API NUMBER:	051	25036	

**Directional 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:
 06/28/2023

 Expiration Date:
 12/28/2024

## PERMIT TO DRILL

SPOTLOCATOR:       NV	WELL LOCATION: Section: 22 Township: 3N	Range: 5W County: 0	GRADY	
1026       1332         Lease Name:       CKSMOU       Well Nie: 27-23-1       Well will be 1025 feet from nearest unit or lease boundary.         Operator Name:       MACK ENERGY CO       Telephone: 4058328585 5502525580       OTC/OCC Number: 11739 0         MACK ENERGY CO       Mack ENERGY CO       Mack ENERGY CO       Mack ENERGY CO         OKLAHOMA CITY.       OK 73102-8831       Mack CASLAND FARMS         100 N. BROADWAY STE 3300       OK 73102         Formation(s)       (Permit Valid for Listed Formations Only):         Name       Code       Depth         1       MORROW SUETHIRUST       402048/WST         5genorg Ordern:       731833       Location Exception Ordern: No ExceptionS         Formationg CD Numbers:       NO Pending       Working interest ownerst routilies       DNA         Special ground Elevation:       1141       Surface Casing: 1500       Depth to base of Dreasting FM: 160         Depth:       Depth to base of Dreasting FM: 180       Depth to base of Dreasting FM: 180         Depth:       Depth to base of Dreasting FM: 180       Depth to base of Dreasting FM: 180         Depth:       Depth to base of Dreasting FM: 180       Depth to base of Dreasting FM: 180         Depth:       Depth to base of Dreasting FM: 180       Depth to base of Dreasting FM: 180		•		
Operator Name:       MACK ENERGY CO       DTCOCC Number:       11739       0         MACK ENERGY CO       OKLAHOMA CITY,       OK       73102-8831       MCCASLAND FARMS       100 N. BROADWAY STE 3300         OKLAHOMA CITY,       OK       73102-8831       OK       73102       OK       73102         Formation(s)       (Permit Valid for Listed Formations Only):       MCCASLAND FARMS       00 N. BROADWAY STE 3300       OKLAHOMA CITY       OK       73102         Stepring Orders:       Code       Depth       OK       73102       OK       73102         Stepring Orders:       No Pending       Location Exception Orders:       No Exceptions       Increased Density Orders:       No Special         Total Depth:       2120       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bening FM:       160         Under Federal Jurisdiction:       No       Special Orders:       No Secolal       Special Orders:       No Secolal         Total Depth:       2120       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bening FM:       160         Order Endersid Water Group       No       Special Orders:       No       Special Orders:       Category of PH: C       Category o	SEC			
MACK ENERGY CO       OK       AGNACK ENERGY CO         OKLAHOMA CITY,       OK       73102-8831         Formation(s)       (Permit Valid for Listed Formations Only):         Mame       Code       Depth         1       MORROW SUBTHRUST       402MR/WST       11968         Specing Orders:       73103       Location Exception Orders:       No Exceptions         Increased Density Orders:       73103       Location Exception Orders:       No Exceptions         Total Depth:       12102       Ground Elevation::       1141       Surface Casing:       1500       Depth to base of Treatable Water densing FM: 160         Deeps surface casing has been approve       Approved Method for disposal of Drilling Fluids::       Deeps surface casing has been approve         Prime:       Number:       No       Surface Casing:       1500       Depth to base of Treatable Water densing FM: 160         Under Federal Juridiction::       No       Surface Casing has been approve       Approved Method for disposal of Drilling Fluids::       Deeps surface casing has been approve         Prime International copies:       No       Exception of the surface frame the ord application - (REQUIRES PERMIT)       PERMIT NO: 23-39129         Prime:       No of Prime:       CLOSED Group System: WATER BASED       Closed System: WATER BASED       Closed System: ALLUV	Lease Name: CKSMOU	Well No: 27-23-1	Well will be 1026 feet from nearest unit or lease boundary.	
OKLAHOMA CITY,       OK       73102-8831         100 N. BROADWAY STE 3300 OKLAHOMA CITY       OK       73102         Formation(s)       (Permit Valid for Listed Formations Only):       Image: Code       Depth         1       MORROW SUBTHRUST       Gode       Depth         Spacing Orders:       731833       Locaton Exception Orders:       No Exceptions         Spacing Orders:       731833       Locaton Exception Orders:       No Exceptions         Total Depth:       12102       Ground Elevator:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Beering FM: 160         Under Federal Jurisdiction:       No       Special Orders:       No Special         Outer Federal Jurisdiction:       No       Special Orders:       No Special Orders:         Under Federal Jurisdiction:       No       Special Orders:       No Special Orders:         Surface Water used to Drill:       Yes       Doe time land application - (REQUIRES FERMIT)       PERMIT NO: 23-39129         PIT 1 INFORMATION       CLOSED Closed System Means Steel Pits       Type of Pit System: CLOSED Closed System Means Steel Pits       Pit Location is: ALLUVAL         Pit Location for duringipal water well?       N       Welfnield for datagory: C       Pit Location Formation: ALLUVAL         Pit Location for duringipal	Operator Name: MACK ENERGY CO	Telephone: 40583298	330; 5802525580 OTC/OCC Number: 11739 0	
OKLAHOMA CITY,       OK       73102-8831         Formation(s)       (Permit Valid for Listed Formations Only):         Name       Code       Depth         1       MORROW SUBTHRUST       402MRWST         Specing Orders:       731833       Location Exception Orders:       No Exceptions         Prending CD Numbers:       No Pending       Working Interest owners' notified:       DNA       Special Orders:       No Special         Total Depth:       12102       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM: 160         Under Federal Jurisdiction:       No       Surface Casing has been approved       Approved Method for disposal of Drilling Fluids:       D. One time land application - (REQUIRES PERMIT)       PERMIT NO: 23-39128         Under Federal Jurisdiction:       No       Surface Casing has been approved       Approved Method for disposal of Drilling Fluids:       D. One time land application - (REQUIRES PERMIT)       PERMIT NO: 23-39128         Under Federal Jurisdiction:       No       Surface Casing has been approved       Approved Method for disposal of Drilling Fluids:       D. One time land application - (REQUIRES PERMIT)       PERMIT NO: 23-39128         Deep of PIK System:       CASED       Closed System Means Steel PII's       PI Location Formation:       ALLUVIL       PI Location Formation:	MACK ENERGY CO		MCCASLAND FARMS	
Formation(s)       (Permit Valid for Listed Formations Only):         Name       Code       Depth         1       MORROW SUBTHRUST       402MRWST         Spacing Orders:       731833       Location Exception Orders:       No Exceptions         Prending CD Numbers:       No Pending       Working interest owners' notified:       DNA       Special Orders:       No Density         Pending CD Numbers:       No Pending       Working interest owners' notified:       DNA       Special Orders:       No Special         Total Depth:       12102       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM: 160         Deep surface casing has been approve       Preved Method for disposal of Drilling Fluids:       D. One time land application (REQUIRES PERMIT)       PERMIT NO: 23-33129         Under Federal Jurisdiction:       No       Surface Casing has been approve         Surface Water used to Delit:       Yes       Category of Pit: C       Liner not required for Category: C         Type of Pit System:       CLOSED       Closed System Means Steel Pits       Pit Location Formation:       ALLUVIL         Yellinde Max StooD       Yelling Fluids:       Pit Location Formation:       ALLUVIL       Pit Location Formation:       ALLUVIL         Pit Location for ordinger: </td <td></td> <td></td> <td>100 N. BROADWAY STE 3300</td>			100 N. BROADWAY STE 3300	
Name       Code       Depth         1       MORROW SUBTHRUST       402MRWST       11966         Spacing Orders:       731833       Location Exception Orders:       No Exceptions       Increased Density Orders:       No Density         Pending CD Numbers:       No Pending       Working interest owners' notified:       DNA       Special Orders:       No Special         Total Depth:       12102       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM:       160         Under Federal Jurisdiction:       No       Fresh Water Supply Well Drilled:       No       Percent Mater Supply Well Drilled:       No       No       Percent Mater Supply Well Drilled:       No       Percent Mater Supply Well Drilled:       No	OKLAHOMA CITY, OK 73102-8	831	OKLAHOMA CITY OK 73102	
Name       Code       Depth         1       MORROW SUBTHRUST       402MRWST       11966         Spacing Orders:       731833       Location Exception Orders:       No Exceptions       Increased Density Orders:       No Density         Pending CD Numbers:       No Pending       Working interest owners' notified:       DNA       Special Orders:       No Special         Total Depth:       12102       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM:       160         Under Federal Jurisdiction:       No       Fresh Water Supply Well Drilled:       No       Percent Mater Supply Well Drilled:       No       No       Percent Mater Supply Well Drilled:       No       Percent Mater Supply Well Drilled:       No				
Name       Code       Depth         1       MORROW SUBTHRUST       402MRWST       11966         Spacing Orders:       731833       Location Exception Orders:       No Exceptions       Increased Density Orders:       No Density         Pending CD Numbers:       No Pending       Working interest owners' notified:       DNA       Special Orders:       No Special         Total Depth:       12102       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM:       160         Under Federal Jurisdiction:       No       Fresh Water Supply Well Drilled:       No       Percent Mater Supply Well Drilled:       No       No       Percent Mater Supply Well Drilled:       No       Percent Mater Supply Well Drilled:       No	Formation(s) (Permit Valid for Listed Formations C	)nly):	•	
Specing Orders:       731833       Location Exception Orders:       No Exceptions       Increased Density Orders:       No Density         Pending CD Numbers:       No Pending       Working interest owners' notified:       DNA       Special Orders:       No Special         Total Depth:       12102       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM:       160         Under Federal Jurisdiction:       No       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM:       160         Under Federal Jurisdiction:       No       Approved Method for disposal of Drilling Fluids:       Deeps surface casing has been approved         Surface Water used to Drill:       Yes       Yes       Deep to the tage of Treatable Water-Bearing FM:       160         PIT 1 INFORMATION       Category of Pit:       C       Liner not required for Category: C       Pit Location F:       ALUVIAL         Type of Plt System:       CLOSED Closed System Means Steel Pits       Pit Location Formation:       ALUVIAL       Pit Location Formation:       ALUVIAL         Pit Location Nor optional water greater than 10th below base of pit?       Y       Within 1 mile of municipal water well?       N       Wetlinead Protection Area?       Pit Location Formation:       ALUVIAL         Pit Is       toca				
Pending CD Numbers:       No Pending       Working interest owners' notified:       DNA       Special Orders:       No Special         Total Depth:       12102       Ground Elevation:       1141       Surface Casing:       1500       Depth to base of Treatable Water-Bearing FM:       160         Under Federal Jurisdiction:       No       Approved Method for disposal of Drilling Fluids:       Deep surface casing has been approve         Under Federal Jurisdiction:       No       Approved Method for disposal of Drilling Fluids:       Deep surface casing has been approve         Under Federal Jurisdiction:       No       Approved Method for disposal of Drilling Fluids:       Deep surface casing has been approve         Surface Water used to Drill:       Yes       Yes       Closed SystemStreace       Deep surface casing has been approve         PIT 1 INFORMATION       Category of Pit:       C       Closed SystemStreace       Deep surface casing has been approve         Chorides Max:       State of yes       Category of Pit:       C       Liner not required for Category: C       Deep surface casing has been approve         Within 1 mile of municipal water well?       N       Wellhead Protection Area?       N       Pit Location is: ALLUVIAL       Pit Location Formation: ALLUVIAL         Pit       js       located in a Hydrologically Sensitive Area.       Dintection Area?	1 MORROW SUBTHRUST 402MRWST	11966		
Total Depti: 12102       Ground Elevation: 1141       Surface Casing: 1500       Depth to base of Treatable Water-Bearing FM: 160         Under Federal Jurisdiction: No       Deep surface casing has been approve         Fresh Water Supply Well Drilled: No       Surface Water used to Drill: Yes         PIT 1 INFORMATION       CLOSED Closed System Means Steel Pits         Type of Pit System: CLOSED Closed System Means Steel Pits       Category of Pit: C         Type of Pit System: WATER BASED       Pit Location Formation: ALLUVIAL         Choirdes Max: 5000 Average: 3000       Pit Location Formation: ALLUVIAL         Is depth to the of ground water greater than 10ft below base of pit? Y       Within 1 mile of municipal water well? N         Wellhead Protection Area? N       Pit         Pit       is         DIRECTIONAL HOLE 1         Section: 27       Township: 3N       Range: 5W	Spacing Orders: 731833	Location Exception Orders	No Exceptions	
Under Federal Jurisdiction: No       Deep surface casing has been approve         Fresh Water Supply Well Drilled: No       Surface Water supply Well Drilled: No         Surface Water used to Drill: Yes       One time land application (REQUIRES PERMIT) PERMIT NO: 23-39129         H. (Other)       CLOSED SYSTEM=STEEL PITS (REQUIRED - RUSH)         PIT 1 INFORMATION       Category of Pit: C         Type of Pit System: CLOSED Closed System Means Steel Pits       Category of Pit: C         Type of Nud System: WATER BASED       Category of Pit: C         Chlorides Max: 5000 Average: 3000       Pit Location for adletor formation: ALLUVIAL         Is depth to top of ground water greater than 10ft below base of pit? Y       Willhead Protection Area? N         Pit       is       located in a Hydrologically Sensitive Area.         DIRECTIONAL HOLE 1       Section: 27       Township: 3N       Range: 5W	Pending CD Numbers: No Pending	Pending CD Numbers: No Pending Working interest owners' notified: DNA Special Orders: No Special		
Under Federal Jurisdiction: No Fresh Water Supply Well Drilled: No Surface Water used to Drill: Yes PIT 1 INFORMATION PIT 1 INFORMATION CloseD SYSTEM=STEEL PITS (REQUIRED – RUSH (Cher) CloseD SYSTEM=STEEL PITS (REQUIRED – RUSH Category of Pit: C Liner not required for Category: C Pit Location is: ALLUVIAL Pit Location Formation: ALLUVIAL Pit Location Formation: ALLUVIUM DIRECTIONAL HOLE 1 Section: 27 Township: 3N Range: 5W Meridian: IM				
Fresh Water Supply Well Drilled: No       D. One time land application (REQUIRES PERMIT)       PERMIT NO: 23-39129         H. (Other)       CLOSED SYSTEM=STEEL PITS (REQUIRED – RUSH         PIT 1 INFORMATION       Category of Pit: C         Type of Pit System: CLOSED Closed System Means Steel Pits       Category of Pit: C         Type of Mud System: WATER BASED       Pit Location is: ALLUVIAL         Chlorides Max: 5000 Average: 3000       Pit Location Formation: ALLUVIAL         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         Pit       is         DIRECTIONAL HOLE 1         Section: 27       Township: 3N         Range: 5W       Meridian: IM			Deep surface casing has been approve	
Fresh Water Supply Well Drilled: No       D. One time land application (REQUIRES PERMIT)       PERMIT NO: 23-39129         H. (Other)       CLOSED SYSTEM=STEEL PITS (REQUIRED – RUSH         PIT 1 INFORMATION       Category of Pit: C         Type of Pit System: CLOSED Closed System Means Steel Pits       Category of Pit: C         Type of Mud System: WATER BASED       Pit Location is: ALLUVIAL         Chlorides Max: 5000 Average: 3000       Pit Location Formation: ALLUVIAL         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         Pit       is         DIRECTIONAL HOLE 1         Section: 27       Township: 3N         Range: 5W       Meridian: IM	Fresh Water Supply Well Drilled: No		Approved Method for disposal of Drilling Fluids:	
H. (Other)       CLOSED SVSTEM=STEEL PITS (REQUIRED – RUSH CREEK)         PIT 1 INFORMATION       Category of Pit: C         Type of Pit System: CLOSED Closed System Means Steel Pits       Category of Pit: C         Type of Mud System: WATER BASED       Pit Location is: ALLUVIAL         Chlorides Max: 5000 Average: 3000       Pit Location formation: ALLUVIUM         Is depth to top of ground water greater than 10ft below base of pit? Y       Pit Location Formation: ALLUVIUM         Wellhead Protection Area? N       Pit Location is: ALLUVIUM         Pit       is         DIRECTIONAL HOLE 1       Section: 27         Yow ship: 3N       Range: 5W			D. One time land application (REQUIRES PERMIT) PERMIT NO: 23-39129	
Type of Pit System: CLOSED_Closed System Means Steel Pits       Liner not required for Category: C         Type of Mud System: WATER BASED       Pit Location is: ALLUVIAL         Chlorides Max: 5000_Average: 3000       Pit Location Formation: ALLUVIUM         Is depth to top of ground water greater than 10ft below base of pit? Y       Pit Location Formation: ALLUVIUM         Wellhead Protection Area? N       Pit         Pit       is         Is cated in a Hydrologically Sensitive Area.       DIRECTIONAL HOLE 1         Section: 27       Township: 3N       Range: 5W       Meridian: IM				
Type of Mud System: WATER BASED       Pit Location is:       ALLUVIAL         Chlorides Max: 5000       Average: 3000       Pit Location Formation:       ALLUVIUM         Is depth to top of ground water greater than 10ft below base of pit?       Y       Y         Within 1 mile of municipal water well?       N       Y         Wellhead Protection Area?       N       Y         Pit       is       located in a Hydrologically Sensitive Area.       Y         DIRECTIONAL HOLE 1       Section:       27       Township: 3N       Range: 5W       Meridian: IM	PIT 1 INFORMATION		Category of Pit: C	
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 <u>is</u> located in a Hydrologically Sensitive Area. DIRECTIONAL HOLE 1 Section: 27 Township: 3N Range: 5W Meridian: IM	Type of Pit System: CLOSED Closed System Means Ste	eel Pits	Liner not required for Category: C	
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 js located in a Hydrologically Sensitive Area. DIRECTIONAL HOLE 1 Section: 27 Township: 3N Range: 5W Meridian: IM				
Within 1 mile of municipal water well? N         Wellhead Protection Area? N         Pit       is         located in a Hydrologically Sensitive Area.    DIRECTIONAL HOLE 1          Section: 27       Township: 3N       Range: 5W       Meridian: IM	•	(	Pit Location Formation: ALLUVIUM	
Wellhead Protection Area? N         Pit       is       located in a Hydrologically Sensitive Area.         DIRECTIONAL HOLE 1         Section: 27       Township: 3N       Range: 5W       Meridian: IM		fpit? Y		
Pit       is       located in a Hydrologically Sensitive Area.         DIRECTIONAL HOLE 1				
Section: 27 Township: 3N Range: 5W Meridian: IM				
Section: 27 Township: 3N Range: 5W Meridian: IM				
County: GRADY Measured Total Depth: 12102		Meridian: IM		
	County: GRADY		Measured Total Depth: 12102	
Spot Location of End Point: SW NE NW NW True Vertical Depth: 11966	Spot Location of End Point: SW NE NW	NW	True Vertical Depth: 11966	
Feet From: NORTH 1/4 Section Line: 494 End Point Location from	Feet From: NORTH 1/4 Sec	tion Line: 494		
Feet From:WEST1/4 Section Line:903Lease, Unit, or Property Line:494	Feet From: WEST 1/4 Sec	tion Line: 903	Lease, Unit, or Property Line: 494	

NOTES:

This permit does not address the right of entry or settlement of surface damages. The duration of this permit is 18 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
DEEP SURFACE CASING	[6/28/2023 - GE7] - APPROVED; (1) NOTIFY OCC FIELD INSPECTOR IMMEDIATELY OF ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON ANY CONDUCTOR OR SURFACE CASING. (2) SUBSEQUENT WELLS ON SAME PAD WILL NOT BE ALLOWED DEEP SURFACE CASING IN THE EVENT OF ANY LOSS OF CIRCULATION OR FAILURE TO CIRCULATE CEMENT TO SURFACE ON ANY CONDUCTOR OR SURFACE CASING.
HYDRAULIC FRACTURING	[6/28/2023 - GE7] - OCC 165:10-3-10 REQUIRES:
	1) NOTICE SHALL BE GIVEN AT LEAST 5 BUSINESS DAYS PRIOR TO COMMENCEMENT OF HYDRAULIC FRACTURING OPERATIONS ON A HORIZONTAL WELL TO OPERATORS PRODUCING WELLS WITHIN 1 MILE OF THE COMPLETION INTERVAL OF THE SUBJECT WELL. THE NOTICE TO SUCH OPERATORS SHALL CONTAIN THE INFORMATION IN FORM 6000NOO. IF THE HYDRAULIC FRACTURING OPERATIONS SCHEDULE CHANGES AFTER NOTICE HAS BEEN PROVIDED, RESULTING IN A DELAY OF OPERATIONS OF MORE THAN 5 DAYS FROM THE INITIAL NOTICE, NEW NOTICE IS REQUIRED TO BE GIVEN;
	2) NOTICE WILL BE GIVEN TO THE OCC CENTRAL OFFICE AND LOCAL DISTRICT OFFICES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF FRACTURING OPERATIONS. FORM 6000NHF SHALL BE FOUND HERE: HTTPS://OKLAHOMA.GOV/OCC/DIVISIONS/OIL-GAS/OGCD-FORMS; AND,
	3) THE CHEMICAL DISCLOSURE OF HYDRAULIC FRACTURING INGREDIENTS FOR ALL WELLS IS TO BE REPORTED TO FRACFOCUS WITHIN 60 DAYS AFTER THE CONCLUSION OF HYDRAULIC FRACTURING OPERATIONS, FOUND AT FRACFOCUS.ORG
SPACING - 731833	[6/28/2023 - G56] - (UNIT) W2 SW4 22 & NW4, SW4, W2 SE4 27-3N-5W EST CARTER KNOX SUBTHRUSTED MORROW OPERATING UNIT FOR MRWST