

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

API NUMBER: 011 23891

Approval Date: 12/01/2017  
Expiration Date: 06/01/2018

Horizontal Hole Oil & Gas

PERMIT TO DRILL

WELL LOCATION: Sec: 20 Twp: 15N Rge: 10W

County: BLAINE

SPOT LOCATION: ☐ SE ☐ SW ☐ SE ☐ SW

FEET FROM QUARTER: FROM SOUTH FROM WEST

SECTION LINES: 265 1906

Lease Name: HAMMERHEAD 20-15N-10W

Well No: 2H

Well will be 265 feet from nearest unit or lease boundary.

Operator Name: PALOMA OPERATING CO INC

Telephone: 7136508509

OTC/OCC Number: 23932 0

PALOMA OPERATING CO INC  
1100 LOUISIANA ST STE 5100  
HOUSTON, TX 77002-5220

KENNETH KENNEDY  
23918 E960 RD  
WEATHERFORD OK 73096

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

	Name	Depth	Name	Depth
1	MISSISSIPPIAN	11137	6	
2			7	
3			8	
4			9	
5			10	

Spacing Orders: 648300  
660911

Location Exception Orders: 669595

Increased Density Orders: 669596

Pending CD Numbers:

Special Orders:

Total Depth: 16089

Ground Elevation: 1516

**Surface Casing: 1500**

Depth to base of Treatable Water-Bearing FM: 130

Under Federal Jurisdiction: No

Fresh Water Supply Well Drilled: No

Surface Water used to Drill: No

PIT 1 INFORMATION

Approved Method for disposal of Drilling Fluids:

Type of Pit System: CLOSED Closed System Means Steel Pits

Type of Mud System: WATER BASED

Chlorides Max: 8000 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 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

D. One time land application -- (REQUIRES PERMIT)  
H. SEE MEMO

PERMIT NO: 17-33191

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 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

## HORIZONTAL HOLE 1

Sec 20 Twp 15N Rge 10W County BLAINE

Spot Location of End Point: NW NE NE NW

Feet From: NORTH 1/4 Section Line: 65

Feet From: WEST 1/4 Section Line: 2180

Depth of Deviation: 10658

Radius of Turn: 478

Direction: 2

Total Length: 4680

Measured Total Depth: 16089

True Vertical Depth: 11137

End Point Location from Lease,  
Unit, or Property Line: 65

### Notes:

#### Category

#### Description

#### DEEP SURFACE CASING

11/22/2017 - G71 - APPROVED; NOTIFY OCC FIELD INSPECTOR IMMEDIATELY OF ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON ANY CONDUCTOR OR SURFACE CASING

#### HYDRAULIC FRACTURING

11/22/2017 - 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](http://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](http://FRACFOCUS.ORG)

#### INCREASED DENSITY - 669596

11/29/2017 - G58 - 20-15N-10W  
X648300 MSSP\*\*  
1 WELL  
PALOMA PARTNERS IV, LLC  
10/31/2017

\*\*S/B 648300/660911 MSSP; TO BE CORRECTED AT FINAL HEARING PER OPERATOR

#### INTERMEDIATE CASING

11/22/2017 - 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

This permit does not address the right of entry or settlement of surface damages.

011 23891 HAMMERHEAD 20-15N-10W 2H

The duration of this permit is SIX MONTHS, except as otherwise provided by Rule 165: 10-3-1.

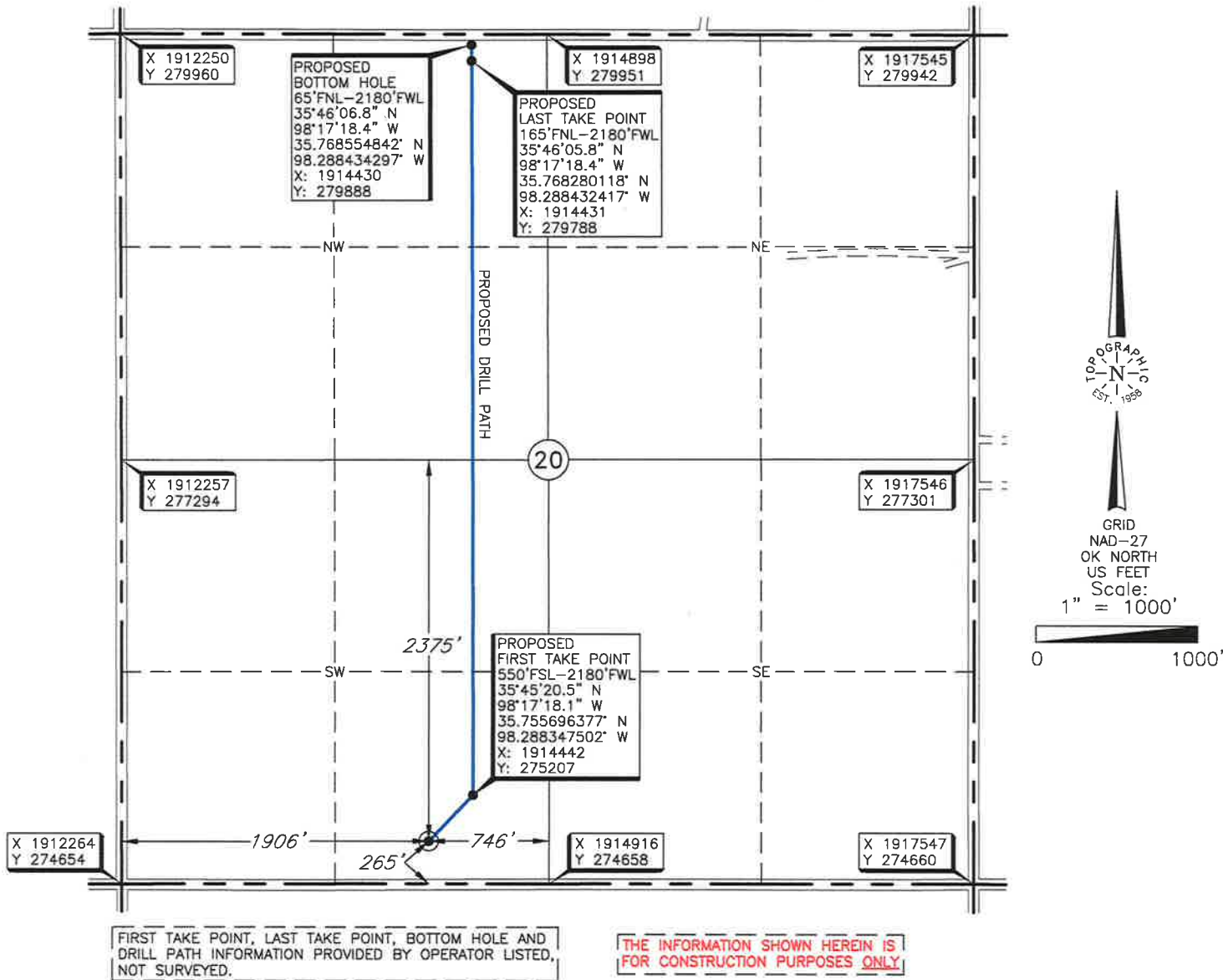
Rule 165: 10-3-4 (c) (7) (e) - The Operator shall give 24 Hours notice by telephone to the appropriate District Office of the Conservation Division as to when Surface Casing will be run.

Category	Description
LOCATION EXCEPTION - 669595	11/29/2017 - G58 - (I.O.) 20-15N-10W X648300 MSSP** COMPL. INT. NCT 165' FSL, NCT 165' FNL, NCT 450' FWL PALOMA OPERATING CO., INC. 10/31/2017
MEMO	**S/B 648300/660911 MSSP; TO BE CORRECTED AT FINAL HEARING PER OPERATOR 11/22/2017 - G71 - PITS 1 & 2 - CLOSED SYSTEM=STEEL PITS PER OPERATOR REQUEST, PIT 2 - OBM RETURNED TO VENDOR, CUTTINGS PERMITTED PER DISTRICT
SPACING - 648300	11/29/2017 - G58 - (640) 20-15N-10W EST MSSP EXT OTHERS
SPACING - 660911	11/29/2017 - G58 - (640) 20-15N-10W NPT 648300 TO CORRECT SCRIVNER'S ERROR IN PARAGRAPH F AND EXHIBIT A AS VERTICAL SPACING

011-23891

BLAINE County, Oklahoma

265'FSL-1906'FWL Section 20 Township 15N Range 10W I.M.



Operator: PALOMA OPERATING COMPANY, INC.

Lease Name: HAMMERHEAD 20-15N-10W

Well No.: 2H

ELEVATION:

1516' Gr. at Stake

Topography & Vegetation Loc. fell in terraced bean 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 US Hwy 281/St. Hwy 8 in Greenfield, Oklahoma, go ± 5.5 miles East, then ± 1 mile  
North to the Southwest Corner of Section 20, T15N-R10W.

DATUM: NAD-27  
LAT: 35°45'17.7" N  
LONG: 98°17'21.4" W  
LAT: 35.754909705° N  
LONG: 98.289266132° W  
STATE PLANE  
COORDINATES (US FEET):  
ZONE: OK NORTH  
X: 1914169  
Y: 274922

Date of Drawing: Aug. 18, 2017  
Invoice # 279233A Date Staked: Aug. 17, 2017 NMB

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



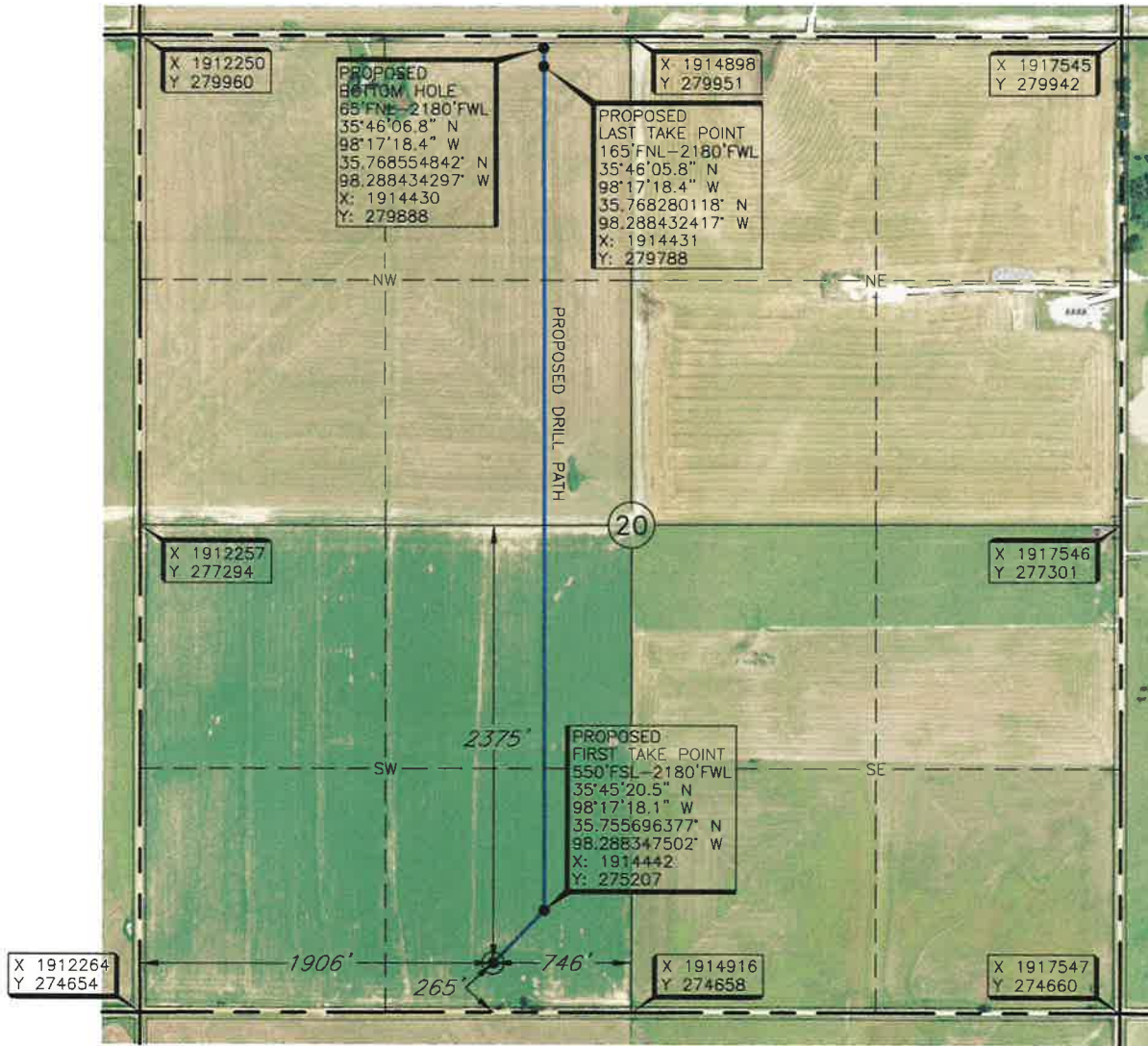
# TOPOGRAPHIC LAND SURVEYORS OF OKLAHOMA

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

BLAINE

County, Oklahoma

265'FSL-1906'FWL Section 20 Township 15N Range 10W I.M.



FIRST TAKE POINT, LAST TAKE POINT, BOTTOM HOLE AND  
DRILL PATH INFORMATION PROVIDED BY OPERATOR LISTED,  
NOT SURVEYED.

THE INFORMATION SHOWN HEREIN IS  
FOR CONSTRUCTION PURPOSES ONLY

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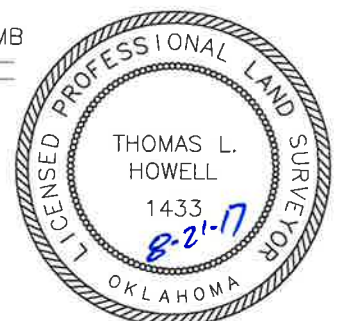
Invoice # 279233A Date Staked: Aug. 17, 2017

NMB

## CERTIFICATE:

I, Thomas L. Howell on 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



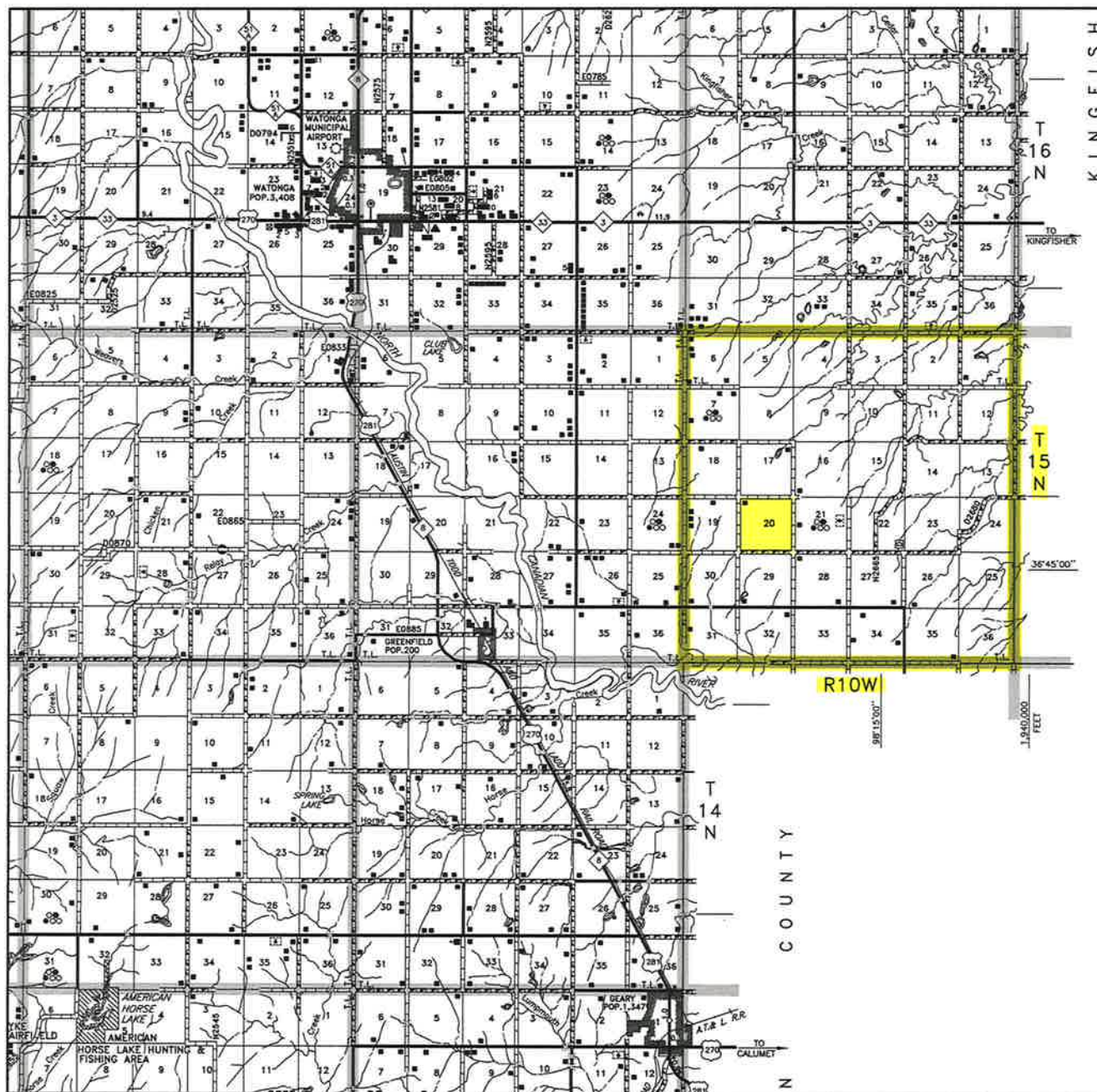
This information was  
gathered with a GPS receiver  
with ±1 foot Horiz./Vert. accuracy



# TOPOGRAPHIC LAND SURVEYORS OF OKLAHOMA

Surveying and Mapping for the Energy Industry  
6709 North Classen Blvd. Oklahoma City, OK 73116 [www.topographic.com](http://www.topographic.com)  
Telephone Numbers: Local (405) 843-4847 Toll Free (800) 654-3219

## VICINITY MAP



Scale: 1" = 3 Miles

Sec. 20 Twp. 15N Rng. 10W I.M.

County BLAINE State OK

Operator PALOMA OPERATING COMPANY, INC.



LAND SURVEYORS OF OKLAHOMA



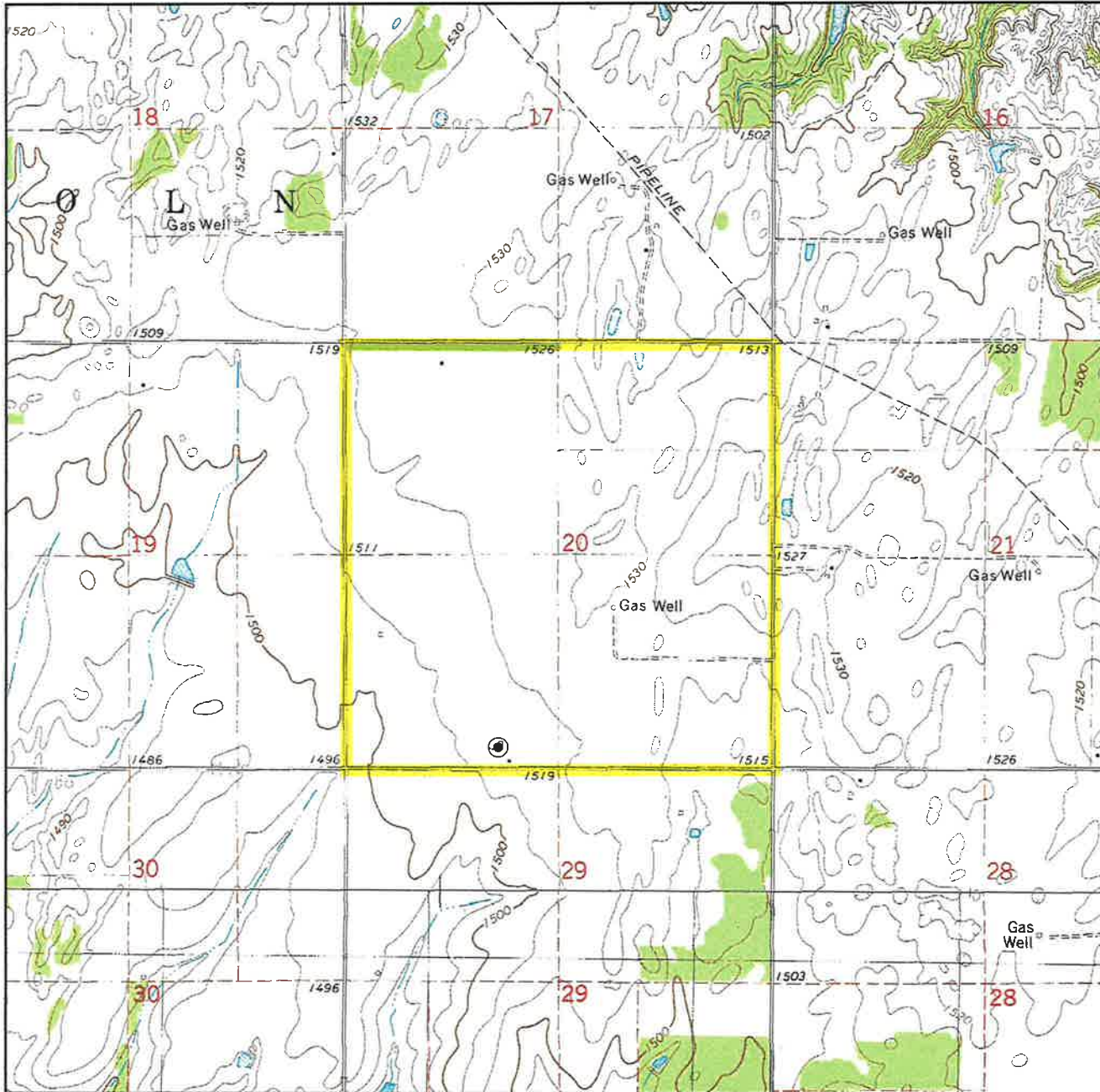
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## LOCATION & ELEVATION VERIFICATION MAP



Sec. 20 Twp. 15N Rng. 10W I.M.

County BLAINE State OK

Operator PALOMA OPERATING COMPANY, INC.

Description 265'FSL-1906'FWL

Lease HAMMERHEAD 20-15N-10W 2H

Elevation 1516' Gr. at Stake

U.S.G.S. Topographic  
Quadrangle Map WATONGA SE, OK

Above Background Data from  
U.S.G.S. Topographic Map

Scale: 1"=2000'

Contour Interval 10'

When elevation is shown hereon it is the ground  
elevation of the location stake.  
Review this plat and inform us immediately of  
any possible discrepancy.



LAND SURVEYORS OF OKLAHOMA

Aug. 17, 2017