00	0.00	
7,853.40	60.00	263.05	7,679.06	-873.61	-131.19	10.00	10.00	0.00	263.05	
8,171.39	91.15	269.75	7,757.38	-891.43	-434.67	10.00	9.80	2.11	12.79	
10,200.25	91.15	269.75	7,716.66	-900.28	-2,463.10	0.00	0.00	0.00	0.00	
10,268.75	92.52	269.75	7,714.47	-900.58	-2,531.56	2.00	2.00	0.00	0.00	
12,736.67	92.52	269.75	7,605.96	-911.34	-4,997.07	0.00	0.00	0.00	0.00	
12,748.17	92.29	269.75	7,605.48	-911.39	-5,008.56	2.00	-2.00	-0.02	-179.51	
15,138.34	92.29	269.75	7,509.97	-921.89	-7,396.80	0.00	0.00	0.00	0.00	03-PBHL (Atlas18-122

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Atlast 18 State Fed Com #122H
Company:	Colgate Energy	**TVD Reference:**	3380+26 @ 3406.00usft (Permit)
Project:	Eddy County, NM (N83-NME)	**MD Reference:**	3380+26 @ 3406.00usft (Permit)
Site:	Atlas 18 State Com	**North Reference:**	Grid
Well:	Atlast 18 State Fed Com #122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev 0		

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
426.00	0.00	0.00	426.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
446.00	0.00	0.00	446.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
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
696.00	0.00	0.00	696.00	0.00	0.00	0.00	0.00	0.00	0.00
Base 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
946.00	0.00	0.00	946.00	0.00	0.00	0.00	0.00	0.00	0.00
Yates									
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	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	1.50	169.65	1,499.99	-1.29	0.24	-0.23	1.50	1.50	0.00
1,600.00	3.00	169.65	1,599.91	-5.15	0.94	-0.92	1.50	1.50	0.00
1,700.00	4.50	169.65	1,699.69	-11.58	2.11	-2.06	1.50	1.50	0.00
1,800.00	6.00	169.65	1,799.27	-20.58	3.76	-3.67	1.50	1.50	0.00
1,900.00	7.50	169.65	1,898.57	-32.15	5.87	-5.73	1.50	1.50	0.00
2,000.00	9.00	169.65	1,997.54	-46.26	8.45	-8.24	1.50	1.50	0.00
2,059.71	9.90	169.65	2,056.43	-55.90	10.21	-9.96	1.50	1.50	0.00
2,100.00	9.90	169.65	2,096.13	-62.72	11.45	-11.18	0.00	0.00	0.00
2,200.00	9.90	169.65	2,194.64	-79.62	14.54	-14.19	0.00	0.00	0.00
2,300.00	9.90	169.65	2,293.15	-96.53	17.62	-17.20	0.00	0.00	0.00
2,400.00	9.90	169.65	2,391.66	-113.43	20.71	-20.22	0.00	0.00	0.00
2,500.00	9.90	169.65	2,490.17	-130.34	23.80	-23.23	0.00	0.00	0.00
2,600.00	9.90	169.65	2,588.69	-147.24	26.88	-26.24	0.00	0.00	0.00
2,700.00	9.90	169.65	2,687.20	-164.15	29.97	-29.25	0.00	0.00	0.00
2,800.00	9.90	169.65	2,785.71	-181.06	33.06	-32.27	0.00	0.00	0.00
2,900.00	9.90	169.65	2,884.22	-197.96	36.15	-35.28	0.00	0.00	0.00
2,929.21	9.90	169.65	2,913.00	-202.90	37.05	-36.16	0.00	0.00	0.00
DLWR Mnt Group									
3,000.00	9.90	169.65	2,982.74	-214.87	39.23	-38.29	0.00	0.00	0.00
3,100.00	9.90	169.65	3,081.25	-231.77	42.32	-41.31	0.00	0.00	0.00
3,200.00	9.90	169.65	3,179.76	-248.68	45.41	-44.32	0.00	0.00	0.00
3,300.00	9.90	169.65	3,278.27	-265.59	48.49	-47.33	0.00	0.00	0.00
3,361.64	9.90	169.65	3,339.00	-276.01	50.39	-49.19	0.00	0.00	0.00
Lower Brushy Canyon									
3,400.00	9.90	169.65	3,376.79	-282.49	51.58	-50.35	0.00	0.00	0.00
3,500.00	9.90	169.65	3,475.30	-299.40	54.67	-53.36	0.00	0.00	0.00
3,600.00	9.90	169.65	3,573.81	-316.30	57.75	-56.37	0.00	0.00	0.00
3,700.00	9.90	169.65	3,672.32	-333.21	60.84	-59.38	0.00	0.00	0.00
3,800.00	9.90	169.65	3,770.83	-350.12	63.93	-62.40	0.00	0.00	0.00
3,900.00	9.90	169.65	3,869.35	-367.02	67.01	-65.41	0.00	0.00	0.00

COLGATE ENERGY

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Project:	Eddy County, NM (N83-NME)	**MD Reference:**	3380+26 @ 3406.00usft (Permit)
Site:	Atlas 18 State Com	**North Reference:**	Grid
Well:	Atlast 18 State Fed Com #122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev 0		

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)
3,961.57	9.90	169.65	3,930.00	-377.43	68.91	-67.27	0.00	0.00	0.00
Bone Spring Lime									
4,000.00	9.90	169.65	3,967.86	-383.93	70.10	-68.42	0.00	0.00	0.00
4,100.00	9.90	169.65	4,066.37	-400.83	73.19	-71.44	0.00	0.00	0.00
4,200.00	9.90	169.65	4,164.88	-417.74	76.27	-74.45	0.00	0.00	0.00
4,300.00	9.90	169.65	4,263.40	-434.64	79.36	-77.46	0.00	0.00	0.00
4,400.00	9.90	169.65	4,361.91	-451.55	82.45	-80.48	0.00	0.00	0.00
4,500.00	9.90	169.65	4,460.42	-468.46	85.53	-83.49	0.00	0.00	0.00
4,600.00	9.90	169.65	4,558.93	-485.36	88.62	-86.50	0.00	0.00	0.00
4,700.00	9.90	169.65	4,657.44	-502.27	91.71	-89.51	0.00	0.00	0.00
4,800.00	9.90	169.65	4,755.96	-519.17	94.79	-92.53	0.00	0.00	0.00
4,900.00	9.90	169.65	4,854.47	-536.08	97.88	-95.54	0.00	0.00	0.00
5,000.00	9.90	169.65	4,952.98	-552.99	100.97	-98.55	0.00	0.00	0.00
5,100.00	9.90	169.65	5,051.49	-569.89	104.05	-101.57	0.00	0.00	0.00
5,200.00	9.90	169.65	5,150.01	-586.80	107.14	-104.58	0.00	0.00	0.00
5,300.00	9.90	169.65	5,248.52	-603.70	110.23	-107.59	0.00	0.00	0.00
5,400.00	9.90	169.65	5,347.03	-620.61	113.31	-110.61	0.00	0.00	0.00
5,500.00	9.90	169.65	5,445.54	-637.52	116.40	-113.62	0.00	0.00	0.00
5,600.00	9.90	169.65	5,544.05	-654.42	119.49	-116.63	0.00	0.00	0.00
5,700.00	9.90	169.65	5,642.57	-671.33	122.57	-119.64	0.00	0.00	0.00
5,800.00	9.90	169.65	5,741.08	-688.23	125.66	-122.66	0.00	0.00	0.00
5,900.00	9.90	169.65	5,839.59	-705.14	128.75	-125.67	0.00	0.00	0.00
6,000.00	9.90	169.65	5,938.10	-722.04	131.83	-128.68	0.00	0.00	0.00
6,100.00	9.90	169.65	6,036.62	-738.95	134.92	-131.70	0.00	0.00	0.00
6,200.00	9.90	169.65	6,135.13	-755.86	138.01	-134.71	0.00	0.00	0.00
6,300.00	9.90	169.65	6,233.64	-772.76	141.10	-137.72	0.00	0.00	0.00
6,360.83	9.90	169.65	6,293.57	-783.05	142.97	-139.55	0.00	0.00	0.00
6,400.00	9.31	169.65	6,332.19	-789.47	144.15	-140.70	1.50	-1.50	0.00
6,500.00	7.81	169.65	6,431.07	-804.11	146.82	-143.31	1.50	-1.50	0.00
6,600.00	6.31	169.65	6,530.31	-816.20	149.03	-145.46	1.50	-1.50	0.00
6,700.00	4.81	169.65	6,629.84	-825.73	150.77	-147.16	1.50	-1.50	0.00
6,800.00	3.31	169.65	6,729.58	-832.69	152.04	-148.40	1.50	-1.50	0.00
6,898.52	1.83	169.65	6,828.00	-837.03	152.83	-149.18	1.50	-1.50	0.00
1st Bone Spring SD									
6,900.00	1.81	169.65	6,829.48	-837.08	152.84	-149.18	1.50	-1.50	0.00
6,959.54	0.92	169.65	6,889.00	-838.47	153.09	-149.43	1.50	-1.50	0.00
2nd Bone Spring LM									
7,000.00	0.31	169.65	6,929.46	-838.90	153.17	-149.51	1.50	-1.50	0.00
7,020.54	0.00	0.00	6,950.00	-838.95	153.18	-149.52	1.50	-1.50	0.00
00-EON (Atlas 18-122)									
7,100.00	0.00	0.00	7,029.46	-838.95	153.18	-149.52	0.00	0.00	0.00
7,200.00	0.00	0.00	7,129.46	-838.95	153.18	-149.52	0.00	0.00	0.00
7,253.40	0.00	0.00	7,182.86	-838.95	153.18	-149.52	0.00	0.00	0.00
KOP: 7253.40' MD, -149.52' VS, 7182.86' TVD									
7,300.00	4.66	263.05	7,229.41	-839.18	151.30	-147.64	10.00	10.00	0.00
7,350.00	9.66	263.05	7,279.00	-839.93	145.12	-141.45	10.00	10.00	0.00
7,400.00	14.66	263.05	7,327.87	-841.21	134.66	-130.99	10.00	10.00	0.00
7,450.00	19.66	263.05	7,375.63	-842.99	120.03	-116.35	10.00	10.00	0.00
7,500.00	24.66	263.05	7,421.92	-845.27	101.31	-97.62	10.00	10.00	0.00
7,550.00	29.66	263.05	7,466.39	-848.03	78.66	-74.96	10.00	10.00	0.00
7,600.00	34.66	263.05	7,508.70	-851.25	52.25	-48.54	10.00	10.00	0.00
7,631.36	37.80	263.05	7,534.00	-853.50	33.85	-30.13	10.00	10.00	0.00
2nd Bone Spring SD									

COLGATE ENERGY

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Site:	Atlas 18 State Com	**North Reference:**	Grid
Well:	Atlast 18 State Fed Com #122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
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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)
7,650.00	39.66	263.05	7,548.54	-854.91	22.28	-18.55	10.00	10.00	0.00
7,700.00	44.66	263.05	7,585.59	-858.97	-11.02	14.77	10.00	10.00	0.00
7,742.08	48.87	263.05	7,614.41	-862.67	-41.45	45.21	10.00	10.00	0.00
01-FTP (Atlas18-122H)									
7,750.00	49.66	263.05	7,619.58	-863.40	-47.40	51.17	10.00	10.00	0.00
7,800.00	54.66	263.05	7,650.24	-868.18	-86.59	90.38	10.00	10.00	0.00
7,853.40	60.00	263.05	7,679.06	-873.61	-131.19	135.00	10.00	10.00	0.00
Start DLS 10.00 TFO 12.79									
7,900.00	64.55	264.19	7,700.73	-878.19	-172.18	176.01	10.00	9.76	2.45
7,950.00	69.44	265.32	7,720.27	-882.38	-217.99	221.84	10.00	9.78	2.26
8,000.00	74.34	266.39	7,735.81	-885.81	-265.38	269.24	10.00	9.79	2.12
8,050.00	79.24	267.40	7,747.23	-888.45	-313.97	317.84	10.00	9.80	2.02
8,100.00	84.14	268.38	7,754.45	-890.27	-363.39	367.27	10.00	9.81	1.96
8,150.00	89.05	269.34	7,757.42	-891.26	-413.28	417.16	10.00	9.81	1.93
8,171.39	91.15	269.75	7,757.38	-891.43	-434.67	438.55	10.00	9.81	1.92
EOC: 8171.39' MD, 438.55' VS, 7757.38' TVD									
8,200.00	91.15	269.75	7,756.81	-891.55	-463.27	467.16	0.00	0.00	0.00
8,300.00	91.15	269.75	7,754.80	-891.99	-563.25	567.14	0.00	0.00	0.00
8,400.00	91.15	269.75	7,752.80	-892.43	-663.23	667.12	0.00	0.00	0.00
8,500.00	91.15	269.75	7,750.79	-892.86	-763.21	767.10	0.00	0.00	0.00
8,600.00	91.15	269.75	7,748.78	-893.30	-863.19	867.08	0.00	0.00	0.00
8,700.00	91.15	269.75	7,746.77	-893.74	-963.17	967.06	0.00	0.00	0.00
8,800.00	91.15	269.75	7,744.77	-894.17	-1,063.14	1,067.04	0.00	0.00	0.00
8,900.00	91.15	269.75	7,742.76	-894.61	-1,163.12	1,167.02	0.00	0.00	0.00
9,000.00	91.15	269.75	7,740.75	-895.04	-1,263.10	1,267.00	0.00	0.00	0.00
9,100.00	91.15	269.75	7,738.75	-895.48	-1,363.08	1,366.98	0.00	0.00	0.00
9,200.00	91.15	269.75	7,736.74	-895.92	-1,463.06	1,466.96	0.00	0.00	0.00
9,300.00	91.15	269.75	7,734.73	-896.35	-1,563.04	1,566.94	0.00	0.00	0.00
9,400.00	91.15	269.75	7,732.73	-896.79	-1,663.02	1,666.92	0.00	0.00	0.00
9,500.00	91.15	269.75	7,730.72	-897.23	-1,763.00	1,766.90	0.00	0.00	0.00
9,600.00	91.15	269.75	7,728.71	-897.66	-1,862.98	1,866.88	0.00	0.00	0.00
9,700.00	91.15	269.75	7,726.70	-898.10	-1,962.96	1,966.86	0.00	0.00	0.00
9,800.00	91.15	269.75	7,724.70	-898.53	-2,062.93	2,066.83	0.00	0.00	0.00
9,900.00	91.15	269.75	7,722.69	-898.97	-2,162.91	2,166.81	0.00	0.00	0.00
10,000.00	91.15	269.75	7,720.68	-899.41	-2,262.89	2,266.79	0.00	0.00	0.00
10,100.00	91.15	269.75	7,718.68	-899.84	-2,362.87	2,366.77	0.00	0.00	0.00
10,200.25	91.15	269.75	7,716.66	-900.28	-2,463.10	2,467.00	0.00	0.00	0.00
Start DLS 2.00 TFO 0.00									
10,268.75	92.52	269.75	7,714.47	-900.58	-2,531.56	2,535.46	2.00	2.00	0.00
10,300.00	92.52	269.75	7,713.10	-900.72	-2,562.78	2,566.69	0.00	0.00	0.00
10,400.00	92.52	269.75	7,708.70	-901.15	-2,662.68	2,666.59	0.00	0.00	0.00
10,500.00	92.52	269.75	7,704.30	-901.59	-2,762.59	2,766.49	0.00	0.00	0.00
10,600.00	92.52	269.75	7,699.91	-902.02	-2,862.49	2,866.40	0.00	0.00	0.00
10,700.00	92.52	269.75	7,695.51	-902.46	-2,962.39	2,966.30	0.00	0.00	0.00
10,800.00	92.52	269.75	7,691.11	-902.89	-3,062.29	3,066.20	0.00	0.00	0.00
10,900.00	92.52	269.75	7,686.72	-903.33	-3,162.20	3,166.11	0.00	0.00	0.00
11,000.00	92.52	269.75	7,682.32	-903.77	-3,262.10	3,266.01	0.00	0.00	0.00
11,100.00	92.52	269.75	7,677.92	-904.20	-3,362.00	3,365.91	0.00	0.00	0.00
11,200.00	92.52	269.75	7,673.53	-904.64	-3,461.90	3,465.82	0.00	0.00	0.00
11,300.00	92.52	269.75	7,669.13	-905.07	-3,561.81	3,565.72	0.00	0.00	0.00
11,400.00	92.52	269.75	7,664.73	-905.51	-3,661.71	3,665.62	0.00	0.00	0.00
11,500.00	92.52	269.75	7,660.33	-905.95	-3,761.61	3,765.53	0.00	0.00	0.00
11,600.00	92.52	269.75	7,655.94	-906.38	-3,861.51	3,865.43	0.00	0.00	0.00

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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)
11,700.00	92.52	269.75	7,651.54	-906.82	-3,961.41	3,965.33	0.00	0.00	0.00
11,800.00	92.52	269.75	7,647.14	-907.25	-4,061.32	4,065.24	0.00	0.00	0.00
11,900.00	92.52	269.75	7,642.75	-907.69	-4,161.22	4,165.14	0.00	0.00	0.00
12,000.00	92.52	269.75	7,638.35	-908.13	-4,261.12	4,265.04	0.00	0.00	0.00
12,100.00	92.52	269.75	7,633.95	-908.56	-4,361.02	4,364.95	0.00	0.00	0.00
12,200.00	92.52	269.75	7,629.56	-909.00	-4,460.93	4,464.85	0.00	0.00	0.00
12,300.00	92.52	269.75	7,625.16	-909.43	-4,560.83	4,564.75	0.00	0.00	0.00
12,400.00	92.52	269.75	7,620.76	-909.87	-4,660.73	4,664.66	0.00	0.00	0.00
12,500.00	92.52	269.75	7,616.37	-910.31	-4,760.63	4,764.56	0.00	0.00	0.00
12,600.00	92.52	269.75	7,611.97	-910.74	-4,860.54	4,864.46	0.00	0.00	0.00
12,700.00	92.52	269.75	7,607.57	-911.18	-4,960.44	4,964.37	0.00	0.00	0.00
12,736.67	92.52	269.75	7,605.96	-911.34	-4,997.07	5,001.00	0.00	0.00	0.00
Start DLS 2.00 TFO -179.51									
12,748.17	92.29	269.75	7,605.48	-911.39	-5,008.56	5,012.49	2.00	-2.00	-0.02
12,800.00	92.29	269.75	7,603.41	-911.61	-5,060.35	5,064.28	0.00	0.00	0.00
12,900.00	92.29	269.75	7,599.41	-912.05	-5,160.27	5,164.20	0.00	0.00	0.00
13,000.00	92.29	269.75	7,595.42	-912.49	-5,260.19	5,264.12	0.00	0.00	0.00
13,100.00	92.29	269.75	7,591.42	-912.93	-5,360.11	5,364.04	0.00	0.00	0.00
13,200.00	92.29	269.75	7,587.42	-913.37	-5,460.03	5,463.96	0.00	0.00	0.00
13,300.00	92.29	269.75	7,583.43	-913.81	-5,559.95	5,563.88	0.00	0.00	0.00
13,400.00	92.29	269.75	7,579.43	-914.25	-5,659.87	5,663.80	0.00	0.00	0.00
13,500.00	92.29	269.75	7,575.44	-914.69	-5,759.78	5,763.72	0.00	0.00	0.00
13,600.00	92.29	269.75	7,571.44	-915.13	-5,859.70	5,863.64	0.00	0.00	0.00
13,700.00	92.29	269.75	7,567.44	-915.57	-5,959.62	5,963.56	0.00	0.00	0.00
13,800.00	92.29	269.75	7,563.45	-916.01	-6,059.54	6,063.48	0.00	0.00	0.00
13,900.00	92.29	269.75	7,559.45	-916.45	-6,159.46	6,163.40	0.00	0.00	0.00
14,000.00	92.29	269.75	7,555.46	-916.89	-6,259.38	6,263.32	0.00	0.00	0.00
14,100.00	92.29	269.75	7,551.46	-917.33	-6,359.30	6,363.24	0.00	0.00	0.00
14,200.00	92.29	269.75	7,547.47	-917.77	-6,459.22	6,463.16	0.00	0.00	0.00
14,300.00	92.29	269.75	7,543.47	-918.21	-6,559.14	6,563.08	0.00	0.00	0.00
14,400.00	92.29	269.75	7,539.47	-918.65	-6,659.06	6,663.00	0.00	0.00	0.00
14,500.00	92.29	269.75	7,535.48	-919.09	-6,758.98	6,762.92	0.00	0.00	0.00
14,600.00	92.29	269.75	7,531.48	-919.52	-6,858.90	6,862.84	0.00	0.00	0.00
14,700.00	92.29	269.75	7,527.49	-919.96	-6,958.81	6,962.76	0.00	0.00	0.00
14,800.00	92.29	269.75	7,523.49	-920.40	-7,058.73	7,062.68	0.00	0.00	0.00
14,900.00	92.29	269.75	7,519.49	-920.84	-7,158.65	7,162.60	0.00	0.00	0.00
15,000.00	92.29	269.75	7,515.50	-921.28	-7,258.57	7,262.52	0.00	0.00	0.00
15,048.25	92.29	269.75	7,513.57	-921.49	-7,306.79	7,310.74	0.00	0.00	0.00
02-LTP (Atlas18-122H)									
15,100.00	92.29	269.75	7,511.50	-921.72	-7,358.49	7,362.44	0.00	0.00	0.00
15,138.34	92.29	269.75	7,509.97	-921.89	-7,396.80	7,400.75	0.00	0.00	0.00
TD: 15138.34' MD, 7400.75' VS, 7509.97' TVD - 03-PBHL (Atlas18-122H)									

COLGATE ENERGY

Planning Report

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well Atlast 18 State Fed Com #122H
Company:	Colgate Energy	**TVD Reference:**	3380+26 @ 3406.00usft (Permit)
Project:	Eddy County, NM (N83-NME)	**MD Reference:**	3380+26 @ 3406.00usft (Permit)
Site:	Atlas 18 State Com	**North Reference:**	Grid
Well:	Atlast 18 State Fed Com #122H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Permit		
Design:	APD-Rev 0		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
00-EON (Atlas 18-122) - plan hits target center - Point	0.00	0.00	6,950.00	-838.95	153.18	604,983.38	608,742.81	32.66295442	-104.11429803
03-PBHL (Atlas18-122H - plan hits target center - Point	0.00	0.00	7,509.97	-921.89	-7,396.80	604,900.44	601,192.83	32.66276686	-104.13883225
02-LTP (Atlas18-122H) - plan misses target center by 0.79usft at 15048.25usft MD (7513.57 TVD, -921.49 N, -7306.79 E) - Point	0.00	0.00	7,513.57	-920.70	-7,306.79	604,901.63	601,282.84	32.66276968	-104.13853976
01-FTP (Atlas18-122H) - plan misses target center by 211.34usft at 7742.08usft MD (7614.41 TVD, -862.67 N, -41.45 E) - Point	0.00	0.00	7,766.00	-889.17	103.40	604,933.16	608,693.03	32.66281666	-104.11446013

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
426.00	426.00	Rustler			
446.00	446.00	Top of Salt			
696.00	696.00	Base of Salt			
946.00	946.00	Yates			
2,929.21	2,913.00	DLWR Mnt Group			
3,361.64	3,339.00	Lower Brushy Canyon			
3,961.57	3,930.00	Bone Spring Lime			
6,898.52	6,828.00	1st Bone Spring SD			
6,959.54	6,889.00	2nd Bone Spring LM			
7,631.36	7,534.00	2nd Bone Spring SD			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
7,253.40	7,182.86	-838.95	153.18	KOP: 7253.40' MD, -149.52' VS, 7182.86' TVD
7,853.40	7,679.06	-873.61	-131.19	Start DLS 10.00 TFO 12.79
8,171.39	7,757.38	-891.43	-434.67	EOC: 8171.39' MD, 438.55' VS, 7757.38' TVD
10,200.25	7,716.66	-900.28	-2,463.10	Start DLS 2.00 TFO 0.00
12,736.67	7,605.96	-911.34	-4,997.07	Start DLS 2.00 TFO -179.51
15,138.34	7,509.97	-921.89	-7,396.80	TD: 15138.34' MD, 7400.75' VS, 7509.97' TVD

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Grand Junction, Colorado 81506
https://www.blm.gov

Request for Authorization

To: Laura Daniel-Davis
Senior Advisor to the Secretary,
Exercising the Delegated Authority of the Assistant Secretary,
Land and Minerals Management

From: Michael D. Nedd
Deputy Director, Operations
Exercising the Delegated Authority of the Director
Bureau of Land Management

Bureau/Office: Bureau of Land Management, New Mexico State Office

Action for which Approval is Requested:
On behalf of the Bureau of Land Management (BLM) Carlsbad Field Office, request is made to approve the following Applications for Permit to Drill (APD) for Colgate Energy, located in Eddy County, New Mexico:

APD 10400059729 Atlas 18 State Fed Com 122H
APD 10400059781 Atlas 18 State Fed Com 131H
APD 10400059797 Atlas 18 State Fed Com 132H

These three APDs are being submitted as one request because the potential impacts of each APD were analyzed in the same National Environmental Policy Act (NEPA) document, an environmental assessment (EA) DOI-BLM-NM-P020-2020-1301-EA (see Attachment 1). The leases associated with these APDs were issued in 1949, prior to the enactment of the Federal Land Management and Policy Act (FLPMA) or NEPA.

The approval of these APDs is time-sensitive because Colgate Energy is planning to bring a drilling rig into the region and needs to finalize the construction and rig schedule. In addition, the surface holes for the three APDs are on state land, overlying non-Federal minerals, but the bottom holes are in federal minerals (typically referred to as Fee/Fee/Fed wells). Colgate Energy can drill the state minerals with the same surface disturbance and strand the federal minerals if these APDs are not approved.

One Paragraph Summary of Action:
Colgate Energy has requested to drill three horizontal wells 17 miles northeast of Carlsbad, New Mexico. In association with the Atlas 18 project, Colgate Energy is proposing to construct a 4.4-

acre well pad, a 4.0-acre Central Tank Battery (CTB), a 543.56-foot access road to the well pad, and 1,406.79 feet of access road to the CTB.

These drilling permits were signed by the Carlsbad Field Office on January 21, 2021, when the Authorizing Official delegation of authority to approve APDs had been temporarily suspended by the Acting Secretary of the Interior pursuant to Secretary's Order 3395. On January 28, 2021, the Carlsbad Field Office notified Colgate Energy that the approval was invalid (see Attachment 2).

Positions of Affected Stakeholders:
Although the state of New Mexico will be impacted by ongoing climate change to which fossil fuel combustion contributes, the state is also currently heavily reliant on the revenue from oil and gas development. The communities of southeast New Mexico support the continuation of drilling operations and related activities.

The Carlsbad Field Office publishes NEPA documents to the national register (ePlanning) at https://eplanning.blm.gov. The register allows the public to review and comment online on BLM NEPA and planning projects. There were no comments received concerning this project.

Key Facts:

- The project is in the Permian Basin, an area of active oil and gas development for the past century.
- The APD is associated with Fluid Mineral Lease NMLC 0069107, which was issued 8/31/1949. The lease has been held by production (meaning the lease is in effect while there is production in paying quantities) since 7/1/1958.
- No protests were received prior to the issuance of the lease.
- EA DOI-BLM-NM-P020-2020-1301 (see Attachment 1) is available at this ePlanning link: https://eplanning.blm.gov/public_projects/2001735/200384503/20032614/250038813/EA%20for%20Atlas%2018%20State%20Fed%20Com.PDF
- The Finding of No Significant Impact (FONSI) (see Attachment 3), signed January 5, 2021 is available at: https://eplanning.blm.gov/public_projects/2001735/200384503/20032612/250038811/Signed%20FONSI%20for%20Atlas%2018%20State%20Fed%20Com.PDF The FONSI was incorrectly signed as 01/05/2020 and corrected to reflect the year 2021.
- The Decision Record (DR) for the EA (see Attachment 4) for the APDs was signed on January 5, 2021. The DR is on ePlanning at the following link: https://eplanning.blm.gov/public_projects/2001735/200384503/20032613/250038812/Signed%20DR%20for%20Atlas%2018%20State%20Fed%20Com.PDF. The DR was incorrectly signed as 01/05/2020 and corrected to reflect the year 2021.
- There has been no litigation related to the EA for these APDs. There is no environmental analysis for Lease NMLC 0069107 as NEPA was not completed for oil and gas leasing at that time.
- The only primary potential resource conflict identified for the action is cave and karst resources. Stipulations are identified on pages 52 to 54 of the EA (Attachment 1) that reduce these impacts.

Other Relevant Considerations:
This request is associated with DTS# BLM0024996.

Consistent with Secretary's Order 3395 and Section 2 of the Reorganization Plan No. 3 of 1950, 64 Stat. 1262, I ___DO/___DO NOT approve the action(s) set forth above.

Comment:

_____ _____
Signature Date

Attachments
1 – Environmental Assessment for Colgate DOI-BLM-NM-P020-2020-1301
2 – Letter to Colgate Operating, January 28, 2021
3 – Finding of No Significant Impact for DOI-BLM-NM-P020-2020-1301-EA
4 – Decision Record for DOI-BLM-NM-P020-2020-1301-EA

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

COMMENTS

Action 21986

COMMENTS

Operator:	OGRID:	Action Number:	Action Type:
COLGATE OPERATING, LLC 300 North Marienfeld Street Suite 1000 Midland, TX79701	371449	21986	FORM 3160-3

Created By	Comment	Comment Date
kpickford	KP GEO Review 3/26/2021	03/26/2021

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CONDITIONS

Action 21986

CONDITIONS OF APPROVAL

Operator:	OGRID:	Action Number:	Action Type:
COLGATE OPERATING, LLC 300 North Marienfeld Street Suite 1000 Midland, TX79701	371449	21986	FORM 3160-3

OCD Reviewer	Condition
kpickford	Notify OCD 24 hours prior to casing & cement
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104
kpickford	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system