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

API NUMBER: 017 25022 A

Approval Date: 06/20/2017
Expiration Date: 12/20/2017

Horizontal Hole Oil & Gas

Amend reason: CHANGE SURFACE LOCATION & GROUND ELEVATION; UPDATE ORDERS

AMEND PERMIT TO DRILL

WELL LOCATION: Sec: 17 Twp: 11N Rge: 6W County: CANADIAN

SPOT LOCATION: SW SW SW SW FEET FROM QUARTER: FROM **SOUTH** FROM **WEST**
SECTION LINES: **260** **295**

Lease Name: RADCLIFF **Well No: 2-17H** **Well will be 260 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

DAVID & TONI RADCLIFF
1107 MANNING ROAD
EL RENO OK 73036

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

	Name	Depth		Name	Depth
1	MISSISSIPPIAN	9324	6		
2	WOODFORD	9644	7		
3			8		
4			9		
5			10		

Spacing Orders: 627163 Location Exception Orders: 666668 665629 Increased Density Orders: 666124

Pending CD Numbers: Special Orders:

Total Depth: 14342 Ground Elevation: 1369 **Surface Casing: 1500** Depth to base of Treatable Water-Bearing FM: 490

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

PIT 1 INFORMATION

Type of Pit System: CLOSED Closed System Means Steel Pits
Type of Mud System: WATER BASED
Chlorides Max: 5000 Average: 3000
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** located in a Hydrologically Sensitive Area.
Category of Pit: C
Liner not required for Category: C
Pit Location is AP/TE DEPOSIT
Pit Location Formation: TERRACE

Approved Method for disposal of Drilling Fluids:

D. One time land application -- (REQUIRES PERMIT) PERMIT NO: 17-32633
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 17 Twp 11N Rge 6W County CANADIAN

Spot Location of End Point: NE NW NW NW

Feet From: NORTH 1/4 Section Line: 165

Feet From: WEST 1/4 Section Line: 380

Depth of Deviation: 8634

Radius of Turn: 477

Direction: 2

Total Length: 4959

Measured Total Depth: 14342

True Vertical Depth: 9644

End Point Location from Lease,
Unit, or Property Line: 165

Notes:

Category	Description
DEEP SURFACE CASING	6/16/2017 - 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 - 665629	8/21/2017 - G75 - (I.O.) 17-11N-6W X165:10-3-28(C)(2)(B) MSSP (RADCLIFF 2-17H) MAY BE CLOSER THAN 600' TO RADCLIFF 2-17 CIMAREX ENERGY CO. 7-5-2017
HYDRAULIC FRACTURING	6/16/2017 - G71 - OCC 165:10-3-10 REQUIRES: 1) THE CHEMICAL DISCLOSURE OF HYDRAULIC FRACTURING INGREDIENTS FOR ALL WELLS BE REPORTED TO FRACFOCUS USING THE FOLLOWING LINK HTTP://FRACFOCUS.ORG/ WITH NOTICE GIVEN 48 HOURS IN ADVANCE OF FRACTURING TO THE LOCAL OCC DISTRICT OFFICE; AND, 2) PRIOR TO COMMENCEMENT OF FRACTURING OPERATIONS FOR HORIZONTAL WELLS, NOTICE ALSO GIVEN FIVE BUSINESS DAYS IN ADVANCE TO OFFSET OPERATORS WITH WELLS COMPLETED IN THE SAME COMMON SOURCE OF SUPPLY WITHIN 1/2 MILE
INCREASED DENSITY - 666124	8/21/2017 - G75 - 17-11N-6W X627163 WDFD 4 WELLS CIMAREX ENERGY CO. 7-19-2017
LOCATION EXCEPTION - 666668	8/21/2017 - G75 - (I.O.) 17-11N-6W X627163 MSSP, WDFD COMPL. INT. NCT 150' FSL, NCT 150' FNL, NCT 300' FWL CIMAREX ENERGY CO. 8-4-2017
SPACING - 627163	6/20/2017 - G75 - (640)(HOR) 17-11N-6W VAC OTHER VAC 151088 MISS N2 EST MSSP, WDFD, OTHER COMPL. INT. (WDFD) NLT 165' FNL & FSL, NLT 330' FEL & FWL COMPL. INT. (MSSP) NLT 660' FB (COEXIST SP. ORDER # 151088 MISS S2)

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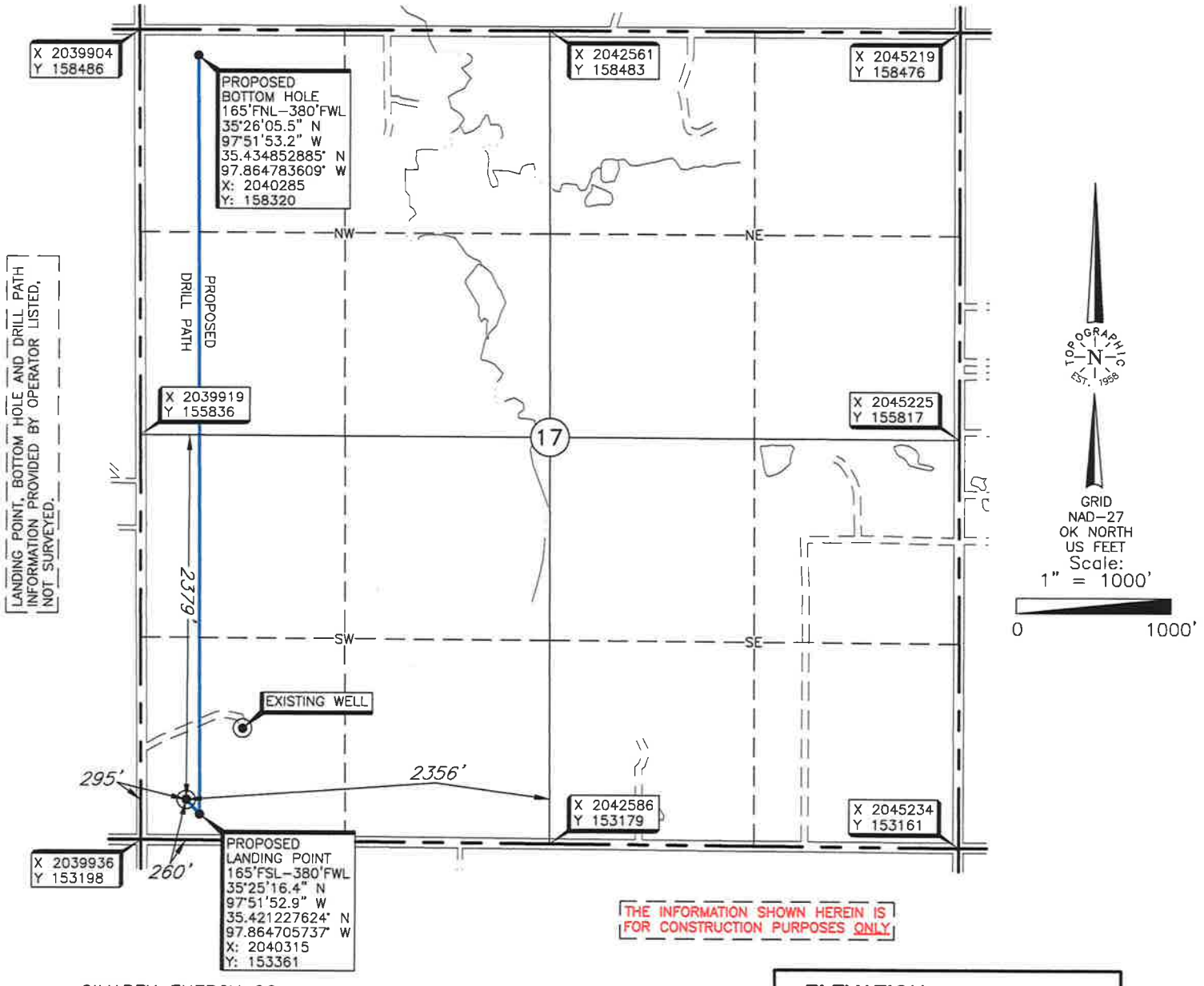
TOPOGRAPHIC LAND SURVEYORS OF OKLAHOMA

6709 NORTH CLASSEN BLVD., OKLA. CITY, OKLA. 73116 * LOCAL (405) 843-4847 * OUT OF STATE (800) 654-3219
Certificate of Authorization No. 1293 LS

API 017-25022 A

CANADIAN County, Oklahoma

260'FSL-295'FWL Section 17 Township 11N Range 6W I.M.



THE INFORMATION SHOWN HEREIN IS FOR CONSTRUCTION PURPOSES ONLY

Operator: CIMAREX ENERGY CO.

Lease Name: RADCLIFF Well No.: 2-17H

ELEVATION: 1369' Gr. at Stake (NGVD 29)

Topography & Vegetation Loc. fell in plowed 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 the junction of St. Hwy 152 E-W & US Hwy 81 N-S in Union City, Oklahoma, go ± 4 miles East on St. Hwy 152, then ± 2 miles North to the Southwest Corner of Section 17, T11N-R6W.

Date of Drawing: Aug. 11, 2017

Invoice # 279812 Date Staked: Aug. 9, 2017 NMB/TR

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

DATUM: NAD-27
LAT: 35°25'17.4"N
LONG: 97°51'54.0"W
LAT: 35.421491418°N
LONG: 97.864992353°W

STATE PLANE COORDINATES (US FEET):
ZONE: OK NORTH
X: 2040229
Y: 153457

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 Reg. No. 1433

LICENSED PROFESSIONAL LAND SURVEYOR
THOMAS L. HOWELL
1433
8-11-17
OKLAHOMA