API NUMBER: 073 25872

Horizontal Hole Oil & Gas

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

Approval Date: 12/21/2017
Expiration Date: 06/21/2018

PERMIT TO DRILL

WELL LOCATION: Sec: 22 Twp: 15N Rge: 9W County: KINGFISHER

SPOT LOCATION: NW NW NE NE FEET FROM QUARTER: FROM **NORTH** FROM **EAST**
SECTION LINES: **275** **1205**

Lease Name: MISS MARY **Well No: 2H-2227X** **Well will be 275 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

PATRICIA KAY SANTO
4927 E. 870 ROAD
OKARCHE OK 73762

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

	Name	Depth		Name	Depth
1	MISSISSIPPIAN (EX CHESTER)	9638	6		
2	MISSISSIPPI SOLID	9950	7		
3	WOODFORD	10245	8		
4			9		
5			10		

Spacing Orders: 652230
272944
580801

Location Exception Orders:

Increased Density Orders:

Pending CD Numbers: 201704334
201704328
201704331
201704329

Special Orders:

Total Depth: 19735 Ground Elevation: 1210 **Surface Casing: 1500** Depth to base of Treatable Water-Bearing FM: 370

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 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: CHICKASHA

Approved Method for disposal of Drilling Fluids:

D. One time land application -- (REQUIRES PERMIT) PERMIT NO: 17-33116
H. SEE MEMO

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.

PIT 2 INFORMATION

Type of Pit System: CLOSED Closed System Means Steel Pits

Type of Mud System: OIL BASED

Chlorides Max: 300000 Average: 200000

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: CHICKASHA

HORIZONTAL HOLE 1

Sec 27 Twp 15N Rge 9W County KINGFISHER

Spot Location of End Point: S2 SE SW SE

Feet From: SOUTH 1/4 Section Line: 150

Feet From: EAST 1/4 Section Line: 1650

Depth of Deviation: 8918

Radius of Turn: 477

Direction: 185

Total Length: 10068

Measured Total Depth: 19735

True Vertical Depth: 10340

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

Notes:

Category	Description
DEEP SURFACE CASING	12/21/2017 - G71 - APPROVED; NOTIFY OCC FIELD INSPECTOR IMMEDIATELY FOR ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON CONDUCTOR OR SURFACE CASING
HYDRAULIC FRACTURING	12/21/2017 - 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
INTERMEDIATE CASING	12/21/2017 - G71 - DUE TO THE KNOWN POTENTIAL RISK OF ENCOUNTERING AN OVER-PRESSURED ZONE IN THE MORROW SERIES IN THIS AREA, THE TECHNICAL MANAGER RECOMMENDS SETTING AN INTERMEDIATE STRING OF CASING IMMEDIATELY ABOVE THE MORROW SERIES
MEMO	12/21/2017 - G75 - PIT 1 & 2 - CLOSED SYSTEM=STEEL PITS PER OPERATOR REQUEST; PIT 2 - OBM TO VENDOR, OBM CUTTINGS PER DISTRICT

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
PENDING CD - 201704328	12/21/2017 - G75 - (I.O.) 27 & 22-15N-9W EST MULTIUNIT HORIZONTAL WELL X272944 MSSSD 27-15N-9W X580801 WDFD 27-15N-9W X652230 MSNLC, WDFD 22-15N-9W (WDFD ASSOCIATED COMMON SOURCE OF SUPPLY TO MSNLC, MSSSD) 50% 27-15N-9W 50% 22-15N-9W CIMAREX ENERGY CO. REC 8-7-2017 (DUNN)
PENDING CD - 201704329	12/21/2017 - G75 - (I.O.) 27 & 22-15N-9W X165:10-3-28(C)(2)(B) MSNLC, MSSSD, WDFD (MISS MARY 2H-2227X) MAY BE CLOSER THAN 600' TO MISS MARY 3H-2227X CIMAREX ENERGY CO. REC 8-7-2017 (DUNN)
PENDING CD - 201704331	12/21/2017 - G75 - 27-15N-9W X272944 MSSSD X580801 WDFD 2 WELLS NO OP. NAMED. REC 8-7-2017 (DUNN)
PENDING CD - 201704334	12/21/2017 - G75 - (I.O.) 27 & 22-15N-9W X272944 MSSSD 27-15N-9W X580801 WDFD 27-15N-9W X652230 MSNLC, WDFD 22-15N-9W COMPL. INT. (27-15N-9W) NCT 150' FSL, NCT 0' FNL, NCT 1320' FEL ** COMPL. INT. (22-15N-9W) NCT 0' FSL, NCT 150' FNL, NCT 1320' FEL ** NO OP. NAMED REC 8-7-2017 (DUNN) ** ITD HAS LATERAL DRILLED IN OPPOSITE DIRECTION; TO BE CORRECTED AT HEARING FOR FINAL ORDER LOCATION EXCEPTION PER ATTORNEY FOR OPERATOR
SPACING - 272944	12/21/2017 - G75 - (640) 27-15N-9W EXT 166936 MSSSD, OTHERS EXT OTHERS
SPACING - 580801	12/21/2017 - G75 - (640) 27-15N-9W EXT 472385 WDFD
SPACING - 652230	12/21/2017 - G75 - (640)(HOR) 22-15N-9W EST 642657 MSNLC, WDFD, OTHER COMPL. INT. (MSNLC) NLT 660' FB COMPL. INT. (WDFD) NLT 165' FNL & FSL, NLT 330' FEL & FWL

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.

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 073-25872

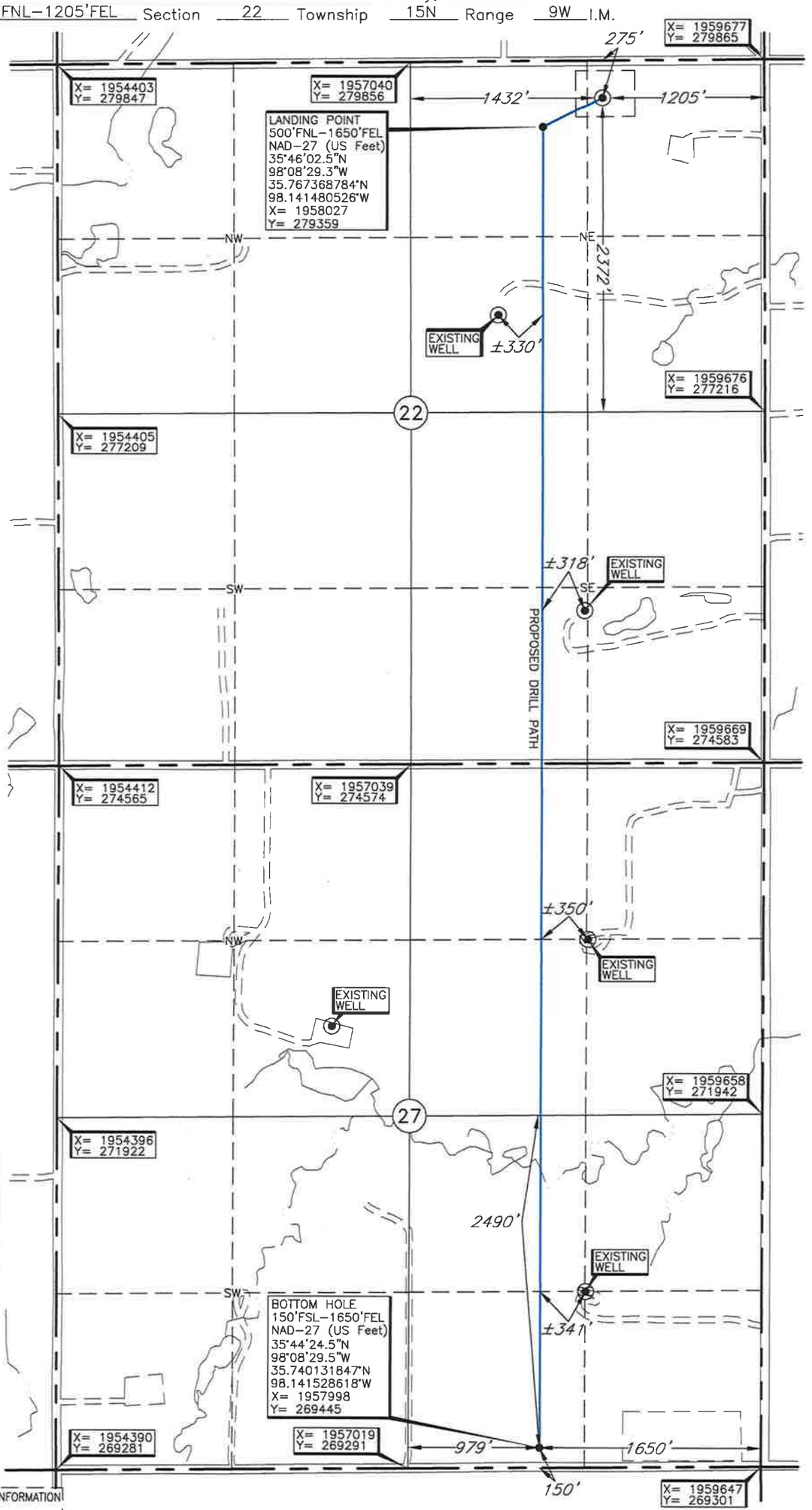
KINGFISHER County, Oklahoma

275'FNL-1205'FEL Section 22 Township 15N Range 9W I.M.

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

GRID NAD-27 OK NORTH US Feet

0' 500' 1000'



Operator: CIMAREX ENERGY CO.

Lease Name: MISS MARY Well No.: 2H-2227X

Topography & Vegetation Loc. fell in terraced wheat field

ELEVATION: 1210' Gr. at Stake NGVD29

Good Drill Site? Yes Reference Stakes or Alternate Location Stakes Set None

Best Accessibility to Location From North off county road.

Distance & Direction from Hwy Jct or Town From the junction of US Hwy. 81 and St. Hwy. 33 in Kingfisher, OK, go West ±10.5 miles on St. Hwy 33, then South ±6.0 miles, then West ±1.0 miles to the NE corner of Section 22, T15N-R9W.

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

Date of Drawing: Dec. 13, 2017

Invoice # 285320A Date Staked: Dec. 13, 2017 TR

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

DATUM: NAD-27
LAT: 35°46'04.8"N
LONG: 98°08'23.9"W
LAT: 35.767992867°N
LONG: 98.139981087°W
STATE PLANE COORDINATES: (US Feet)
ZONE: OK NORTH
X: 1958472
Y: 279586

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
12-15-17
OKLAHOMA