PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY
LEASE NO.:	NMNM026394
WELL NAME & NO.:	VACA DRAW 20 17 FEDERAL 13H
SURFACE HOLE FOOTAGE:	330'/S & 730'/W
BOTTOM HOLE FOOTAGE	330'/N & 1202'/W
LOCATION:	SECTION 20, T25S, R33E, NMPM
COUNTY:	LEA, NEW MEXICO

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1034** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

Approval Date: 10/04/2018

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Operator shall filled 1/3rd of casing with fluid while running intermediate casing to maintain collapse safety factor.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is: Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. The minimum required fill of cement behind the **5-1/2 x 5** inch production casing is:
   - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement maybe required. Excess calculates to 14%.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8** intermediate casing shoe shall be **10,000 (10M)** psi.

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area

immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be

tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

   b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

   c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

   d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

   e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

   f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

   g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 091318

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

10/04/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Aricka Easterling **Signed on:** 04/11/2018

Title: Regulatory Analyst

Street Address: 202 S. Cheyenne Ave, Ste 1000

City: Tulsa **State:** OK **Zip:** 74103

Phone: (918)560-7060

Email address: aeasterling@cimarex.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

Hydrogen Sulfide Drilling Operations Plan
Vaca Draw 20-17 Federal 13H
Cimarex Energy Co.
UL: M, Sec. 20, 25S, 33E
Lea Co., NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H_2S
B. Physical effects and hazards
C. Principal and operation of H2S detectors, warning system and briefing areas.
D. Evacuation procedure, routes and first aid.
E. Proper use of safety equipment & life support systems
F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H_2S Detection and Alarm Systems:

A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.

B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

3 Windsock and/or wind streamers:

A. Windsock at mudpit area should be high enough to be visible.
B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

4 Condition Flags and Signs

A. Warning sign on access road to location.
B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H_2S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

5 Well control equipment:

A. See exhibit "E-1"

6 Communication:

A. While working under masks chalkboards will be used for communication.
B. Hand signals will be used where chalk board is inappropriate.
C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drillstem Testing:
No DSTs r cores are planned at this time.

8 Drilling contractor supervisor will be required to be familiar with the effects H_2S has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

H_2S Contingency Plan
Vaca Draw 20-17 Federal 13H
Cimarex Energy Co.
UL: M, Sec. 20, 25S, 33E
Lea Co., NM

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must:

« Isolate the area and prevent entry by other persons into the 100 ppm ROE.
« Evacuate any public places encompassed by the 100 ppm ROE.
« Be equipped with H_2S monitors and air packs in order to control the release.
« Use the "buddy system" to ensure no injuries occur during the 432-620-1975
« Take precautions to avoid personal injury during this operation.
« Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
« Have received training in the:
  - Detection of H_2S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H_2S and SO_2

Please see attached International Chemical Safety Cards.

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H_2S Contingency Plan Emergency Contacts

Vaca Draw 20-17 Federal 13H

Cimarex Energy Co.

UL: M, Sec. 20, 25S, 33E

Lea Co., NM

Company Office			
Cimarex Energy Co. of Colorado		800-969-4789	
Co. Office and After-Hours Menu			

Key Personnel			
Name	**Title**	**Office**	**Mobile**
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		432-634-2136

Artesia		
Ambulance	911	
State Police	575-746-2703	
City Police	575-746-2703	
Sheriff's Office	575-746-9888	
Fire Department	**575-746-2701**	
Local Emergency Planning Committee	575-746-2122	
New Mexico Oil Conservation Division	575-748-1283	

Carlsbad		
Ambulance	911	
State Police	575-885-3137	
City Police	575-885-2111	
Sheriff's Office	575-887-7551	
Fire Department	**575-887-3798**	
Local Emergency Planning Committee	575-887-6544	
US Bureau of Land Management	575-887-6544	

Santa Fe		
New Mexico Emergency Response Commission (Santa Fe)	505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126	
New Mexico State Emergency Operations Center	505-476-9635	

National		
National Emergency Response Center (Washington, D.C.)	800-424-8802	

Medical		
Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949	

Other			
Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

Schlumberger

CIMAREX

Cimarex Vaca Draw 20-17 Federal #13H Rev2 RM 29Mar18 Anti-Collision Summary Report

Analysis Date-24hr Time:	March 29, 2018 - 14:32	**Analysis Method:**	3D Least Distance
Client:	Cimarex	**Reference Trajectory:**	Cimarex Vaca Draw 20-17 Federal #13H Rev2 RM 29Mar18 (Non-Def Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex Vaca Draw 20-17 Federal #13H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	Cimarex Vaca Draw 20-17 Federal #13H	**Min Pts:**	All local minima indicated.
Well:	Cimarex Vaca Draw 20-17 Federal #13H	**Version / Patch:**	2.10.706.0
Borehole:	Original Borehole	**Database \ Project:**	US1153APP452.dir.slb.com\drilling-NM Lea County 2.10
Scan MD Range:	0.00ft ~ 22120.62ft		

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Results highlighted: Sep-Factor separation <= 1.50 ft													
Cimarex Vaca Draw 20-17 Federal #8H Rev2 RM 29Mar18 (Non-Def Plan)													Warning Alert
	19.99	16.49	17.49	3.50	N/A	MAS = 5.03 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	19.99	16.49	17.49	3.50	N/A	MAS = 5.03 (m)	24.00	24.00				WRP	
	19.99	16.49	8.45	3.50	1.94	MAS = 5.03 (m)	1500.00	1500.00				MinPts	
	20.13	16.62	8.21	3.50	1.87	OSF1.50	1600.00	1599.98				MinPts	
	59.35	19.60	45.45	39.75	4.99	OSF1.50	2320.00	2315.91	OSF>5.00			Exit Alert	
	410.95	95.86	346.20	315.08	6.56	OSF1.50	12130.00	12098.68				MinPt-CtCt	
	411.05	96.20	346.08	314.85	6.54	OSF1.50	12170.00	12135.10				MINPT-O-EOU	
	411.20	96.37	346.12	314.83	6.53	OSF1.50	12190.00	12152.77				MinPt-O-ADP	
	414.03	97.48	348.21	316.55	6.50	OSF1.50	12330.00	12263.32				MinPt-O-SF	
	428.13	130.31	340.43	297.82	5.00	OSF1.50	14460.00	12430.00	OSF<5.00			Enter Alert	
	428.13	352.81	192.09	75.33	1.82	OSF1.50	22120.62	12430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #7H Rev1 RM 13Mar18 (Non-Def Plan)													Warning Alert
	39.99	32.49	37.49	7.50	N/A	MAS = 9.90 (m)	0.00	0.00	CtCt<=15m<15.00			Enter Alert	
	39.99	32.49	37.49	7.50	42186.63	MAS = 9.90 (m)	24.00	24.00				WRP	
	39.99	32.49	28.45	7.50	4.15	MAS = 9.90 (m)	1500.00	1500.00				MinPts	
	40.01	32.49	28.42	7.52	4.13	MAS = 9.90 (m)	1510.00	1510.00				MINPT-O-EOU	
	40.62	32.49	28.80	8.13	4.09	MAS = 9.90 (m)	1560.00	1560.00				MinPt-O-SF	
	52.71	32.49	40.08	20.21	4.96	MAS = 9.90 (m)	1770.00	1769.60	OSF>5.00			Exit Alert	
	415.35	107.44	342.90	307.92	5.90	OSF1.50	12980.00	12430.00				MinPt-CtCt	
	415.35	126.55	330.15	288.80	4.99	OSF1.50	14140.00	12430.00	OSF<5.00			Enter Alert	
	415.36	351.84	179.97	63.52	1.77	OSF1.50	22120.62	12430.00				MinPts	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Cimarex Vaca Draw 20-17 Federal #1H ST01 Rev1 RM 15Feb18 (Def Plan)													Warning Alert
	152.29	32.81	149.79	119.48	552801.16	MAS = 10.00 (m)	0.00	0.00				Surface	
	152.28	32.81	149.77	119.47	22778.07	MAS = 10.00 (m)	24.00	24.00				WRP	
	151.48	32.81	148.01	118.67	154.19	MAS = 10.00 (m)	250.00	250.00				MinPts	
	151.56	32.81	147.90	118.76	128.35	MAS = 10.00 (m)	290.00	290.00				MINPT-O-EOU	
	173.36	32.81	163.73	140.55	23.98	MAS = 10.00 (m)	1550.00	1550.00				MinPt-O-SF	
	397.36	32.81	384.38	364.55	37.70	MAS = 10.00 (m)	3250.00	3239.53				MinPt-O-SF	
	491.92	32.81	476.49	459.12	37.85	MAS = 10.00 (m)	3880.00	3865.20				MinPt-O-SF	
	525.83	32.81	509.45	493.02	37.72	MAS = 10.00 (m)	4100.00	4083.69				MinPt-O-SF	
	551.29	32.81	534.21	518.48	37.64	MAS = 10.00 (m)	4280.00	4262.46				MinPt-O-SF	
	648.29	32.81	626.55	613.48	37.34	MAS = 10.00 (m)	4920.00	4898.07				MinPt-O-SF	
	668.98	32.81	648.62	636.17	37.32	MAS = 10.00 (m)	5060.00	5037.11				MinPt-O-SF	
	746.36	32.81	723.87	713.55	37.21	MAS = 10.00 (m)	5526.09	5500.00				MinPt-O-SF	
	860.19	41.64	831.59	818.54	32.87	OSF1.50	8440.00	8413.14				MINPT-O-EOU	
	860.46	42.02	831.61	818.44	32.56	OSF1.50	8520.00	8493.14				MinPt-O-ADP	
	865.20	46.85	833.13	818.34	29.18	OSF1.50	9570.00	9543.14				MinPt-CtCt	
	833.87	59.51	793.36	774.36	21.87	OSF1.50	11830.00	11803.14				MinPt-CtCt	
	833.92	59.62	793.34	774.30	21.83	OSF1.50	11850.00	11823.14				MINPT-O-EOU	
	833.97	59.68	793.35	774.29	21.81	OSF1.50	11860.00	11833.14				MinPt-O-ADP	
	827.48	65.74	782.82	761.74	19.57	OSF1.50	12780.00	12420.29				MinPt-CtCt	
	827.47	66.88	782.05	760.59	19.22	OSF1.50	12870.00	12427.94				MinPt-CtCt	
	827.61	67.36	781.88	760.26	19.08	OSF1.50	12910.00	12429.53				MINPT-O-EOU	
	827.83	67.61	781.92	760.22	19.01	OSF1.50	12930.00	12429.90				MinPt-O-ADP	
	824.10	249.25	657.10	574.85	4.99	OSF1.50	19500.00	12430.00	OSF<5.00			Enter Alert	
	823.19	332.13	600.93	491.05	3.73	OSF1.50	22120.62	12430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #6H Rev2 RM 15Feb18 (Non-Def Plan)													Pass
	116.60	32.81	114.10	83.79	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	116.60	32.81	114.10	83.79	128383.82	MAS = 10.00 (m)	24.00	24.00				WRP	
	116.60	32.81	105.06	83.79	12.62	MAS = 10.00 (m)	1500.00	1500.00				MinPts	
	116.66	32.81	105.03	83.85	12.50	MAS = 10.00 (m)	1520.00	1520.00				MINPT-O-EOU	
	119.54	32.81	107.39	86.73	12.12	MAS = 10.00 (m)	1640.00	1639.94				MinPt-O-SF	
	573.97	51.43	538.85	522.54	17.52	OSF1.50	6030.00	6003.14				MINPT-O-EOU	
	573.99	51.46	538.85	522.53	17.51	OSF1.50	6040.00	6013.14				MinPt-O-ADP	
	574.75	51.64	539.48	523.10	17.47	OSF1.50	6100.00	6073.14				MinPt-O-SF	
	613.76	62.71	571.12	551.05	15.23	OSF1.50	8770.00	8743.14				MinPts	
	614.49	62.87	571.75	551.63	15.21	OSF1.50	8810.00	8783.14				MinPt-O-SF	
	3248.58	107.74	3173.92	3138.84	46.24	OSF1.50	15580.00	12430.00				MinPt-CtCt	
	3284.82	308.30	3079.79	2978.53	16.21	OSF1.50	22120.62	12430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #5H 0 to update (Non-Def Survey)													Pass
	134.15	32.81	131.65	101.34	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	134.14	32.81	131.63	101.33	31982.48	MAS = 10.00 (m)	24.00	24.00				WRP	
	133.41	32.81	129.44	100.60	89.05	MAS = 10.00 (m)	360.00	360.00				MinPts	
	133.13	32.81	128.42	100.32	59.29	MAS = 10.00 (m)	540.00	540.00				MinPts	
	133.18	32.81	127.56	100.37	41.84	MAS = 10.00 (m)	760.00	760.00				MinPts	
	133.42	32.81	127.27	100.61	35.82	MAS = 10.00 (m)	870.00	870.00				MINPT-O-EOU	
	137.14	32.81	128.17	104.33	20.81	MAS = 10.00 (m)	1510.00	1510.00				MINPT-O-EOU	
	138.69	32.81	129.46	105.88	20.23	MAS = 10.00 (m)	1600.00	1599.98				MinPt-O-SF	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	322.70	32.81	310.21	289.89	32.04	MAS = 10.00 (m)	3120.00	3110.42				MinPt-O-SF	
	440.74	32.81	425.21	407.93	33.65	MAS = 10.00 (m)	3890.00	3875.14				MinPt-O-SF	
	554.37	32.81	535.26	521.57	33.22	MAS = 10.00 (m)	4770.00	4749.10				MinPt-O-SF	
	646.82	32.81	624.97	614.01	33.30	MAS = 10.00 (m)	5410.00	5384.70				MinPt-O-SF	
	689.18	32.81	667.12	656.37	35.10	MAS = 10.00 (m)	6180.00	6153.14				MinPts	
	689.19	32.81	667.11	656.38	35.08	MAS = 10.00 (m)	6190.00	6163.14				MINPT-O-EOU	
	710.38	40.33	682.66	670.04	28.07	OSF1.50	8390.00	8363.14				MinPt-CtCt	
	710.69	41.42	682.25	669.27	27.29	OSF1.50	8620.00	8593.14				MINPT-O-EOU	
	710.98	41.79	682.20	669.19	27.05	OSF1.50	8700.00	8673.14				MinPt-O-ADP	
	717.82	45.41	686.71	672.41	25.00	OSF1.50	9420.00	9393.14				MinPt-O-ADP	
	720.44	45.93	688.98	674.51	24.80	OSF1.50	9540.00	9513.14				MinPt-O-SF	
	2592.31	36.70	2567.01	2555.62	113.59	OSF1.50	12990.00	12430.00				MinPt-CtCt	
	2592.38	36.87	2566.96	2555.50	113.01	OSF1.50	13010.00	12430.00				MINPT-O-EOU	
	2592.53	37.06	2566.99	2555.47	112.42	OSF1.50	13030.00	12430.00				MinPt-O-ADP	
	2586.28	52.68	2550.33	2533.60	77.23	OSF1.50	13730.00	12430.00				MinPt-CtCt	
	2586.53	53.42	2550.08	2533.11	76.12	OSF1.50	13780.00	12430.00				MINPT-O-EOU	
	2586.77	53.71	2550.13	2533.06	75.69	OSF1.50	13800.00	12430.00				MinPt-O-ADP	
	2582.72	66.26	2537.71	2516.46	60.70	OSF1.50	14250.00	12430.00				MinPt-CtCt	
	2578.46	81.16	2523.52	2497.30	49.12	OSF1.50	14790.00	12430.00				MinPt-CtCt	
	2576.63	84.02	2522.78	2495.61	47.42	OSF1.50	14920.00	12430.00				MINPT-O-EOU	
	2574.73	95.32	2510.35	2479.41	41.57	OSF1.50	15290.00	12430.00				MinPt-CtCt	
	2574.76	95.39	2510.33	2479.37	41.54	OSF1.50	15300.00	12430.00				MINPT-O-EOU	
	2574.83	95.46	2510.35	2479.36	41.51	OSF1.50	15310.00	12430.00				MinPt-O-ADP	
	2597.38	97.37	2531.63	2500.00	41.03	OSF1.50	15630.00	12430.00				MinPt-O-SF	
	7301.84	82.69	7245.88	7219.15	136.53	OSF1.50	22120.62	12430.00				TD	
Cimarex Vaca Draw 20-17 Federal #5H Rev7 RM 19Mar18 (Def Plan)													Pass
	134.15	32.81	131.65	101.34	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	134.14	32.81	131.63	101.33	31982.48	MAS = 10.00 (m)	24.00	24.00				WRP	
	133.41	32.81	129.44	100.60	89.05	MAS = 10.00 (m)	360.00	360.00				MinPts	
	133.13	32.81	128.42	100.32	59.29	MAS = 10.00 (m)	540.00	540.00				MinPts	
	133.18	32.81	127.56	100.37	41.84	MAS = 10.00 (m)	760.00	760.00				MinPts	
	133.42	32.81	127.27	100.61	35.82	MAS = 10.00 (m)	870.00	870.00				MINPT-O-EOU	
	137.14	32.81	128.17	104.33	20.81	MAS = 10.00 (m)	1510.00	1510.00				MINPT-O-EOU	
	138.69	32.81	129.46	105.88	20.23	MAS = 10.00 (m)	1600.00	1599.98				MinPt-O-SF	
	322.70	32.81	310.21	289.89	32.04	MAS = 10.00 (m)	3120.00	3110.42				MinPt-O-SF	
	440.74	32.81	425.21	407.93	33.65	MAS = 10.00 (m)	3890.00	3875.14				MinPt-O-SF	
	554.37	32.81	535.26	521.57	33.22	MAS = 10.00 (m)	4770.00	4749.10				MinPt-O-SF	
	646.82	32.81	624.97	614.01	33.30	MAS = 10.00 (m)	5410.00	5384.70				MinPt-O-SF	
	689.18	32.81	667.12	656.37	35.10	MAS = 10.00 (m)	6180.00	6153.14				MinPts	
	689.19	32.81	667.11	656.38	35.08	MAS = 10.00 (m)	6190.00	6163.14				MINPT-O-EOU	
	710.38	40.33	682.66	670.04	28.07	OSF1.50	8390.00	8363.14				MinPt-CtCt	
	710.69	41.42	682.25	669.27	27.29	OSF1.50	8620.00	8593.14				MINPT-O-EOU	
	710.98	41.79	682.20	669.19	27.05	OSF1.50	8700.00	8673.14				MinPt-O-ADP	
	717.82	45.41	686.71	672.41	25.00	OSF1.50	9420.00	9393.14				MinPt-O-ADP	
	720.44	45.93	688.98	674.51	24.80	OSF1.50	9540.00	9513.14				MinPt-O-SF	
	2592.31	36.70	2567.01	2555.62	113.59	OSF1.50	12990.00	12430.00				MinPt-CtCt	
	2592.38	36.87	2566.96	2555.50	113.01	OSF1.50	13010.00	12430.00				MINPT-O-EOU	
	2592.53	37.06	2566.99	2555.47	112.42	OSF1.50	13030.00	12430.00				MinPt-O-ADP	
	2586.28	52.68	2550.33	2533.60	77.23	OSF1.50	13730.00	12430.00				MinPt-CtCt	
	2586.53	53.42	2550.08	2533.11	76.12	OSF1.50	13780.00	12430.00				MINPT-O-EOU	
	2586.77	53.71	2550.13	2533.06	75.69	OSF1.50	13800.00	12430.00				MinPt-O-ADP	
	2582.72	66.26	2537.71	2516.46	60.70	OSF1.50	14250.00	12430.00				MinPt-CtCt	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	2578.46	81.16	2523.52	2497.30	49.12	OSF1.50	14790.00	12430.00				MinPt-CtCt	
	2579.63	84.02	2522.78	2495.61	47.42	OSF1.50	14920.00	12430.00				MINPT-O-EOU	
	2567.92	101.21	2499.62	2466.71	38.99	OSF1.50	15490.00	12430.00				MinPt-CtCt	
	2568.31	102.54	2499.12	2465.77	38.47	OSF1.50	15560.00	12430.00				MINPT-O-EOU	
	2568.93	103.30	2499.23	2465.63	38.19	OSF1.50	15600.00	12430.00				MinPt-O-ADP	
	2584.36	301.86	2382.29	2282.50	12.94	OSF1.50	22120.62	12430.00				MinPts	
Cimarex Vaca Draw 20-17 Federal #1H Surcon 0ft-12740 (Def Survey)													Pass
	152.29	32.81	149.79	119.48	552801.16	MAS = 10.00 (m)	0.00	0.00				Surface	
	152.28	32.81	149.77	119.47	22778.06	MAS = 10.00 (m)	24.00	24.00				WRP	
	151.48	32.81	148.01	118.67	154.19	MAS = 10.00 (m)	250.00	250.00				MinPts	
	151.56	32.81	147.90	118.76	128.35	MAS = 10.00 (m)	290.00	290.00				MINPT-O-EOU	
	173.36	32.81	163.73	140.55	23.98	MAS = 10.00 (m)	1550.00	1550.00				MinPt-O-SF	
	397.36	32.81	384.38	364.55	37.70	MAS = 10.00 (m)	3250.00	3239.53				MinPt-O-SF	
	491.92	32.81	476.49	459.12	37.85	MAS = 10.00 (m)	3880.00	3865.20				MinPt-O-SF	
	525.83	32.81	509.45	493.02	37.72	MAS = 10.00 (m)	4100.00	4083.69				MinPt-O-SF	
	551.29	32.81	534.21	518.48	37.64	MAS = 10.00 (m)	4280.00	4262.46				MinPt-O-SF	
	646.29	32.81	626.55	613.48	37.34	MAS = 10.00 (m)	4920.00	4898.07				MinPt-O-SF	
	668.98	32.81	648.62	636.17	37.32	MAS = 10.00 (m)	5060.00	5037.11				MinPt-O-SF	
	746.36	32.81	723.87	713.55	37.21	MAS = 10.00 (m)	5526.09	5500.00				MinPt-O-SF	
	860.19	41.64	831.59	818.54	32.87	OSF1.50	8440.00	8413.14				MINPT-O-EOU	
	860.46	42.02	831.61	818.44	32.56	OSF1.50	8520.00	8493.14				MinPt-O-ADP	
	865.20	46.85	833.13	818.34	29.18	OSF1.50	9570.00	9543.14				MinPt-CtCt	
	829.40	61.27	787.72	768.13	21.11	OSF1.50	12150.00	12117.07				MinPt-CtCt	
	829.42	61.32	787.71	768.10	21.09	OSF1.50	12160.00	12126.13				MINPT-O-EOU	
	829.47	61.37	787.72	768.10	21.07	OSF1.50	12170.00	12135.10				MinPt-O-ADP	
	835.49	62.22	793.18	773.27	20.92	OSF1.50	12320.00	12256.30				MinPt-O-SF	
	9895.69	64.86	9851.62	9830.84	237.97	OSF1.50	22120.62	12430.00				TD	
Cimarex Vaca Draw 20-17 Federal #1H ST01 MWD 0ft-Update (Non-Def Survey)													Pass
	152.29	32.81	149.79	119.48	552801.16	MAS = 10.00 (m)	0.00	0.00				Surface	
	152.28	32.81	149.77	119.47	22778.06	MAS = 10.00 (m)	24.00	24.00				WRP	
	151.48	32.81	148.01	118.67	154.19	MAS = 10.00 (m)	250.00	250.00				MinPts	
	151.56	32.81	147.90	118.76	128.35	MAS = 10.00 (m)	290.00	290.00				MINPT-O-EOU	
	173.36	32.81	163.73	140.55	23.98	MAS = 10.00 (m)	1550.00	1550.00				MinPt-O-SF	
	397.36	32.81	384.38	364.55	37.70	MAS = 10.00 (m)	3250.00	3239.53				MinPt-O-SF	
	491.92	32.81	476.49	459.12	37.85	MAS = 10.00 (m)	3880.00	3865.20				MinPt-O-SF	
	525.83	32.81	509.45	493.02	37.72	MAS = 10.00 (m)	4100.00	4083.69				MinPt-O-SF	
	551.29	32.81	534.21	518.48	37.64	MAS = 10.00 (m)	4280.00	4262.46				MinPt-O-SF	
	646.29	32.81	626.55	613.48	37.34	MAS = 10.00 (m)	4920.00	4898.07				MinPt-O-SF	
	668.98	32.81	648.62	636.17	37.32	MAS = 10.00 (m)	5060.00	5037.11				MinPt-O-SF	
	746.36	32.81	723.87	713.55	37.21	MAS = 10.00 (m)	5526.09	5500.00				MinPt-O-SF	
	860.19	41.64	831.59	818.54	32.87	OSF1.50	8440.00	8413.14				MINPT-O-EOU	
	860.46	42.02	831.61	818.44	32.56	OSF1.50	8520.00	8493.14				MinPt-O-ADP	
	865.20	46.85	833.13	818.34	29.18	OSF1.50	9570.00	9543.14				MinPt-CtCt	
	833.87	59.51	793.36	774.36	21.87	OSF1.50	11830.00	11803.14				MinPt-CtCt	
	833.92	59.62	793.34	774.30	21.83	OSF1.50	11850.00	11823.14				MINPT-O-EOU	
	833.97	59.68	793.35	774.29	21.81	OSF1.50	11860.00	11833.14				MinPt-O-ADP	
	827.48	65.74	782.82	761.74	19.57	OSF1.50	12780.00	12420.29				MinPt-CtCt	
	827.47	66.88	782.05	760.59	19.22	OSF1.50	12870.00	12427.94				MinPt-CtCt	
	827.61	67.36	781.88	760.26	19.08	OSF1.50	12910.00	12429.53				MINPT-O-EOU	
	827.83	67.61	781.92	760.22	19.01	OSF1.50	12930.00	12429.90				MinPt-O-ADP	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	826.91	73.50	777.08	753.41	17.42	OSF1.50	13310.00	12430.00				MinPt-CtCt	
	820.37	79.44	766.58	740.93	15.94	OSF1.50	13630.00	12430.00				MinPt-CtCt	
	820.55	79.92	766.44	740.63	15.85	OSF1.50	13660.00	12430.00				MINPT-O-EOU	
	820.68	80.08	766.46	740.60	15.82	OSF1.50	13670.00	12430.00				MinPt-O-ADP	
	829.15	90.07	768.28	739.07	14.16	OSF1.50	14140.00	12430.00				MinPt-CtCt	
	823.23	104.43	752.78	718.81	12.08	OSF1.50	14750.00	12430.00				MinPt-CtCt	
	823.71	105.99	752.22	717.73	11.90	OSF1.50	14820.00	12430.00				MINPT-O-EOU	
	824.43	106.87	752.35	717.55	11.81	OSF1.50	14860.00	12430.00				MinPt-O-ADP	
	803.52	144.98	706.03	658.54	8.43	OSF1.50	16290.00	12430.00				MinPt-CtCt	
	805.90	151.15	704.30	654.75	8.11	OSF1.50	16520.00	12430.00				MINPT-O-EOU	
	809.54	155.46	705.08	654.08	7.91	OSF1.50	16680.00	12430.00				MinPt-O-ADP	
	822.00	173.05	705.89	649.04	7.21	OSF1.50	17280.00	12430.00				MinPt-CtCt	
	824.73	179.91	703.95	644.82	6.95	OSF1.50	17530.00	12430.00				MINPT-O-EOU	
	826.03	181.45	704.23	644.58	6.90	OSF1.50	17590.00	12430.00				MinPt-O-ADP	
	807.81	215.09	663.38	592.52	5.68	OSF1.50	18740.00	12430.00				MinPt-CtCt	
	808.00	216.27	662.99	591.73	5.65	OSF1.50	18790.00	12430.00				MINPT-O-EOU	
	808.41	216.73	663.09	591.68	5.64	OSF1.50	18810.00	12430.00				MinPt-O-ADP	
	831.04	234.45	673.91	596.59	5.36	OSF1.50	19390.00	12430.00				MinPts	
	831.13	234.52	673.95	596.61	5.36	OSF1.50	19400.00	12430.00				MinPt-O-SF	
	2857.00	99.13	2790.08	2757.87	44.31	OSF1.50	22120.62	12430.00				TD	

Schlumberger

Cimarex Vaca Draw 20-17 Federal #13H Rev2 RM 29Mar18 Proposal
Geodetic Report
(Non-Def Plan)

CIMAREX

Report Date:	March 29, 2018 - 11:05 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	359.633 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Vaca Draw 20-17 Federal #13H / Cimarex Vaca Draw 20-17 Federal #13H	**TVD Reference Datum:**	RKB
Well:	Cimarex Vaca Draw 20-17 Federal #13H	**TVD Reference Elevation:**	3447.000 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3423.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.773 °
Survey Name:	Cimarex Vaca Draw 20-17 Federal #13H Rev2 RM 29Mar18	**Total Gravity Field Strength:**	998.4294mgn (9.80665 Based)
Survey Date:	March 09, 2018	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	103.432 ° / 10369.275 ft / 6.281 / 0.834	**Total Magnetic Field Strength:**	47902.380 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.777 °
Location Lat / Long:	N 32° 6' 35.06113", W 103° 36' 1.76446"	**Declination Date:**	March 29, 2018
Location Grid N/E Y/X:	N 404430.850 ftUS, E 768241.870 ftUS	**Magnetic Declination Model:**	HDGM 2018
CRS Grid Convergence Angle:	0.3896 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99996806	**Grid Convergence Used:**	0.3896 °
Version / Patch:	2.10.706.0	**Total Corr Mag North->Grid North:**	6.3831 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [330' FSL, 730' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	100.00	0.00	89.50	100.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	200.00	0.00	89.50	200.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	300.00	0.00	89.50	300.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	400.00	0.00	89.50	400.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	500.00	0.00	89.50	500.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	600.00	0.00	89.50	600.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	700.00	0.00	89.50	700.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	800.00	0.00	89.50	800.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	900.00	0.00	89.50	900.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
Rustler	*984.00*	*0.00*	*89.50*	*984.00*	*0.00*	*0.00*	*0.00*	*0.00*	*404430.85*	*768241.87*	*N 32 6 35.06*	*W 103 36 1.76*
	1000.00	0.00	89.50	1000.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	1100.00	0.00	89.50	1100.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
Top of Salt	*1128.00*	*0.00*	*89.50*	*1128.00*	*0.00*	*0.00*	*0.00*	*0.00*	*404430.85*	*768241.87*	*N 32 6 35.06*	*W 103 36 1.76*
	1200.00	0.00	89.50	1200.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	1300.00	0.00	89.50	1300.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	1400.00	0.00	89.50	1400.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
Nudge 2°/100' DLS	1500.00	0.00	89.50	1500.00	0.00	0.00	0.00	0.00	404430.85	768241.87	N 32 6 35.06	W 103 36 1.76
	1600.00	2.00	89.50	1599.98	0.00	0.02	1.75	2.00	404430.87	768243.62	N 32 6 35.06	W 103 36 1.74
	1700.00	4.00	89.50	1699.84	0.02	0.06	6.98	2.00	404430.91	768248.85	N 32 6 35.06	W 103 36 1.68
	1800.00	6.00	89.50	1799.45	0.04	0.14	15.69	2.00	404430.99	768257.56	N 32 6 35.06	W 103 36 1.58
Hold Nudge	1835.81	6.72	89.50	1835.04	0.05	0.17	19.66	2.00	404431.02	768261.53	N 32 6 35.06	W 103 36 1.54
	1900.00	6.72	89.50	1898.79	0.06	0.24	27.17	0.00	404431.09	768269.03	N 32 6 35.06	W 103 36 1.45
	2000.00	6.72	89.50	1998.10	0.09	0.34	38.86	0.00	404431.19	768280.73	N 32 6 35.06	W 103 36 1.31
	2100.00	6.72	89.50	2097.42	0.12	0.44	50.55	0.00	404431.29	768292.42	N 32 6 35.06	W 103 36 1.18

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2200.00	6.72	89.50	2196.73	0.14	0.54	62.25	0.00	404431.39	768304.12	N 32 6 35.06	W 103 36 1.04
	2300.00	6.72	89.50	2296.05	0.17	0.65	73.94	0.00	404431.50	768315.81	N 32 6 35.06	W 103 36 0.90
	2400.00	6.72	89.50	2395.36	0.20	0.75	85.64	0.00	404431.60	768327.51	N 32 6 35.06	W 103 36 0.77
	2500.00	6.72	89.50	2494.67	0.23	0.85	97.33	0.00	404431.70	768339.20	N 32 6 35.06	W 103 36 0.63
	2600.00	6.72	89.50	2593.99	0.25	0.95	109.03	0.00	404431.80	768350.89	N 32 6 35.06	W 103 36 0.50
	2700.00	6.72	89.50	2693.30	0.28	1.05	120.72	0.00	404431.90	768362.59	N 32 6 35.06	W 103 36 0.36
	2800.00	6.72	89.50	2792.62	0.31	1.16	132.42	0.00	404432.01	768374.28	N 32 6 35.06	W 103 36 0.22
	2900.00	6.72	89.50	2891.93	0.33	1.26	144.11	0.00	404432.11	768385.98	N 32 6 35.06	W 103 36 0.09
	3000.00	6.72	89.50	2991.24	0.36	1.36	155.81	0.00	404432.21	768397.67	N 32 6 35.06	W 103 35 59.95
	3100.00	6.72	89.50	3090.56	0.39	1.46	167.50	0.00	404432.31	768409.36	N 32 6 35.06	W 103 35 59.82
	3200.00	6.72	89.50	3189.87	0.42	1.56	179.19	0.00	404432.41	768421.06	N 32 6 35.06	W 103 35 59.68
	3300.00	6.72	89.50	3289.18	0.44	1.67	190.89	0.00	404432.52	768432.75	N 32 6 35.06	W 103 35 59.55
	3400.00	6.72	89.50	3388.50	0.47	1.77	202.58	0.00	404432.62	768444.45	N 32 6 35.06	W 103 35 59.41
	3500.00	6.72	89.50	3487.81	0.50	1.87	214.28	0.00	404432.72	768456.14	N 32 6 35.07	W 103 35 59.27
	3600.00	6.72	89.50	3587.13	0.52	1.97	225.97	0.00	404432.82	768467.83	N 32 6 35.07	W 103 35 59.14
	3700.00	6.72	89.50	3686.44	0.55	2.07	237.67	0.00	404432.92	768479.53	N 32 6 35.07	W 103 35 59.00
	3800.00	6.72	89.50	3785.75	0.58	2.18	249.36	0.00	404433.03	768491.22	N 32 6 35.07	W 103 35 58.87
	3900.00	6.72	89.50	3885.07	0.61	2.28	261.06	0.00	404433.13	768502.92	N 32 6 35.07	W 103 35 58.73
	4000.00	6.72	89.50	3984.38	0.63	2.38	272.75	0.00	404433.23	768514.61	N 32 6 35.07	W 103 35 58.59
	4100.00	6.72	89.50	4083.69	0.66	2.48	284.45	0.00	404433.33	768526.31	N 32 6 35.07	W 103 35 58.46
	4200.00	6.72	89.50	4183.01	0.69	2.58	296.14	0.00	404433.43	768538.00	N 32 6 35.07	W 103 35 58.32
	4300.00	6.72	89.50	4282.32	0.71	2.69	307.83	0.00	404433.54	768549.69	N 32 6 35.07	W 103 35 58.19
	4400.00	6.72	89.50	4381.64	0.74	2.79	319.53	0.00	404433.64	768561.39	N 32 6 35.07	W 103 35 58.05
	4500.00	6.72	89.50	4480.95	0.77	2.89	331.22	0.00	404433.74	768573.08	N 32 6 35.07	W 103 35 57.91
	4600.00	6.72	89.50	4580.26	0.80	2.99	342.92	0.00	404433.84	768584.78	N 32 6 35.07	W 103 35 57.78
	4700.00	6.72	89.50	4679.58	0.82	3.09	354.61	0.00	404433.94	768596.47	N 32 6 35.07	W 103 35 57.64
Base of Salt	*4707.47*	*6.72*	*89.50*	*4687.00*	*0.83*	*3.10*	*355.49*	*0.00*	*404433.95*	*768597.34*	*N 32 6 35.07*	*W 103 35 57.63*
	4800.00	6.72	89.50	4778.89	0.85	3.20	366.31	0.00	404434.05	768608.16	N 32 6 35.07	W 103 35 57.51
	4900.00	6.72	89.50	4878.20	0.88	3.30	378.00	0.00	404434.15	768619.86	N 32 6 35.07	W 103 35 57.37
Bell Canyon	*4978.33*	*6.72*	*89.50*	*4956.00*	*0.90*	*3.38*	*387.16*	*0.00*	*404434.23*	*768629.02*	*N 32 6 35.07*	*W 103 35 57.26*
	5000.00	6.72	89.50	4977.52	0.90	3.40	389.70	0.00	404434.25	768631.55	N 32 6 35.07	W 103 35 57.23
	5100.00	6.72	89.50	5076.83	0.93	3.50	401.39	0.00	404434.35	768643.25	N 32 6 35.07	W 103 35 57.10
	5200.00	6.72	89.50	5176.15	0.96	3.60	413.08	0.00	404434.45	768654.94	N 32 6 35.07	W 103 35 56.96
	5300.00	6.72	89.50	5275.46	0.99	3.71	424.78	0.00	404434.56	768666.64	N 32 6 35.07	W 103 35 56.83
	5400.00	6.72	89.50	5374.77	1.01	3.81	436.47	0.00	404434.66	768678.33	N 32 6 35.07	W 103 35 56.69
	5500.00	6.72	89.50	5474.09	1.04	3.91	448.17	0.00	404434.76	768690.02	N 32 6 35.07	W 103 35 56.55
Drop to Vertical 2°/100' DLS	5526.09	6.72	89.50	5500.00	1.05	3.94	451.22	0.00	404434.79	768693.07	N 32 6 35.07	W 103 35 56.52
	5600.00	5.24	89.50	5573.50	1.07	4.00	458.92	2.00	404434.85	768700.77	N 32 6 35.07	W 103 35 56.43
	5700.00	3.24	89.50	5673.23	1.08	4.07	466.30	2.00	404434.92	768708.16	N 32 6 35.07	W 103 35 56.34
	5800.00	1.24	89.50	5773.14	1.09	4.10	470.21	2.00	404434.95	768712.06	N 32 6 35.07	W 103 35 56.30
Hold Vertical 2°/100' DLS	5861.90	0.00	89.50	5835.04	1.09	4.11	470.88	2.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	5900.00	0.00	89.50	5873.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6000.00	0.00	89.50	5973.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
Cherry Canyon	*6000.86*	*0.00*	*89.50*	*5974.00*	*1.09*	*4.11*	*470.88*	*0.00*	*404434.96*	*768712.73*	*N 32 6 35.07*	*W 103 35 56.29*
	6100.00	0.00	89.50	6073.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6200.00	0.00	89.50	6173.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6300.00	0.00	89.50	6273.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6400.00	0.00	89.50	6373.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6500.00	0.00	89.50	6473.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6600.00	0.00	89.50	6573.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6700.00	0.00	89.50	6673.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6800.00	0.00	89.50	6773.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	6900.00	0.00	89.50	6873.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7000.00	0.00	89.50	6973.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7100.00	0.00	89.50	7073.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7200.00	0.00	89.50	7173.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7300.00	0.00	89.50	7273.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7400.00	0.00	89.50	7373.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7500.00	0.00	89.50	7473.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
Brushy Canyon	*7510.86*	*0.00*	*89.50*	*7484.00*	*1.09*	*4.11*	*470.88*	*0.00*	*404434.96*	*768712.73*	*N 32 6 35.07*	*W 103 35 56.29*
	7600.00	0.00	89.50	7573.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7700.00	0.00	89.50	7673.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7800.00	0.00	89.50	7773.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	7900.00	0.00	89.50	7873.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8000.00	0.00	89.50	7973.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8100.00	0.00	89.50	8073.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8200.00	0.00	89.50	8173.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8300.00	0.00	89.50	8273.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8400.00	0.00	89.50	8373.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8500.00	0.00	89.50	8473.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8600.00	0.00	89.50	8573.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8700.00	0.00	89.50	8673.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8800.00	0.00	89.50	8773.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	8900.00	0.00	89.50	8873.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9000.00	0.00	89.50	8973.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
Bone Spring	*9066.86*	*0.00*	*89.50*	*9040.00*	*1.09*	*4.11*	*470.88*	*0.00*	*404434.96*	*768712.73*	*N 32 6 35.07*	*W 103 35 56.29*
	9100.00	0.00	89.50	9073.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9200.00	0.00	89.50	9173.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9300.00	0.00	89.50	9273.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9400.00	0.00	89.50	9373.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9500.00	0.00	89.50	9473.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9600.00	0.00	89.50	9573.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9700.00	0.00	89.50	9673.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9800.00	0.00	89.50	9773.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	9900.00	0.00	89.50	9873.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10000.00	0.00	89.50	9973.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10100.00	0.00	89.50	10073.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10200.00	0.00	89.50	10173.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10300.00	0.00	89.50	10273.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10400.00	0.00	89.50	10373.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10500.00	0.00	89.50	10473.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
2nd Bone Spring Sand	*10599.86*	*0.00*	*89.50*	*10573.00*	*1.09*	*4.11*	*470.88*	*0.00*	*404434.96*	*768712.73*	*N 32 6 35.07*	*W 103 35 56.29*
	10600.00	0.00	89.50	10573.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10700.00	0.00	89.50	10673.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10800.00	0.00	89.50	10773.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	10900.00	0.00	89.50	10873.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11000.00	0.00	89.50	10973.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11100.00	0.00	89.50	11073.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11200.00	0.00	89.50	11173.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11300.00	0.00	89.50	11273.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11400.00	0.00	89.50	11373.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11500.00	0.00	89.50	11473.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11600.00	0.00	89.50	11573.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11700.00	0.00	89.50	11673.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
3rd Bone Spring Sand	*11752.86*	*0.00*	*89.50*	*11726.00*	*1.09*	*4.11*	*470.88*	*0.00*	*404434.96*	*768712.73*	*N 32 6 35.07*	*W 103 35 56.29*
	11800.00	0.00	89.50	11773.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	11900.00	0.00	89.50	11873.14	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
KOP - Build 12°/100' DLS	11946.86	0.00	89.50	11920.00	1.09	4.11	470.88	0.00	404434.96	768712.73	N 32 6 35.07	W 103 35 56.29
	12000.00	6.38	359.63	11973.03	4.05	7.06	470.86	12.00	404437.91	768712.71	N 32 6 35.10	W 103 35 56.29
	12100.00	18.38	359.63	12070.53	25.44	28.46	470.72	12.00	404459.31	768712.58	N 32 6 35.31	W 103 35 56.29
	12200.00	30.38	359.63	12161.45	66.64	69.66	470.46	12.00	404500.50	768712.31	N 32 6 35.72	W 103 35 56.29
Wolfcamp	*12241.14*	*35.31*	*359.63*	*12196.00*	*88.95*	*91.96*	*470.32*	*12.00*	*404522.81*	*768712.17*	*N 32 6 35.94*	*W 103 35 56.29*
	12300.00	42.38	359.63	12241.81	125.84	128.86	470.08	12.00	404559.70	768711.93	N 32 6 36.30	W 103 35 56.29

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	12400.00	54.38	359.63	12308.11	200.46	203.47	469.60	12.00	404634.32	768711.46	N 32 6 37.04	W 103 35 56.29
	12500.00	66.38	359.63	12357.45	287.23	290.24	469.05	12.00	404721.08	768710.90	N 32 6 37.90	W 103 35 56.29
Build 4°/100' DLS	12571.86	75.00	359.63	12381.19	354.98	357.99	468.62	12.00	404788.83	768710.47	N 32 6 38.57	W 103 35 56.29
	12600.00	76.13	359.63	12388.21	382.23	385.24	468.44	4.00	404816.08	768710.30	N 32 6 38.84	W 103 35 56.29
	12700.00	80.13	359.63	12408.78	480.08	483.08	467.82	4.00	404913.92	768709.67	N 32 6 39.81	W 103 35 56.29
	12800.00	84.13	359.63	12422.48	579.11	582.12	467.18	4.00	405012.95	768709.04	N 32 6 40.79	W 103 35 56.29
	12900.00	88.13	359.63	12429.23	678.86	681.87	466.54	4.00	405112.69	768708.40	N 32 6 41.78	W 103 35 56.29
Landing Point	12946.86	90.00	359.63	12430.00	725.71	728.71	466.25	4.00	405159.54	768708.10	N 32 6 42.24	W 103 35 56.29
	13000.00	90.00	359.63	12430.00	778.85	781.86	465.91	0.00	405212.68	768707.76	N 32 6 42.77	W 103 35 56.29
	13100.00	90.00	359.63	12430.00	878.85	881.85	465.27	0.00	405312.67	768707.12	N 32 6 43.76	W 103 35 56.29
	13200.00	90.00	359.63	12430.00	978.85	981.85	464.63	0.00	405412.67	768706.48	N 32 6 44.75	W 103 35 56.29
	13300.00	90.00	359.63	12430.00	1078.85	1081.85	463.99	0.00	405512.66	768705.84	N 32 6 45.73	W 103 35 56.28
	13400.00	90.00	359.63	12430.00	1178.85	1181.85	463.35	0.00	405612.66	768705.20	N 32 6 46.72	W 103 35 56.28
	13500.00	90.00	359.63	12430.00	1278.85	1281.84	462.71	0.00	405712.65	768704.56	N 32 6 47.71	W 103 35 56.28
	13600.00	90.00	359.63	12430.00	1378.85	1381.84	462.07	0.00	405812.65	768703.92	N 32 6 48.70	W 103 35 56.28
	13700.00	90.00	359.63	12430.00	1478.85	1481.84	461.43	0.00	405912.64	768703.28	N 32 6 49.69	W 103 35 56.28
	13800.00	90.00	359.63	12430.00	1578.85	1581.84	460.79	0.00	406012.64	768702.65	N 32 6 50.68	W 103 35 56.28
	13900.00	90.00	359.63	12430.00	1678.85	1681.84	460.15	0.00	406112.63	768702.01	N 32 6 51.67	W 103 35 56.28
	14000.00	90.00	359.63	12430.00	1778.85	1781.83	459.51	0.00	406212.62	768701.37	N 32 6 52.66	W 103 35 56.28
	14100.00	90.00	359.63	12430.00	1878.85	1881.83	458.87	0.00	406312.62	768700.73	N 32 6 53.65	W 103 35 56.28
	14200.00	90.00	359.63	12430.00	1978.85	1981.83	458.23	0.00	406412.61	768700.09	N 32 6 54.64	W 103 35 56.28
	14300.00	90.00	359.63	12430.00	2078.85	2081.83	457.59	0.00	406512.61	768699.45	N 32 6 55.63	W 103 35 56.28
	14400.00	90.00	359.63	12430.00	2178.85	2181.83	456.95	0.00	406612.60	768698.81	N 32 6 56.62	W 103 35 56.28
	14500.00	90.00	359.63	12430.00	2278.85	2281.82	456.32	0.00	406712.60	768698.17	N 32 6 57.61	W 103 35 56.28
	14600.00	90.00	359.63	12430.00	2378.85	2381.82	455.68	0.00	406812.59	768697.53	N 32 6 58.60	W 103 35 56.28
	14700.00	90.00	359.63	12430.00	2478.85	2481.82	455.04	0.00	406912.59	768696.89	N 32 6 59.59	W 103 35 56.28
	14800.00	90.00	359.63	12430.00	2578.85	2581.82	454.40	0.00	407012.58	768696.25	N 32 7 0.58	W 103 35 56.28
	14900.00	90.00	359.63	12430.00	2678.85	2681.82	453.76	0.00	407112.58	768695.61	N 32 7 1.57	W 103 35 56.28
	15000.00	90.00	359.63	12430.00	2778.85	2781.81	453.12	0.00	407212.57	768694.97	N 32 7 2.56	W 103 35 56.28
	15100.00	90.00	359.63	12430.00	2878.85	2881.81	452.48	0.00	407312.56	768694.33	N 32 7 3.55	W 103 35 56.28
	15200.00	90.00	359.63	12430.00	2978.85	2981.81	451.84	0.00	407412.56	768693.69	N 32 7 4.54	W 103 35 56.28
	15300.00	90.00	359.63	12430.00	3078.85	3081.81	451.20	0.00	407512.55	768693.06	N 32 7 5.53	W 103 35 56.27
	15400.00	90.00	359.63	12430.00	3178.85	3181.81	450.56	0.00	407612.55	768692.42	N 32 7 6.52	W 103 35 56.27
	15500.00	90.00	359.63	12430.00	3278.85	3281.80	449.92	0.00	407712.54	768691.78	N 32 7 7.50	W 103 35 56.27
	15600.00	90.00	359.63	12430.00	3378.85	3381.80	449.28	0.00	407812.54	768691.14	N 32 7 8.49	W 103 35 56.27
	15700.00	90.00	359.63	12430.00	3478.85	3481.80	448.64	0.00	407912.53	768690.50	N 32 7 9.48	W 103 35 56.27
	15800.00	90.00	359.63	12430.00	3578.85	3581.80	448.00	0.00	408012.53	768689.86	N 32 7 10.47	W 103 35 56.27
	15900.00	90.00	359.63	12430.00	3678.85	3681.80	447.36	0.00	408112.52	768689.22	N 32 7 11.46	W 103 35 56.27
	16000.00	90.00	359.63	12430.00	3778.85	3781.79	446.73	0.00	408212.52	768688.58	N 32 7 12.45	W 103 35 56.27
	16100.00	90.00	359.63	12430.00	3878.85	3881.79	446.09	0.00	408312.51	768687.94	N 32 7 13.44	W 103 35 56.27
	16200.00	90.00	359.63	12430.00	3978.85	3981.79	445.45	0.00	408412.50	768687.30	N 32 7 14.43	W 103 35 56.27
	16300.00	90.00	359.63	12430.00	4078.85	4081.79	444.81	0.00	408512.50	768686.66	N 32 7 15.42	W 103 35 56.27
	16400.00	90.00	359.63	12430.00	4178.85	4181.79	444.17	0.00	408612.49	768686.02	N 32 7 16.41	W 103 35 56.27
	16500.00	90.00	359.63	12430.00	4278.85	4281.78	443.53	0.00	408712.49	768685.38	N 32 7 17.40	W 103 35 56.27
	16600.00	90.00	359.63	12430.00	4378.85	4381.78	442.89	0.00	408812.48	768684.74	N 32 7 18.39	W 103 35 56.27
	16700.00	90.00	359.63	12430.00	4478.85	4481.78	442.25	0.00	408912.48	768684.10	N 32 7 19.38	W 103 35 56.27
	16800.00	90.00	359.63	12430.00	4578.85	4581.78	441.61	0.00	409012.47	768683.47	N 32 7 20.37	W 103 35 56.27
	16900.00	90.00	359.63	12430.00	4678.85	4681.78	440.97	0.00	409112.47	768682.83	N 32 7 21.36	W 103 35 56.27
	17000.00	90.00	359.63	12430.00	4778.85	4781.77	440.33	0.00	409212.46	768682.19	N 32 7 22.35	W 103 35 56.27
	17100.00	90.00	359.63	12430.00	4878.85	4881.77	439.69	0.00	409312.46	768681.55	N 32 7 23.34	W 103 35 56.27
	17200.00	90.00	359.63	12430.00	4978.85	4981.77	439.05	0.00	409412.45	768680.91	N 32 7 24.33	W 103 35 56.27
	17300.00	90.00	359.63	12430.00	5078.85	5081.77	438.41	0.00	409512.44	768680.27	N 32 7 25.32	W 103 35 56.26
	17400.00	90.00	359.63	12430.00	5178.85	5181.77	437.77	0.00	409612.44	768679.63	N 32 7 26.31	W 103 35 56.26
	17500.00	90.00	359.63	12430.00	5278.85	5281.76	437.14	0.00	409712.43	768678.99	N 32 7 27.30	W 103 35 56.26
	17600.00	90.00	359.63	12430.00	5378.85	5381.76	436.50	0.00	409812.43	768678.35	N 32 7 28.28	W 103 35 56.26
	17700.00	90.00	359.63	12430.00	5478.85	5481.76	435.86	0.00	409912.42	768677.71	N 32 7 29.27	W 103 35 56.26
	17800.00	90.00	359.63	12430.00	5578.85	5581.76	435.22	0.00	410012.42	768677.07	N 32 7 30.26	W 103 35 56.26
	17900.00	90.00	359.63	12430.00	5678.85	5681.76	434.58	0.00	410112.41	768676.43	N 32 7 31.25	W 103 35 56.26

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	18000.00	90.00	359.63	12430.00	5778.85	5781.75	433.94	0.00	410212.41	768675.79	N 32 7 32.24	W 103 35 56.26
	18100.00	90.00	359.63	12430.00	5878.85	5881.75	433.30	0.00	410312.40	768675.15	N 32 7 33.23	W 103 35 56.26
	18200.00	90.00	359.63	12430.00	5978.85	5981.75	432.66	0.00	410412.40	768674.52	N 32 7 34.22	W 103 35 56.26
	18300.00	90.00	359.63	12430.00	6078.85	6081.75	432.02	0.00	410512.39	768673.88	N 32 7 35.21	W 103 35 56.26
	18400.00	90.00	359.63	12430.00	6178.85	6181.74	431.38	0.00	410612.38	768673.24	N 32 7 36.20	W 103 35 56.26
	18500.00	90.00	359.63	12430.00	6278.85	6281.74	430.74	0.00	410712.38	768672.60	N 32 7 37.19	W 103 35 56.26
	18600.00	90.00	359.63	12430.00	6378.85	6381.74	430.10	0.00	410812.37	768671.96	N 32 7 38.18	W 103 35 56.26
	18700.00	90.00	359.63	12430.00	6478.85	6481.74	429.46	0.00	410912.37	768671.32	N 32 7 39.17	W 103 35 56.26
	18800.00	90.00	359.63	12430.00	6578.85	6581.74	428.82	0.00	411012.36	768670.68	N 32 7 40.16	W 103 35 56.26
	18900.00	90.00	359.63	12430.00	6678.85	6681.73	428.18	0.00	411112.36	768670.04	N 32 7 41.15	W 103 35 56.26
	19000.00	90.00	359.63	12430.00	6778.85	6781.73	427.55	0.00	411212.35	768669.40	N 32 7 42.14	W 103 35 56.26
	19100.00	90.00	359.63	12430.00	6878.85	6881.73	426.91	0.00	411312.35	768668.76	N 32 7 43.13	W 103 35 56.26
	19200.00	90.00	359.63	12430.00	6978.85	6981.73	426.27	0.00	411412.34	768668.12	N 32 7 44.12	W 103 35 56.26
	19300.00	90.00	359.63	12430.00	7078.85	7081.73	425.63	0.00	411512.34	768667.48	N 32 7 45.11	W 103 35 56.26
	19400.00	90.00	359.63	12430.00	7178.85	7181.72	424.99	0.00	411612.33	768666.84	N 32 7 46.10	W 103 35 56.25
	19500.00	90.00	359.63	12430.00	7278.85	7281.72	424.35	0.00	411712.33	768666.20	N 32 7 47.09	W 103 35 56.25
	19600.00	90.00	359.63	12430.00	7378.85	7381.72	423.71	0.00	411812.32	768665.56	N 32 7 48.08	W 103 35 56.25
	19700.00	90.00	359.63	12430.00	7478.85	7481.72	423.07	0.00	411912.31	768664.93	N 32 7 49.06	W 103 35 56.25
	19800.00	90.00	359.63	12430.00	7578.85	7581.72	422.43	0.00	412012.31	768664.29	N 32 7 50.05	W 103 35 56.25
	19900.00	90.00	359.63	12430.00	7678.85	7681.71	421.79	0.00	412112.30	768663.65	N 32 7 51.04	W 103 35 56.25
	20000.00	90.00	359.63	12430.00	7778.85	7781.71	421.15	0.00	412212.30	768663.01	N 32 7 52.03	W 103 35 56.25
	20100.00	90.00	359.63	12430.00	7878.85	7881.71	420.51	0.00	412312.29	768662.37	N 32 7 53.02	W 103 35 56.25
	20200.00	90.00	359.63	12430.00	7978.85	7981.71	419.87	0.00	412412.29	768661.73	N 32 7 54.01	W 103 35 56.25
	20300.00	90.00	359.63	12430.00	8078.85	8081.71	419.23	0.00	412512.28	768661.09	N 32 7 55.00	W 103 35 56.25
	20400.00	90.00	359.63	12430.00	8178.85	8181.70	418.59	0.00	412612.28	768660.45	N 32 7 55.99	W 103 35 56.25
	20500.00	90.00	359.63	12430.00	8278.85	8281.70	417.96	0.00	412712.27	768659.81	N 32 7 56.98	W 103 35 56.25
	20600.00	90.00	359.63	12430.00	8378.85	8381.70	417.32	0.00	412812.27	768659.17	N 32 7 57.97	W 103 35 56.25
	20700.00	90.00	359.63	12430.00	8478.85	8481.70	416.68	0.00	412912.26	768658.53	N 32 7 58.96	W 103 35 56.25
	20800.00	90.00	359.63	12430.00	8578.85	8581.70	416.04	0.00	413012.25	768657.89	N 32 7 59.95	W 103 35 56.25
	20900.00	90.00	359.63	12430.00	8678.85	8681.69	415.40	0.00	413112.25	768657.25	N 32 8 0.94	W 103 35 56.25
	21000.00	90.00	359.63	12430.00	8778.85	8781.69	414.76	0.00	413212.24	768656.61	N 32 8 1.93	W 103 35 56.25
	21100.00	90.00	359.63	12430.00	8878.85	8881.69	414.12	0.00	413312.24	768655.97	N 32 8 2.92	W 103 35 56.25
	21200.00	90.00	359.63	12430.00	8978.85	8981.69	413.48	0.00	413412.23	768655.34	N 32 8 3.91	W 103 35 56.25
	21300.00	90.00	359.63	12430.00	9078.85	9081.69	412.84	0.00	413512.23	768654.70	N 32 8 4.90	W 103 35 56.25
	21400.00	90.00	359.63	12430.00	9178.85	9181.68	412.20	0.00	413612.22	768654.06	N 32 8 5.89	W 103 35 56.24
	21500.00	90.00	359.63	12430.00	9278.85	9281.68	411.56	0.00	413712.22	768653.42	N 32 8 6.88	W 103 35 56.24
	21600.00	90.00	359.63	12430.00	9378.85	9381.68	410.92	0.00	413812.21	768652.78	N 32 8 7.87	W 103 35 56.24
	21700.00	90.00	359.63	12430.00	9478.85	9481.68	410.28	0.00	413912.21	768652.14	N 32 8 8.86	W 103 35 56.24
	21800.00	90.00	359.63	12430.00	9578.85	9581.68	409.64	0.00	414012.20	768651.50	N 32 8 9.84	W 103 35 56.24
	21900.00	90.00	359.63	12430.00	9678.85	9681.67	409.00	0.00	414112.19	768650.86	N 32 8 10.83	W 103 35 56.24
	22000.00	90.00	359.63	12430.00	9778.85	9781.67	408.36	0.00	414212.19	768650.22	N 32 8 11.82	W 103 35 56.24
	22100.00	90.00	359.63	12430.00	9878.85	9881.67	407.73	0.00	414312.18	768649.58	N 32 8 12.81	W 103 35 56.24
Cimarex Vaca Draw 20-17 Federal #13H - PBHL [330' FNL, 1202' FWL]	22120.62	90.00	359.63	12430.00	9899.47	9902.29	407.59	0.00	414332.80	768649.45	N 32 8 13.02	W 103 35 56.24

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	24.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Vaca Draw 20-17 Federal #13H Rev2 RM 29Mar18
	1	24.000	22120.617	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Vaca Draw 20-17 Federal #13H Rev2

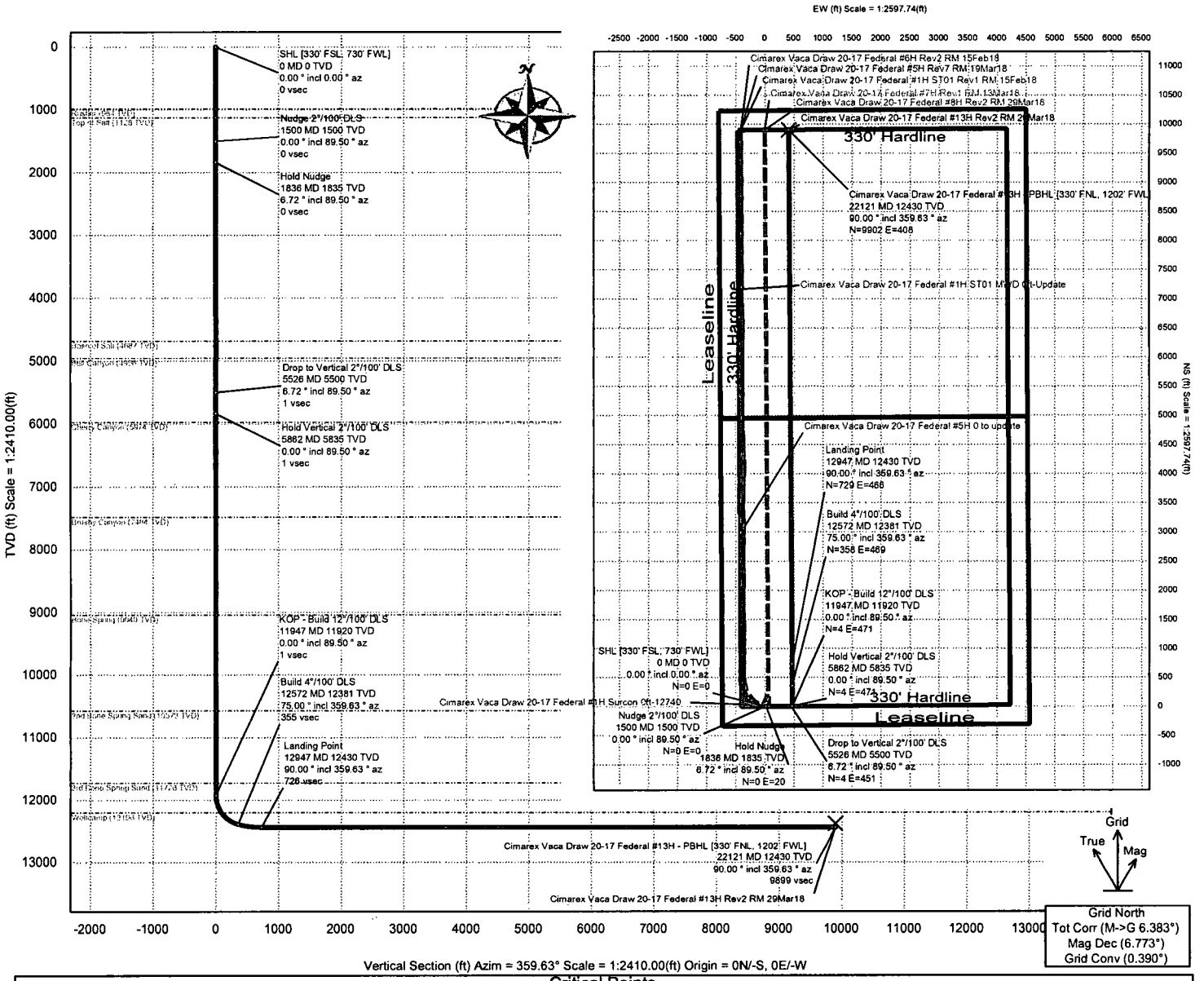
Schlumberger

Cimarex Rev 2

CIMAREX

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Vaca Draw 20-17 Federal #13H	NM Lea County (NAD 83)	Cimarex Vaca Draw 20-17 Federal #13H

Gravity & Magnetic Parameters					Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDGM 2018	Dip: 59.777°	Date: 29-Mar-2018		Lat: N 32 8 35.08	Northing: 404430.85ftUS	Grid Conv: 0.3896°		Slot: Cimarex Vaca Draw 20-17 Federal #13H	TVD Ref: RKB(3447ft above MSL)			
MagDec: 6.773°	FS: 47902.38nT	Gravity FS: 998.429mgn (9.80665 Based)			Lon: W 103 36 1.76	Easting: 768241.87ftUS	Scale Fact: 0.99996606		Plan: Cimarex Vaca Draw 20-17 Federal #13H Rev2 RM 29Mar18				

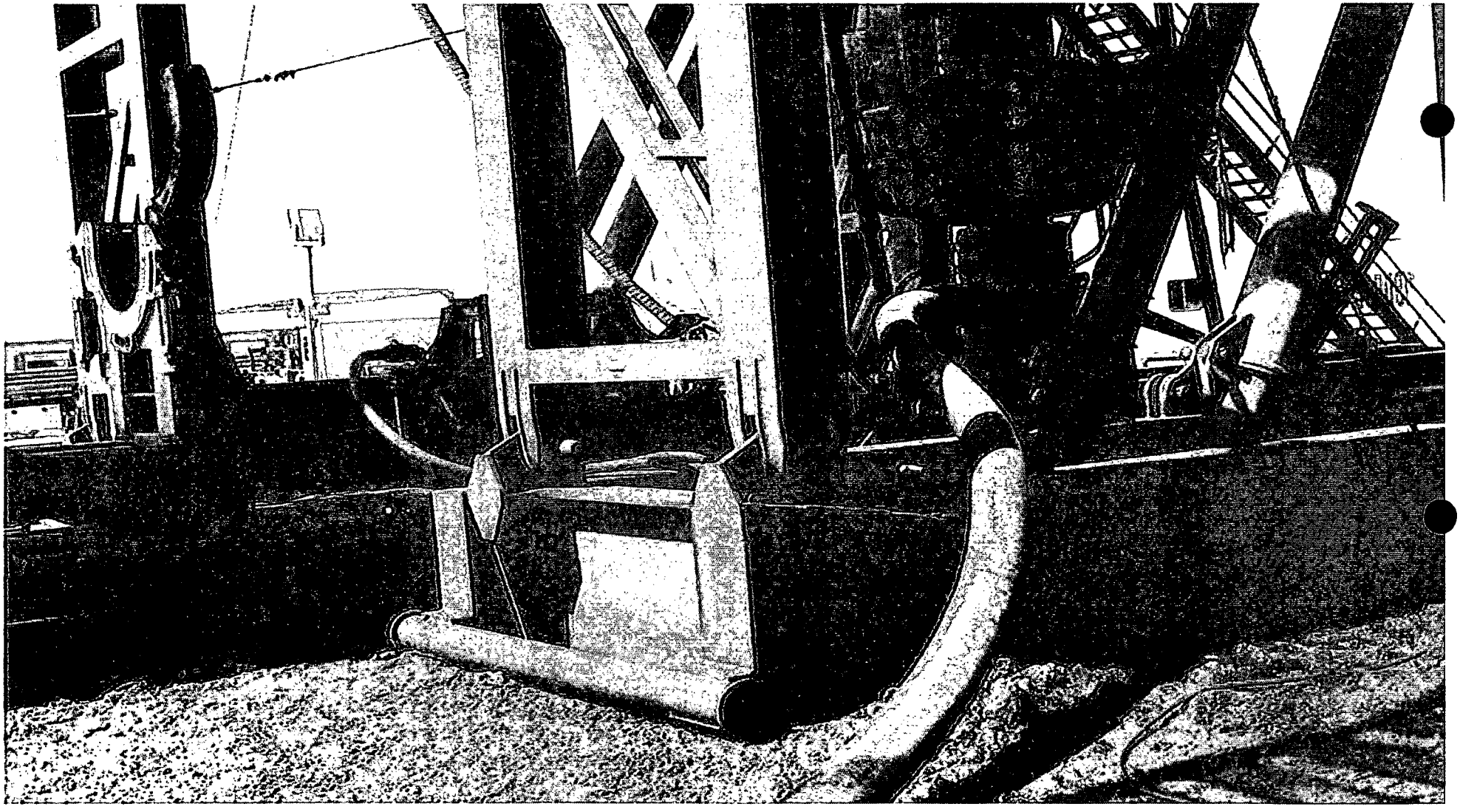


Vertical Section (ft) Azim = 359.63° Scale = 1:2410.00(ft) Origin = 0N/-S, 0E/-W

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL [330' FSL, 730' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	984.00	0.00	89.50	984.00	0.00	0.00	0.00	0.00
Top of Salt	1128.00	0.00	89.50	1128.00	0.00	0.00	0.00	0.00
Nudge 2°/100' DLS	1500.00	0.00	89.50	1500.00	0.00	0.00	0.00	0.00
Hold Nudge	1835.81	6.72	89.50	1835.04	0.05	0.17	19.66	2.00
Base of Salt	4707.47	6.72	89.50	4687.00	0.83	3.10	355.49	0.00
Bell Canyon	4978.33	6.72	89.50	4956.00	0.90	3.38	387.16	0.00
Drop to Vertical 2°/100' DLS	5526.09	6.72	89.50	5500.00	1.05	3.94	451.22	0.00
Hold Vertical 2°/100' DLS	5861.90	0.00	89.50	5835.04	1.09	4.11	470.88	2.00
Cherry Canyon	6000.86	0.00	89.50	5974.00	1.09	4.11	470.88	0.00
Brushy Canyon	7510.86	0.00	89.50	7484.00	1.09	4.11	470.88	0.00
Bone Spring	9066.86	0.00	89.50	9040.00	1.09	4.11	470.88	0.00
2nd Bone Spring Sand	10599.86	0.00	89.50	10573.00	1.09	4.11	470.88	0.00
3rd Bone Spring Sand	11752.86	0.00	89.50	11726.00	1.09	4.11	470.88	0.00
KOP - Build 12°/100' DLS	11946.86	0.00	89.50	11920.00	1.09	4.11	470.88	0.00
Wolfcamp	12241.14	35.31	359.63	12196.00	88.95	91.96	470.32	12.00
Build 4°/100' DLS	12571.86	75.00	359.63	12381.19	354.98	357.99	468.62	12.00
Landing Point	12946.86	90.00	359.63	12430.00	725.71	728.71	466.25	4.00
Cimarex Vaca Draw 20-17 Federal #13H - PBHL [330' FNL, 1202' FWL]	22120.62	90.00	359.63	12430.00	9899.47	9902.29	407.59	0.00

Exhibit F – Co-Flex Hose
Vaca Draw 20-17 Fed 13H
Cimarex Energy Co.
20-25S-33E
Lea County, NM



narex Vaca Draw 20-17 Federal 13H
Surface Use Plan

Upon approval of the Application for Permit to Drill (APD) the following surface use plan of operations will be followed and carried out. The surface use plan outlines the proposed surface disturbance. If any other disturbance is needed after the APD is approved, a BLM sundry notice or right of way application will be submitted for approval prior to any additional surface disturbance.

Existing Roads

- Directions to location - Exhibit A.
- Public access route - Exhibit B.
- Existing access road for the proposed project. Please see Exhibit B and C.
- Cimarex Energy will:
    - Improve and/or maintain existing road(s) condition the same as or better than before the operations began.
    - Provide plans for improvement and /or maintenance of existing roads if requested.
    - Repair or replace damaged or deteriorated structures as needed. Including cattle guards and culverts.
    - Prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or other events.
    - Obtain written BLM approval prior to the application of surfactants, binding agents, or other dust suppression chemicals on the roadways.
- The maximum width of the driving surface will be 18'. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.

New or Reconstructed Access Roads

No new roads are proposed for this project.

Well Radius Map

Please see Exhibit E for wells within one mile or proposed well SHL and BHL.

Proposed or Existing Production Facility

An existing battery will be utilized for the project if the well is productive.

- Vaca Draw 20-17 Federal West CTB & Vaca Draw 20 Federal CTB
    - Battery Pad diagram - Exhibit F
    - Battery will not require an expansion in order to accomodate additional production equipment for the project.
    - Battery Pad location previously approved
        - APD: Vaca Draw 20 Federal 8H. Sundry: Vaca Draw 20-17 Federal 5H.

Gas Pipeline Specifications

- No new gas pipelines are required for this project.

Salt Water Disposal Specifications

- No new SWD pipelines are required for this project.

Power Lines

- No new power line is required for this project.

Well Site Location

- An existing well pad will be used to drill the proposed well.
    - Wells drilled or to be drilled: Vaca Draw 20-17 Federal 1H, 5H, 6H, 7H, 8H, .
- Well pad will not require expansion in order to accommodate additional drilling wells. .
- Well pad previously approved. APD: Vaca Draw 20-17 Federal 5H.

Flowlines and Gas Lift Pipelines

All proposed pipelines will be constructed in a 60' ROW corridor.

- Flowlines
    - Cimarex Energy plans to construct on-lease flowlines to service the well.
    - 6" HP steel for oil, gas, and water production.
    - Length: 683'.
    - MAOP: 1,500 psi; Anticipated working pressure: 200-300 psi.
    - Please see Exhibit M for proposed on lease route.

BEGINNING AT THE INTERSECTION OF JAL HIGHWAY/HIGHWAY 128 AND J-1/ORLA ROAD TO THE SOUTH (LOCATED IN THE SW 1/4 OF SECTION 15, T24S, R32E, N.M.P.M.), PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 10.5 MILES TO THE JUNCTION OF THIS ROAD AND PIPELINE ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY DIRECTION APPROXIMATELY 5.0 TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY, THEN NORTHEASTERLY, THEN NORTHWESTERLY DIRECTION APPROXIMATELY 3.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE WEST; TURN LEFT AND PROCEED IN A WESTERLY DIRECTION APPROXIMATELY 0.6 MILES TO THE BEGINNING OF THE PROPOSED ACCESS ROAD TO THE NORTH; FOLLOW ROAD FLAGS IN A NORTHERLY, THEN WESTERLY DIRECTION APPROXIMATELY 1,103' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM THE INTERSECTION OF JAL HIGHWAY/HIGHWAY 128 AND J-1/ORLA ROAD TO THE SOUTH (LOCATED IN THE SW 1/4 OF SECTION, T24S, R32E, N.M.P.M.), TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 19.6 MILES.

CIMAREX ENERGY CO.

VACA DRAW 20-17 FEDERAL 1H, 5H, 6H, 7H, 8H, 13H, 14H, 15H, 19H, 20H, 21H & 22H
SW 1/4 SW 1/4, SECTION 20, T25S, R33E, N.M.P.M.
LEA COUNTY, NEW MEXICO

SURVEYED BY	C.J., D.J.	01-19-17	
DRAWN BY	T.E.	01-24-17	

ROAD DESCRIPTION

UINTAH ENGINEERING & LAND SURVEYING

UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

Cimarex Vaca Draw 20-17 Federal 1
Surface Use Plan

Water Resources

- A temporary surface fresh water pipeline(s) will be utilized for this project.
- Cimarex plans to lay the fresh water surface pipeline(s) prior to commencement of the stimulation job.
- 10" lay-flat surface pipeline.
- The surface pipeline(s) will follow the road from a frac pit to the well.
- Length: 3,104'.
- Operating pressure: <140 psi.
- Fresh water will be purchased from a 3rd party.
- Please see Exhibit O for proposed route.

Methods of Handling Waste

- Drilling fluids, produced oil, and water from the well during drilling and completion operations will be stored safely and disposed of properly in a NMOCD approved disposal facility.
- Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around well site will be collected for disposal.
- Human waste and grey water will be contained and disposed of properly at a state approved disposal site.
- After drilling and completion operations, trash, chemicals, salts, frac sand and other waste will be removed and disposed of properly at a state approved disposal site.
- The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Waste Minimization Plan

See Gas Capture Plan.

Ancillary Facilities

No camps or airstrips to be constructed.

Interim and Final Reclamation

- Rehabilitation of the location will start in a timely manner after all proposed drilling wells have been drilled from the pad or if drilling operations have ceased as outlined below:
  - No approved or pending drill permits for wells located on the drill pad
  - No drilling activity for 5 years from the drill pad
- Surfacing materials will be removed and returned to a mineral pit or recycled to repair or build roads and well pads.
- Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.
- Exhibit P illustrates the proposed Surface Reclamation plans after cessation of drilling operations as outlined above.
  - The areas of the location not essential to production facilities and operations will be reclaimed and seeded per BLM requirements.
- Operator will amend the surface reclamation plan if well is a dry hole and/or a single well pad.

Surface Ownership

- The wellsite is on surface owned by Bureau of Land Management.
- A copy of Surface Use Agreement has been given to the surface owner.
- The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.

Cultural Resource Survey - Archeology

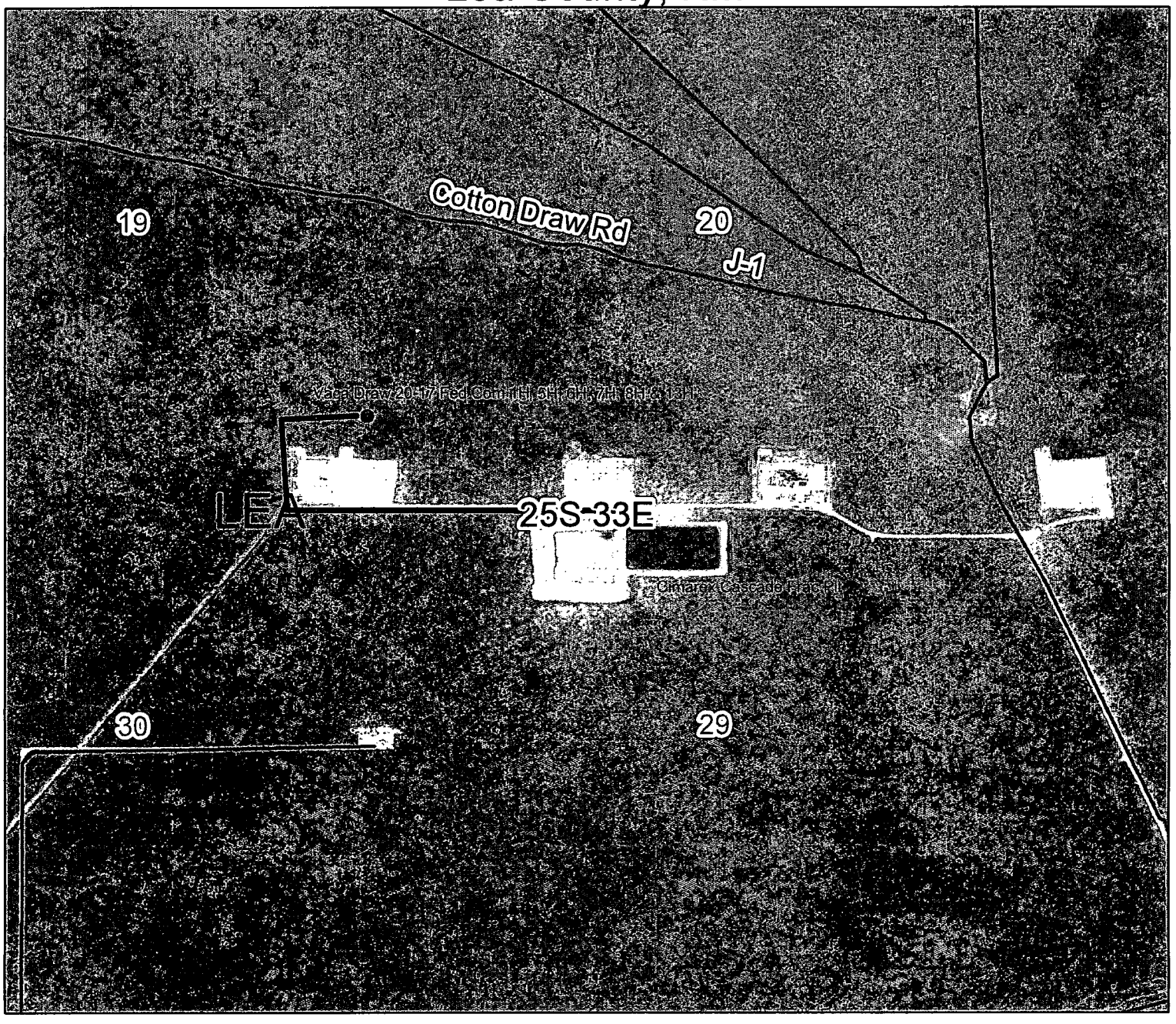
- Cultural Resources Survey will be conducted for the entire project as proposed in the APD and submitted to the BLM for review and approval.

On Site Notes and Information

Onsite Date: 1/8/2016
BLM Personnel on site: Jeff Robertson
Cimarex Energy personnel on site: Barry Hunt
Pertinent information from onsite:

Exhibit O

Vaca Draw 20-17 #1H, 5H, 6H, 7H, 8H & 13H to Cascade Frac Pit - Temp. Fresh Water Line Route Lea County, NM



— Water transfer line length = 3104'

N
W E
S

0 0.125 0.25 0.5 0.75 1 Miles

CIMAREX