OKLAHOMA CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION
P.O. BOX 52000
OKLAHOMA CITY, OK 73152-2000
(Rule 165:10-3-1)

API NUMBER: 017 25364

Approval Date: 01/15/2019
Expiration Date: 07/15/2020

Horizontal Hole Oil & Gas
Multi Unit

PERMIT TO DRILL

WELL LOCATION: Sec: 19 Twp: 13N Rge: 8W County: CANADIAN

SPOT LOCATION: SW SW SE SW FEET FROM QUARTER: FROM **SOUTH** FROM **WEST**
SECTION LINES: **320** **1410**

Lease Name: LEOTA **Well No: 2H-1918X** **Well will be 320 feet from nearest unit or lease boundary.**

Operator Name: **CIMAREX ENERGY CO** Telephone: 9185851100 OTC/OCC Number: 21194 0

CIMAREX ENERGY CO
202 S CHEYENNE AVE STE 1000
TULSA, OK 74103-3001

LEOTA HARMAN REV. TRUST C/O DAVID HARMAN
5600 NORTH BRANDLEY ROAD
CALUMET OK 73014

Formation(s) (Permit Valid for Listed Formations Only):

	Name	Depth		Name	Depth
1	WOODFORD	11500	6		
2			7		
3			8		
4			9		
5			10		

Spacing Orders: 183538, 210676, 188458, 687091
Location Exception Orders: 686865, 686879
Increased Density Orders: 686386, 686385

Pending CD Numbers:
Special Orders:

Total Depth: 21561 Ground Elevation: 1384 **Surface Casing: 1500** Depth to base of Treatable Water-Bearing FM: 290

Under Federal Jurisdiction: No
Fresh Water Supply Well Drilled: No
Surface Water used to Drill: Yes

PIT 1 INFORMATION

Type of Pit System: CLOSED Closed System Means Steel Pits
Type of Mud System: WATER BASED
Chlorides Max: 10000 Average: 5000
Is depth to top of ground water greater than 10ft below base of pit? Y
Within 1 mile of municipal water well? N
Wellhead Protection Area? N
Pit **is not** located in a Hydrologically Sensitive Area.
Category of Pit: C
Liner not required for Category: C
Pit Location is NON HSA
Pit Location Formation: DOG CREEK

Approved Method for disposal of Drilling Fluids:

D. One time land application -- (REQUIRES PERMIT) PERMIT NO: 18-35545
H. CLOSED SYSTEM=STEEL PITS PER OPERATOR REQUEST

This permit does not address the right of entry or settlement of surface damages.
The duration of this permit is SIX MONTHS, except as otherwise provided by Rule 165: 10-3-1.
Rule 165: 10-3-4 (c) (7) (e) - The Operator shall give 24 Hours notice by telephone to the appropriate District Office of the Conservation Division as to when Surface Casing will be run.

HORIZONTAL HOLE 1

Sec 18 Twp 13N Rge 8W County CANADIAN

Spot Location of End Point: N2 N2 NW NW

Feet From: NORTH 1/4 Section Line: 150

Feet From: WEST 1/4 Section Line: 660

Depth of Deviation: 11200

Radius of Turn: 477

Direction: 350

Total Length: 9612

Measured Total Depth: 21561

True Vertical Depth: 11628

End Point Location from Lease,
Unit, or Property Line: 150

Notes:

Category	Description
DEEP SURFACE CASING	11/21/2018 - G71 - APPROVED; NOTIFY OCC FIELD INSPECTOR IMMEDIATELY FOR ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON CONDUCTOR OR SURFACE CASING
EXCEPTION TO RULE - 686879	1/10/2019 - G75 - (I.O.) 19 & 18-13N-8W X165:10-3-28(C)(2)(B) WDFD (LEOTA 2H-1918X) MAY BE CLOSER THAN 600' TO EXISTING/PROPOSED WELL CIMAREX ENERGY CO. 11-19-2018
HYDRAULIC FRACTURING	11/21/2018 - G71 - OCC 165:10-3-10 REQUIRES: 1) PRIOR TO COMMENCEMENT OF HYDRAULIC FRACTURING OPERATIONS FOR HORIZONTAL WELLS, NOTICE GIVEN FIVE BUSINESS DAYS IN ADVANCE TO OFFSET OPERATORS WITH WELLS COMPLETED IN THE SAME COMMON SOURCE OF SUPPLY WITHIN 1/2 MILE; 2) WITH NOTICE ALSO GIVEN 48 HOURS IN ADVANCE OF HYDRAULIC FRACTURING ALL WELLS TO BOTH THE OCC CENTRAL OFFICE AND LOCAL DISTRICT OFFICES, USING THE "FRAC NOTICE FORM" FOUND AT THE FOLLOWING LINK: OCCEWEB.COM/OG/OGFORMS.HTML; AND, 3) THE CHEMICAL DISCLOSURE OF HYDRAULIC FRACTURING INGREDIENTS FOR ALL WELLS TO BE REPORTED TO FRACFOCUS WITHIN 60 DAYS AFTER THE CONCLUSION THE HYDRAULIC FRACTURING OPERATIONS, USING THE FOLLOWING LINK: FRACFOCUS.ORG
INCREASED DENSITY - 686385	1/10/2019 - G75 - 18-13N-8W X210676 WDFD ** 11 WELLS CIMAREX ENERGY CO. 11-8-2018 ** S/B X183538/210676 WDFD; NUNC PRO TUNC HAS BEEN PREPARED BY ATTORNEY FOR OPERATOR AND A COPY REVIEWED BY OCC
INCREASED DENSITY - 686386	1/10/2019 - G75 - 19-13N-8W X188458 WDFD 11 WELLS CIMAREX ENERGY CO. 11-8-2018
LOCATION EXCEPTION - 686865	1/10/2019 - G75 - (I.O.) 19 & 18-13N-8W X188458 WDFD 19-13N-8W X210676 WDFD 18-13N-8W ** COMPL. INT. (19-13N-8W) NCT 150' FSL, NCT 0' FNL, NCT 580' FWL COMPL. INT. (18-13N-8W) NCT 0' FSL, NCT 150' FNL, NCT 580' FWL CIMAREX ENERGY CO. 11-19-2018 ** S/B X183538/210676 WDFD 18-13N-8W; TO BE CORRECTED AT HEARING FOR FINAL ORDER PER ATTORNEY FOR OPERATOR

This permit does not address the right of entry or settlement of surface damages.
The duration of this permit is SIX MONTHS, except as otherwise provided by Rule 165: 10-3-1.
Rule 165: 10-3-4 (c) (7) (e) - The Operator shall give 24 Hours notice by telephone to the appropriate District Office of the Conservation Division as to when Surface Casing will be run.

Category	Description
SPACING - 183538	1/10/2019 - G75 - (640) 18-13N-8W EXT OTHERS EST WDFD, OTHERS
SPACING - 188458	1/10/2019 - G75 - (640) 19-13N-8W EXT 183538 WDFD, OTHER EXT OTHERS EST OTHER
SPACING - 210676	1/10/2019 - G75 - NPT 183538 TO ADD VIOL & SMPS 20-13N-8W
SPACING - 687091	1/10/2019 - G75 - (I.O.) 19 & 18-13N-8W EST MULTIUNIT HORIZONTAL WELL X188458 WDFD 19-13N-8W X210676 WDFD 18-13N-8W ** 50% 19-13N-8W 50% 18-13N-8W CIMAREX ENERGY CO. 11-26-2018 ** S/B X183538/210676 WDFD 18-13N-8W; TO BE CORRECTED AT HEARING FOR FINAL ORDER PER ATTORNEY FOR OPERATOR

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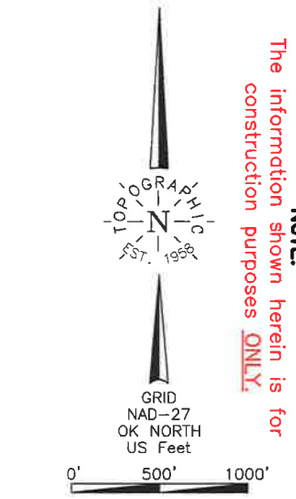
TOPOGRAPHIC LAND SURVEYORS OF OKLAHOMA

13800 WIRELESS WAY, OKLA. CITY, OKLA. 73134 * LOCAL (405) 843-4847 * OUT OF STATE (800) 654-3219
Certificate of Authorization No. 1293 LS

API 017-25364

CANADIAN County, Oklahoma

320'FSL-1410'FWL Section 19 Township 13N Range 8W I.M.



NOTE: The information shown herein is for construction purposes ONLY.

Operator: CIMAREX ENERGY CO.

Lease Name: LEOTA Well No.: 2H-1918X

Topography & Vegetation Loc. fell in level alfalfa field.

Good Drill Site? Yes

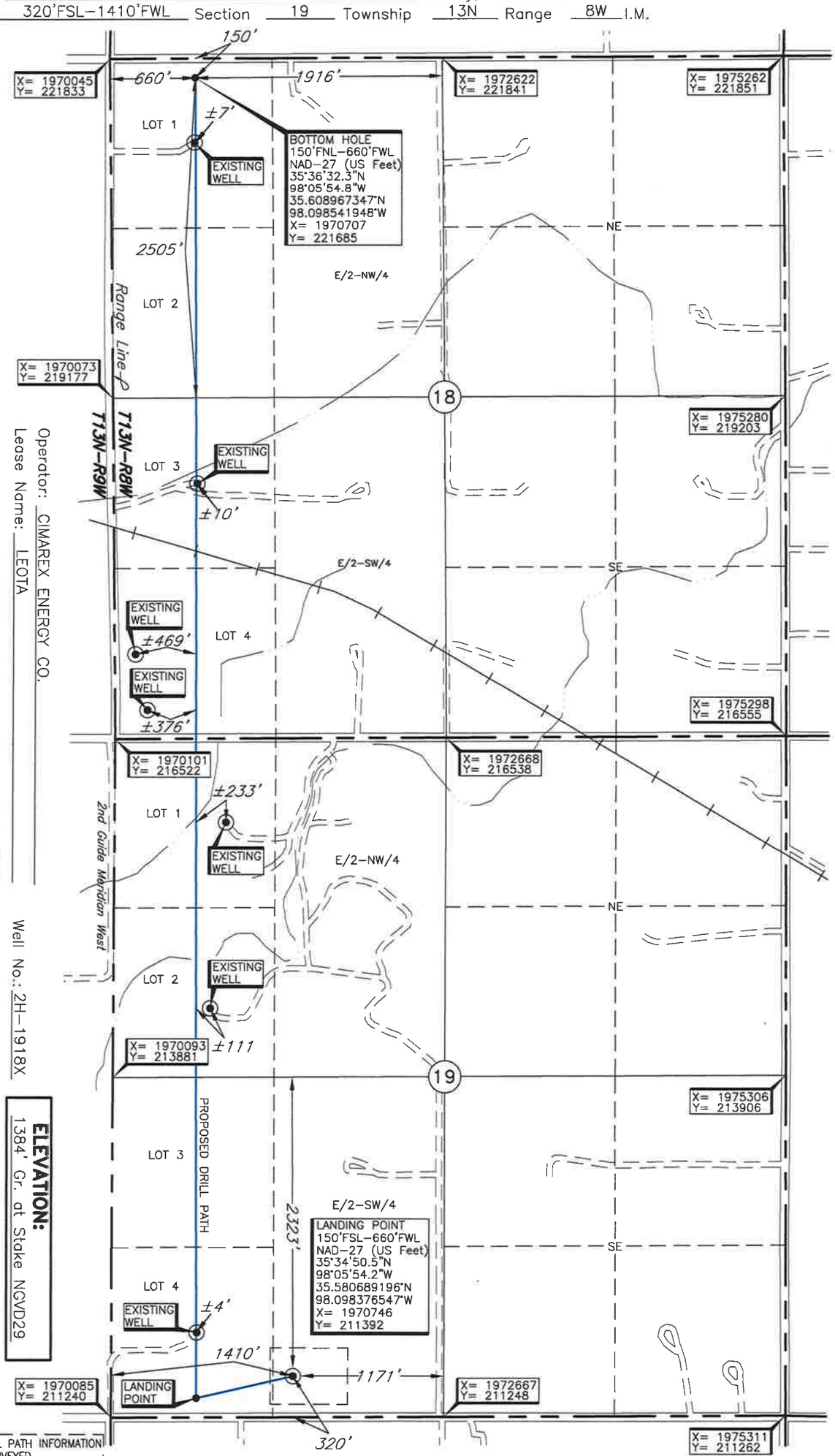
Reference Stakes or Alternate Location Stakes Set None

Best Accessibility to Location From South off county road.

Distance & Direction from Hwy Jct or Town From Calumet, OK, go South on US Hwy. 270 ±1.3 miles, then go East ±1 mile to the SW Cor. of Sec. 19-T13N-R8W.

ELEVATION: 1384' Gr. at Stake NGVD29

LANDING POINT, BOTTOM HOLE, AND DRILL PATH INFORMATION PROVIDED BY OPERATOR LISTED, NOT SURVEYED.



Date of Drawing: Aug. 21, 2018

Invoice # 300585 Date Staked: Aug. 16, 2018 TR

This information was gathered with a GPS receiver with 1 ft Horiz./Vert. accuracy

DATUM: NAD-27
LAT: 35°34'52.2"N
LONG: 98°05'45.1"W
LAT: 35.581164969°N
LONG: 98.095853277°W
STATE PLANE COORDINATES: (US Feet)
ZONE: OK NORTH
X: 1971496
Y: 211564

CERTIFICATE:

I, Thomas L. Howell an Oklahoma Licensed Land Surveyor and an authorized agent of Topographic Land Surveyors of Oklahoma, do hereby certify to the information shown herein

Thomas L. Howell

Oklahoma Lic. No. 1433

LICENSED PROFESSIONAL LAND SURVEYOR
THOMAS L. HOWELL
1433
8-24-18
OKLAHOMA