

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

API NUMBER: 063 24886 A

Approval Date: 03/08/2019

Expiration Date: 09/08/2020

Horizontal Hole Oil & Gas
Multi Unit

Amend reason: CHANGE TO MULTIUNIT HORIZONTAL OIL/GAS
WELL; ADD FORMATIONS

AMEND PERMIT TO DRILL

WELL LOCATION: Sec: 12 Twp: 8N Rge: 11E County: HUGHES

SPOT LOCATION: ☐ NW ☐ NE ☐ NE ☐ SW FEET FROM QUARTER: FROM SOUTH FROM WEST

SECTION LINES: 2447 1985

Lease Name: BOSE Well No: 2-12/1H Well will be 1985 feet from nearest unit or lease boundary.

Operator BRAVO ARKOMA LLC
Name:

Telephone: 9188944440; 9188944

OTC/OCC Number: 23562 0

BRAVO ARKOMA LLC
1323 E 71ST ST STE 400
TULSA, OK 74136-5067

MICHAEL T. BOSE AND CHERYL A. BOSE
7056 HACKBERRY COURT
TULSA OK 74132

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

	Name	Depth	Name	Depth
1	MISSISSIPPIAN	4493	6	
2	WOODFORD	4774	7	
3	SYLVAN	4844	8	
4			9	
5			10	

Spacing Orders: 668135

Location Exception Orders:

Increased Density Orders:

Pending CD Numbers: 201900747
201900748
201900753
201900754

Special Orders:

Total Depth: 11818 Ground Elevation: 960 Surface Casing: 1300 Depth to base of Treatable Water-Bearing FM: 220

Under Federal Jurisdiction: No

Fresh Water Supply Well Drilled: No

Surface Water used to Drill: Yes

PIT 1 INFORMATION

Type of Pit System: ON SITE

Type of Mud System: AIR

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: 4

Liner not required for Category: 4

Pit Location is BED AQUIFER

Pit Location Formation: CALVIN

Mud System Change to Water-Based or Oil-Based Mud Requires an Amended Intent (Form 1000).

Approved Method for disposal of Drilling Fluids:

A. Evaporation/dewater and backfilling of reserve pit.

F. Haul to Commercial soil farming facility: Sec. 14 Twn. 7N Rng. 9E Cnty. 63 Order No: 551649

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: 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 BED AQUIFER

Pit Location Formation: CALVIN

PIT 3 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 BED AQUIFER

Pit Location Formation: CALVIN

HORIZONTAL HOLE 1

Sec 01 Twp 8N Rge 11E County HUGHES

Spot Location of End Point: N2 NW NE NW

Feet From: NORTH 1/4 Section Line: 165

Feet From: WEST 1/4 Section Line: 1650

Depth of Deviation: 4453

Radius of Turn: 573

Direction: 359

Total Length: 6465

Measured Total Depth: 11818

True Vertical Depth: 4844

End Point Location from Lease,

Unit, or Property Line: 165

Notes:

Category

Description

DEEP SURFACE CASING

3/4/2019 - 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

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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.

063 24886 BOSE 2-12/1H

Category	Description
HYDRAULIC FRACTURING	<p>3/18/2019 - G71 - OCC 165:10-3-10 REQUIRES:</p> <p>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;</p> <p>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: OCCWEB.COM/OG/OGFORMS.HTML; AND,</p> <p>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</p>
MEMO	<p>3/4/2019 - G71 - PIT 2 & 3 - CLOSED SYSTEM=STEEL PITS PER OPERATOR REQUEST, WBM & OBM CUTTINGS CAPTURED IN CONCRETE-LINED PIT, SOLIDIFIED AND HELD UNTIL DISPOSAL APPROVED BY OCC; PIT 3 - OBM TO VENDOR</p>
PENDING CD - 201900747	<p>3/26/2019 - G75 - (I.O.) 12 & 1-8N-11E EST MULTIUNIT HORIZONTAL WELL X668135 MSSP, WDFD, SLVN, OTHER (MSSP, SLVN ADJACENT COMMON SOURCES OF SUPPLY TO WDFD) 30% 12-8N-11E 70% 1-8N-11E NO OP. NAMED REC 2-22-2019 (JOHNSON)</p>
PENDING CD - 201900748	<p>3/26/2019 - G75 - (I.O.) 12 & 1-8N-11E X668135 MSSP, WDFD, SLVN, OTHER COMPL. INT. (12-8N-11E) NLT 2000' FNL, NCT 0' FNL, NCT 990' FWL COMPL. INT. (1-8N-11E) NCT 0' FSL, NCT 165' FNL, NCT 990' FWL NO OP. NAMED REC 2-22-2019 (JOHNSON)</p>
PENDING CD - 201900753	<p>3/26/2019 - G75 - 1-8N-11E X668135 WDFD 2 WELLS NO OP. NAMED REC 2-22-2019 (JOHNSON)</p>
PENDING CD - 201900754	<p>3/26/2019 - G75 - 12-8N-11E X668135 WDFD 5 WELLS NO OP. NAMED REC 2-22-2019 (JOHNSON)</p>
SPACING - 668135	<p>3/26/2019 - G75 - (640)(HOR) 12 & 1-8N-11E EXT 659541 MSSP, WDFD, SLVN, OTHER COMPL. INT. (MSSP) NLT 660' FB COMPL. INT. (SLVN) NLT 330' FB COMPL. INT. (WDFD) NLT 165' FNL & FSL, NLT 330' FEL & FWL</p>

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.



Well Location Plat

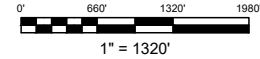
S.H.L. Sec. 12-8N-11E I.M.
B.H.L. Sec. 1-8N-11E I.M.

Operator: BRAVO NATURAL RESOURCES, LLC
Lease Name and No.: BOSE 2-12/1H
Footage: 2447' FSL - 1985' FWL Gr. Elevation: 960'
Section: 12 Township: 8N Range: 11E I.M.
County: Hughes State of Oklahoma
Terrain at Loc.: Location fell in timber, sloping down on the Northwest side.

API 063-24886 A



All bearings shown
are grid bearings.

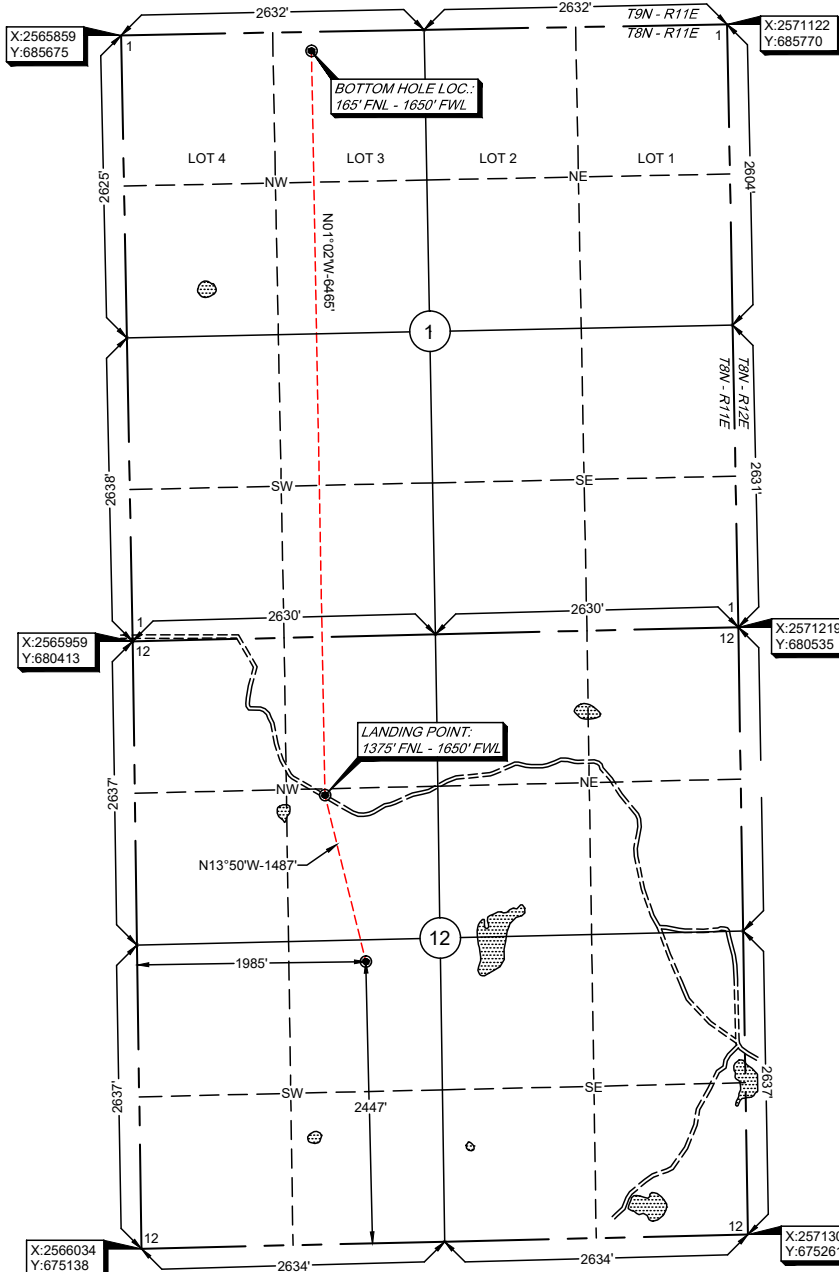


GPS DATUM
NAD 27
OK SOUTH ZONE

Surface Hole Loc.:
Lat: 35°10'50.41"N
Lon: 96°05'57.46"W
Lat: 35.18066811
Lon: -96.09929310
X: 2567984
Y: 677632

Landing Point:
Lat: 35°11'04.75"N
Lon: 96°06'01.41"W
Lat: 35.18465412
Lon: -96.10039153
X: 2567629
Y: 679076

Bottom Hole Loc.:
Lat: 35°12'08.70"N
Lon: 96°06'01.35"W
Lat: 35.20241616
Lon: -96.10037628
X: 2567511
Y: 685540



Please note that this location was staked on the ground under the supervision of the undersigned and that the location is not guaranteed. Please contact Arkoma Surveying and Mapping promptly if any inaccuracy is determined. GPS data is obtained from RTK - GPS. NOTE: X and Y data shown hereon for Section Corners may NOT have been surveyed on-the-ground, and further, does NOT represent a true Boundary Survey, but is assumed to be a true Boundary Survey. The location is assumed to be a true Boundary Survey, and may not have been measured on-the-ground, and further, does not represent a true boundary survey.

Survey and plat by:
Arkoma Surveying and Mapping, PLLC
P.O. Box 238 Wilburton, OK 74578
Ph. 918-465-5711 Fax 918-465-5030
Certificate of Authorization No. 5348
Expires June 30, 2020

Invoice #8451-A-B
Date Staked: 02/15/19 By: H.S.
Date Drawn: 02/18/19 By: J.H.
Add LP & BHL. Revise Lease Name: 03/06/19 By: C.K.

Certification:

This is to certify that this Well Location Plat represents the results of a survey made on the ground performed under the supervision of the undersigned.

Lance G. Mathis
LANCE G. MATHIS

03/11/19

OK LPLS 1664

