Form 3160-3
(June 2015)

OCD – HOBBS
06/29/2020
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC0029405B

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☑ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
NOSLER 24 FED PM [328511]
1H

2. Name of Operator
MACK ENERGY CORPORATION [13837]

9. API Well No. 30-025-47400

3a. Address
11344 Lovington HWY, Artesia, NM 88211

3b. Phone No. *(include area code)*
(575) 748-1288

10. Field and Pool, or Exploratory
FREN/GLORIETA-YESO [26770]

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface LOT 4 / 1320 FSL / 745 FWL / LAT 32.8165416 / LONG -103.8120573
At proposed prod. zone SWSW / 990 FSL / 1 FWL / LAT 32.8156178 / LONG -103.8316731

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 19/T17S/R32E/NMP

14. Distance in miles and direction from nearest town or post office*
4 miles

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
745 feet

16. No of acres in lease
1601.96

17. Spacing Unit dedicated to this well
160.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
503 feet

19. Proposed Depth
5384 feet / 11160 feet

20. BLM/BIA Bond No. in file
FED: NMB000286

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3915 feet

22. Approximate date work will start*
03/01/2020

23. Estimated duration
17 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	DEANA WEAVER / Ph: (575) 748-1288	12/10/2019

Title
Production Clerk

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575) 234-5959	06/24/2020

Title	Office
Assistant Field Manager Lands & Minerals	Carlsbad Field Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GCP Rec 06/29/2020

SL

APPROVED WITH CONDITIONS

KZ

07/08/2020

Approval Date: 06/24/2020

(Continued on page 2)

*(Instructions on page 2)

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Mack Energy Corporation**
LEASE NO.:	**NMLC0029405B**
WELL NAME & NO.:	**Nosler 24 Fed PM 1H**
SURFACE HOLE FOOTAGE:	**1320' FSL & 745' FWL**
BOTTOM HOLE FOOTAGE	**990' FSL & 1' FWL**
LOCATION:	**Section 19, T 17S, R 32E, NMPM**
COUNTY:	**Lea County, New Mexico**

Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☐ COM	☐ Unit

A. HYDROGEN SULFIDE

1. Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8"** surface casing shall be set at approximately **720'** (a minimum of 25' into the Rustler Anhydrite and above the salt) and cemented to surface.
   a. **If cement does not circulate to surface,** the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of **6 hours** after pumping cement, ideally between 8-10 hours after.
   b. WOC time for a primary cement job will be a minimum of **8 hours** or **500 psi** compressive strength, whichever is greater. This is to include the lead cement.
   c. If cement falls back, remedial cementing will be done prior to drilling out the shoe.
   d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.

2. The **9-5/8"** intermediate casing shall be set at approximately **1950' in the Yates formation** and cemented to surface.

   a. **If cement does not circulate to surface,** see B.1.a, c & d.

3. The **7" x 5.5"** production casing shall be cemented with at least **200' tie-back** into the previous casing. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.
3. Required safety valves, with appropriate wrenches and subs for the drill string being utilized, will be in the open position and accessible on the rig floor.

DR 06232020

GENERAL REQUIREMENTS

1. The BLM is to be notified in advance for a representative to witness:
   a. Spudding the well (minimum of 24 hours)
   b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
   c. BOP/BOPE tests (minimum of 4 hours)
      ☒ Eddy County: Call the Carlsbad Field Office, (575) 361-2822
      ☒ Lea County: Call the Hobbs Field Station, (575) 393-3612
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig:
      i. Notify the BLM when moving in and removing the Spudder Rig.
      ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      iii. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be available upon request. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the

following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well-specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On the portion of well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. If the operator has proposed a multi-bowl wellhead assembly in the APD, it must meet or exceed the pressure rating of the BOP system. Additionally, the following requirements must be met:
   a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
   b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
   c. Manufacturer representative shall install the test plug for the initial BOP test.
   d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
   e. Whenever any seal subject to test pressure is broken, all the tests in Onshore Order 2 III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the BOP/BOPE tests.
   a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
   b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test which can be initiated immediately after bumping the plug (only applies to single-stage cement jobs).
   c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be made available upon request.
   d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
   e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior

to the test at full stack pressure.

f. BOP/BOPE must be tested within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

1. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

1. All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.
2. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Nosler 24 PM, Plan 1

Operator	Mack Energy Corp	**Units**	feet, °/100ft	16:14 Thursday, November 21, 2019	Page 1 of 4
Field	Fren	**County**	Lea	**Vertical Section Azimuth**	270
Well Name	Nosler 24 PM	**State**	New Mexico	**Survey Calculation Method**	Minimum Curvature
Plan	1	**Country**	USA	**Database**	Access

Location	SL: 1320 FSL & 745 FWL Section 19-T17S-R32E BHL: 990 FSL & 1 FWL Section 24-T17S-R31E	**Map Zone**	UTM	**Lat Long Ref**	
Site		**Surface X**	2005405.8	**Surface Long**	
Slot Name	**UWI**	**Surface Y**	11913926.2	**Surface Lat**	
Well Number	1H **API**	**Surface Z**	3933.4	**Global Z Ref**	Mean Sea Level
Project	**MD/TVD Ref** KB	**Ground Level**	3915.4	**Local North Ref**	Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
*** TIE (at MD = 4525.00)										
4525.00	0.00	0.0	4525.00	0.00	0.00		0.00	2005405.80	11913926.20	-591.60
4550.00	0.00	0.0	4550.00	0.00	0.00	0.00	0.00	2005405.80	11913926.20	-616.60
4600.00	0.00	0.0	4600.00	0.00	0.00	0.00	0.00	2005405.80	11913926.20	-666.60
*** KOP 8 DEGREES (at MD = 4625.00)										
4625.00	0.00	0.0	4625.00	0.00	0.00	0.00	0.00	2005405.80	11913926.20	-691.60
4650.00	2.00	242.0	4649.99	-0.20	-0.39	8.00	0.39	2005405.41	11913926.00	-716.59
4700.00	6.00	242.0	4699.86	-1.84	-3.46	8.00	3.46	2005402.34	11913924.36	-766.46
4750.00	10.00	242.0	4749.37	-5.11	-9.61	8.00	9.61	2005396.19	11913921.09	-815.97
4800.00	14.00	242.0	4798.26	-9.99	-18.78	8.00	18.78	2005387.02	11913916.21	-864.86
4850.00	18.00	242.0	4846.32	-16.46	-30.95	8.00	30.95	2005374.85	11913909.74	-912.92
4900.00	22.00	242.0	4893.29	-24.48	-46.05	8.00	46.05	2005359.75	11913901.72	-959.89
4950.00	26.00	242.0	4938.96	-34.03	-64.00	8.00	64.00	2005341.80	11913892.17	-1005.56
5000.00	30.00	242.0	4983.10	-45.05	-84.72	8.00	84.72	2005321.08	11913881.15	-1049.70
5050.00	34.00	242.0	5025.49	-57.48	-108.11	8.00	108.11	2005297.69	11913868.72	-1092.09
5100.00	38.00	242.0	5065.94	-71.28	-134.05	8.00	134.05	2005271.75	11913854.92	-1132.54
5150.00	42.00	242.0	5104.23	-86.36	-162.43	8.00	162.43	2005243.37	11913839.84	-1170.83
5200.00	46.00	242.0	5140.19	-102.67	-193.09	8.00	193.09	2005212.71	11913823.53	-1206.79
5250.00	50.00	242.0	5173.64	-120.11	-225.89	8.00	225.89	2005179.91	11913806.09	-1240.24
5300.00	54.00	242.0	5204.42	-138.60	-260.67	8.00	260.67	2005145.13	11913787.60	-1271.02
5350.00	58.00	242.0	5232.37	-158.06	-297.26	8.00	297.26	2005108.54	11913768.14	-1298.97
*** 62 DEGREE TANGENT (at MD = 5400.00)										
5400.00	62.00	242.0	5257.36	-178.38	-335.49	8.00	335.49	2005070.31	11913747.82	-1323.96
5450.00	62.00	242.0	5280.84	-199.11	-374.47	0.00	374.47	2005031.33	11913727.09	-1347.44
5500.00	62.00	242.0	5304.31	-219.83	-413.45	0.00	413.45	2004992.35	11913706.37	-1370.91
5550.00	62.00	242.0	5327.79	-240.56	-452.43	0.00	452.43	2004953.37	11913685.64	-1394.39
*** 12 DEGREE BUILD (at MD = 5600.00)										
5600.00	62.00	242.0	5351.26	-261.29	-491.41	0.00	491.41	2004914.39	11913664.91	-1417.86
5650.00	66.10	246.9	5373.15	-280.64	-531.95	12.00	531.95	2004873.85	11913645.56	-1439.75
5700.00	70.34	251.4	5391.70	-297.12	-575.33	12.00	575.33	2004830.47	11913629.08	-1458.30
5750.00	74.69	255.8	5406.73	-310.55	-621.07	12.00	621.07	2004784.73	11913615.65	-1473.33
5800.00	79.12	259.9	5418.06	-320.77	-668.66	12.00	668.66	2004737.14	11913605.43	-1484.66
5850.00	83.61	264.0	5425.57	-327.68	-717.58	12.00	717.58	2004688.22	11913598.52	-1492.17
5900.00	88.12	267.9	5429.17	-331.19	-767.30	12.00	767.30	2004638.50	11913595.01	-1495.77
*** LANDING POINT (at MD = 5926.27)										
5926.27	90.50	270.0	5429.49	-331.67	-793.56	12.00	793.56	2004612.24	11913594.53	-1496.09
5950.00	90.50	270.0	5429.28	-331.67	-817.29	0.00	817.29	2004588.51	11913594.53	-1495.88
6000.00	90.50	270.0	5428.85	-331.67	-867.29	0.00	867.29	2004538.51	11913594.53	-1495.45
6050.00	90.50	270.0	5428.41	-331.67	-917.29	0.00	917.29	2004488.51	11913594.53	-1495.01

Nosler 24 PM, Plan 1

Operator	Mack Energy Corp	**Units**	feet, °/100ft	**Vertical Section Azimuth**	270
Field	Fren	**County**	Lea	**Survey Calculation Method**	Minimum Curvature
Well Name	Nosler 24 PM	**State**	New Mexico	**Database**	Access
Plan	1	**Country**	USA		

Location	SL: 1320 FSL & 745 FWL Section 19-T17S-R32E BHL: 990 FSL & 1 FWL Section 24-T17S-R31E	**Map Zone**	UTM	**Lat Long Ref**	
Site		**Surface X**	2005405.8	**Surface Long**	
Slot Name	**UWI**	**Surface Y**	11913926.2	**Surface Lat**	
Well Number	1H **API**	**Surface Z**	3933.4	**Global Z Ref**	Mean Sea Level
Project	**MD/TVD Ref** KB	**Ground Level**	3915.4	**Local North Ref**	Grid

DIRECTIONAL WELL PLAN

MD* ft	INC* deg	AZI* deg	TVD* ft	N* ft	E* ft	DLS* °/100ft	V. S.* ft	MapE* ft	MapN* ft	SysTVD* ft
6100.00	90.50	270.0	5427.97	-331.67	-967.29	0.00	967.29	2004438.51	11913594.53	-1494.57
6150.00	90.50	270.0	5427.54	-331.67	-1017.29	0.00	1017.29	2004388.51	11913594.53	-1494.14
6200.00	90.50	270.0	5427.10	-331.67	-1067.28	0.00	1067.28	2004338.52	11913594.53	-1493.70
6250.00	90.50	270.0	5426.67	-331.67	-1117.28	0.00	1117.28	2004288.52	11913594.53	-1493.27
6300.00	90.50	270.0	5426.23	-331.67	-1167.28	0.00	1167.28	2004238.52	11913594.53	-1492.83
6350.00	90.50	270.0	5425.79	-331.67	-1217.28	0.00	1217.28	2004188.52	11913594.53	-1492.39
6400.00	90.50	270.0	5425.36	-331.67	-1267.28	0.00	1267.28	2004138.52	11913594.53	-1491.96
6450.00	90.50	270.0	5424.92	-331.67	-1317.28	0.00	1317.28	2004088.52	11913594.53	-1491.52
6500.00	90.50	270.0	5424.48	-331.67	-1367.27	0.00	1367.27	2004038.53	11913594.53	-1491.08
6550.00	90.50	270.0	5424.05	-331.67	-1417.27	0.00	1417.27	2003988.53	11913594.53	-1490.65
6600.00	90.50	270.0	5423.61	-331.67	-1467.27	0.00	1467.27	2003938.53	11913594.53	-1490.21
6650.00	90.50	270.0	5423.18	-331.67	-1517.27	0.00	1517.27	2003888.53	11913594.53	-1489.78
6700.00	90.50	270.0	5422.74	-331.67	-1567.27	0.00	1567.27	2003838.53	11913594.53	-1489.34
6750.00	90.50	270.0	5422.30	-331.67	-1617.26	0.00	1617.26	2003788.54	11913594.53	-1488.90
6800.00	90.50	270.0	5421.87	-331.67	-1667.26	0.00	1667.26	2003738.54	11913594.53	-1488.47
6850.00	90.50	270.0	5421.43	-331.67	-1717.26	0.00	1717.26	2003688.54	11913594.53	-1488.03
6900.00	90.50	270.0	5420.99	-331.67	-1767.26	0.00	1767.26	2003638.54	11913594.53	-1487.59
6950.00	90.50	270.0	5420.56	-331.67	-1817.26	0.00	1817.26	2003588.54	11913594.53	-1487.16
7000.00	90.50	270.0	5420.12	-331.67	-1867.25	0.00	1867.25	2003538.55	11913594.53	-1486.72
7050.00	90.50	270.0	5419.68	-331.67	-1917.25	0.00	1917.25	2003488.55	11913594.53	-1486.28
7100.00	90.50	270.0	5419.25	-331.67	-1967.25	0.00	1967.25	2003438.55	11913594.53	-1485.85
7150.00	90.50	270.0	5418.81	-331.67	-2017.25	0.00	2017.25	2003388.55	11913594.53	-1485.41
7200.00	90.50	270.0	5418.38	-331.67	-2067.25	0.00	2067.25	2003338.55	11913594.53	-1484.98
7250.00	90.50	270.0	5417.94	-331.67	-2117.24	0.00	2117.24	2003288.56	11913594.53	-1484.54
7300.00	90.50	270.0	5417.50	-331.67	-2167.24	0.00	2167.24	2003238.56	11913594.53	-1484.10
7350.00	90.50	270.0	5417.07	-331.67	-2217.24	0.00	2217.24	2003188.56	11913594.53	-1483.67
7400.00	90.50	270.0	5416.63	-331.67	-2267.24	0.00	2267.24	2003138.56	11913594.53	-1483.23
7450.00	90.50	270.0	5416.19	-331.67	-2317.24	0.00	2317.24	2003088.56	11913594.53	-1482.79
7500.00	90.50	270.0	5415.76	-331.67	-2367.24	0.00	2367.24	2003038.56	11913594.53	-1482.36
7550.00	90.50	270.0	5415.32	-331.67	-2417.23	0.00	2417.23	2002988.57	11913594.53	-1481.92
7600.00	90.50	270.0	5414.88	-331.67	-2467.23	0.00	2467.23	2002938.57	11913594.53	-1481.48
7650.00	90.50	270.0	5414.45	-331.67	-2517.23	0.00	2517.23	2002888.57	11913594.53	-1481.05
7700.00	90.50	270.0	5414.01	-331.67	-2567.23	0.00	2567.23	2002838.57	11913594.53	-1480.61
7750.00	90.50	270.0	5413.58	-331.67	-2617.23	0.00	2617.23	2002788.57	11913594.53	-1480.18
7800.00	90.50	270.0	5413.14	-331.67	-2667.22	0.00	2667.22	2002738.58	11913594.53	-1479.74
7850.00	90.50	270.0	5412.70	-331.67	-2717.22	0.00	2717.22	2002688.58	11913594.53	-1479.30
7900.00	90.50	270.0	5412.27	-331.67	-2767.22	0.00	2767.22	2002638.58	11913594.53	-1478.87

Nosler 24 PM, Plan 1

Operator	Mack Energy Corp	**Units**	feet, °/100ft	**Vertical Section Azimuth**	270
Field	Fren	**County**	Lea	**Survey Calculation Method**	Minimum Curvature
Well Name	Nosler 24 PM	**State**	New Mexico	**Database**	Access
Plan	1	**Country**	USA		

Location	SL: 1320 FSL & 745 FWL Section 19-T17S-R32E BHL: 990 FSL & 1 FWL Section 24-T17S-R31E	**Map Zone**	UTM	**Lat Long Ref**	
Site		**Surface X**	2005405.8	**Surface Long**	
Slot Name	**UWI**	**Surface Y**	11913926.2	**Surface Lat**	
Well Number	1H **API**	**Surface Z**	3933.4	**Global Z Ref**	Mean Sea Level
Project	**MD/TVD Ref** KB	**Ground Level**	3915.4	**Local North Ref**	Grid

DIRECTIONAL WELL PLAN

MD* ft	INC* deg	AZI* deg	TVD* ft	N* ft	E* ft	DLS* °/100ft	V. S.* ft	MapE* ft	MapN* ft	SysTVD* ft
7950.00	90.50	270.0	5411.83	-331.67	-2817.22	0.00	2817.22	2002588.58	11913594.53	-1478.43
8000.00	90.50	270.0	5411.39	-331.67	-2867.22	0.00	2867.22	2002538.58	11913594.53	-1477.99
8050.00	90.50	270.0	5410.96	-331.67	-2917.21	0.00	2917.21	2002488.59	11913594.53	-1477.56
8100.00	90.50	270.0	5410.52	-331.67	-2967.21	0.00	2967.21	2002438.59	11913594.53	-1477.12
8150.00	90.50	270.0	5410.09	-331.67	-3017.21	0.00	3017.21	2002388.59	11913594.53	-1476.69
8200.00	90.50	270.0	5409.65	-331.67	-3067.21	0.00	3067.21	2002338.59	11913594.53	-1476.25
8250.00	90.50	270.0	5409.21	-331.67	-3117.21	0.00	3117.21	2002288.59	11913594.53	-1475.81
8300.00	90.50	270.0	5408.78	-331.67	-3167.20	0.00	3167.20	2002238.60	11913594.53	-1475.38
8350.00	90.50	270.0	5408.34	-331.67	-3217.20	0.00	3217.20	2002188.60	11913594.53	-1474.94
8400.00	90.50	270.0	5407.90	-331.67	-3267.20	0.00	3267.20	2002138.60	11913594.53	-1474.50
8450.00	90.50	270.0	5407.47	-331.67	-3317.20	0.00	3317.20	2002088.60	11913594.53	-1474.07
8500.00	90.50	270.0	5407.03	-331.67	-3367.20	0.00	3367.20	2002038.60	11913594.53	-1473.63
8550.00	90.50	270.0	5406.59	-331.67	-3417.20	0.00	3417.20	2001988.60	11913594.53	-1473.19
8600.00	90.50	270.0	5406.16	-331.67	-3467.19	0.00	3467.19	2001938.61	11913594.53	-1472.76
8650.00	90.50	270.0	5405.72	-331.67	-3517.19	0.00	3517.19	2001888.61	11913594.53	-1472.32
8700.00	90.50	270.0	5405.29	-331.67	-3567.19	0.00	3567.19	2001838.61	11913594.53	-1471.89
8750.00	90.50	270.0	5404.85	-331.67	-3617.19	0.00	3617.19	2001788.61	11913594.53	-1471.45
8800.00	90.50	270.0	5404.41	-331.67	-3667.19	0.00	3667.19	2001738.61	11913594.53	-1471.01
8850.00	90.50	270.0	5403.98	-331.67	-3717.18	0.00	3717.18	2001688.62	11913594.53	-1470.58
8900.00	90.50	270.0	5403.54	-331.67	-3767.18	0.00	3767.18	2001638.62	11913594.53	-1470.14
8950.00	90.50	270.0	5403.10	-331.67	-3817.18	0.00	3817.18	2001588.62	11913594.53	-1469.70
9000.00	90.50	270.0	5402.67	-331.67	-3867.18	0.00	3867.18	2001538.62	11913594.53	-1469.27
9050.00	90.50	270.0	5402.23	-331.67	-3917.18	0.00	3917.18	2001488.62	11913594.53	-1468.83
9100.00	90.50	270.0	5401.80	-331.67	-3967.17	0.00	3967.17	2001438.63	11913594.53	-1468.40
9150.00	90.50	270.0	5401.36	-331.67	-4017.17	0.00	4017.17	2001388.63	11913594.53	-1467.96
9200.00	90.50	270.0	5400.92	-331.67	-4067.17	0.00	4067.17	2001338.63	11913594.53	-1467.52
9250.00	90.50	270.0	5400.49	-331.67	-4117.17	0.00	4117.17	2001288.63	11913594.53	-1467.09
9300.00	90.50	270.0	5400.05	-331.67	-4167.17	0.00	4167.17	2001238.63	11913594.53	-1466.65
9350.00	90.50	270.0	5399.61	-331.67	-4217.16	0.00	4217.16	2001188.64	11913594.53	-1466.21
9400.00	90.50	270.0	5399.18	-331.67	-4267.16	0.00	4267.16	2001138.64	11913594.53	-1465.78
9450.00	90.50	270.0	5398.74	-331.67	-4317.16	0.00	4317.16	2001088.64	11913594.53	-1465.34
9500.00	90.50	270.0	5398.30	-331.67	-4367.16	0.00	4367.16	2001038.64	11913594.53	-1464.90
9550.00	90.50	270.0	5397.87	-331.67	-4417.16	0.00	4417.16	2000988.64	11913594.53	-1464.47
9600.00	90.50	270.0	5397.43	-331.67	-4467.16	0.00	4467.16	2000938.64	11913594.53	-1464.03
9650.00	90.50	270.0	5397.00	-331.67	-4517.15	0.00	4517.15	2000888.65	11913594.53	-1463.60
9700.00	90.50	270.0	5396.56	-331.67	-4567.15	0.00	4567.15	2000838.65	11913594.53	-1463.16
9750.00	90.50	270.0	5396.12	-331.67	-4617.15	0.00	4617.15	2000788.65	11913594.53	-1462.72

Nosler 24 PM, Plan 1

Operator	Mack Energy Corp	**Units**	feet, °/100ft		16:14 Thursday, November 21, 2019 Page 4 of 4
Field	Fren	**County**	Lea	**Vertical Section Azimuth**	270
Well Name	Nosler 24 PM	**State**	New Mexico	**Survey Calculation Method**	Minimum Curvature
Plan	1	**Country**	USA	**Database**	Access

Location	SL: 1320 FSL & 745 FWL Section 19-T17S-R32E BHL: 990 FSL & 1 FWL Section 24-T17S-R31E	**Map Zone**	UTM	**Lat Long Ref**	
Site			**Surface X** 2005405.8	**Surface Long**	
Slot Name		**UWI**	**Surface Y** 11913926.2	**Surface Lat**	
Well Number	1H	**API**	**Surface Z** 3933.4	**Global Z Ref**	Mean Sea Level
Project		**MD/TVD Ref** KB	**Ground Level** 3915.4	**Local North Ref**	Grid

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
9800.00	90.50	270.0	5395.69	-331.67	-4667.15	0.00	4667.15	2000738.65	11913594.53	-1462.29
9850.00	90.50	270.0	5395.25	-331.67	-4717.15	0.00	4717.15	2000688.65	11913594.53	-1461.85
9900.00	90.50	270.0	5394.81	-331.67	-4767.14	0.00	4767.14	2000638.66	11913594.53	-1461.41
9950.00	90.50	270.0	5394.38	-331.67	-4817.14	0.00	4817.14	2000588.66	11913594.53	-1460.98
10000.00	90.50	270.0	5393.94	-331.67	-4867.14	0.00	4867.14	2000538.66	11913594.53	-1460.54
10050.00	90.50	270.0	5393.50	-331.67	-4917.14	0.00	4917.14	2000488.66	11913594.53	-1460.10
10100.00	90.50	270.0	5393.07	-331.67	-4967.14	0.00	4967.14	2000438.66	11913594.53	-1459.67
10150.00	90.50	270.0	5392.63	-331.67	-5017.13	0.00	5017.13	2000388.67	11913594.53	-1459.23
10200.00	90.50	270.0	5392.20	-331.67	-5067.13	0.00	5067.13	2000338.67	11913594.53	-1458.80
10250.00	90.50	270.0	5391.76	-331.67	-5117.13	0.00	5117.13	2000288.67	11913594.53	-1458.36
10300.00	90.50	270.0	5391.32	-331.67	-5167.13	0.00	5167.13	2000238.67	11913594.53	-1457.92
10350.00	90.50	270.0	5390.89	-331.67	-5217.13	0.00	5217.13	2000188.67	11913594.53	-1457.49
10400.00	90.50	270.0	5390.45	-331.67	-5267.12	0.00	5267.12	2000138.68	11913594.53	-1457.05
10450.00	90.50	270.0	5390.01	-331.67	-5317.12	0.00	5317.12	2000088.68	11913594.53	-1456.61
10500.00	90.50	270.0	5389.58	-331.67	-5367.12	0.00	5367.12	2000038.68	11913594.53	-1456.18
10550.00	90.50	270.0	5389.14	-331.67	-5417.12	0.00	5417.12	1999988.68	11913594.53	-1455.74
10600.00	90.50	270.0	5388.71	-331.67	-5467.12	0.00	5467.12	1999938.68	11913594.53	-1455.31
10650.00	90.50	270.0	5388.27	-331.67	-5517.12	0.00	5517.12	1999888.68	11913594.53	-1454.87
10700.00	90.50	270.0	5387.83	-331.67	-5567.11	0.00	5567.11	1999838.69	11913594.53	-1454.43
10750.00	90.50	270.0	5387.40	-331.67	-5617.11	0.00	5617.11	1999788.69	11913594.53	-1454.00
10800.00	90.50	270.0	5386.96	-331.67	-5667.11	0.00	5667.11	1999738.69	11913594.53	-1453.56
10850.00	90.50	270.0	5386.52	-331.67	-5717.11	0.00	5717.11	1999688.69	11913594.53	-1453.12
10900.00	90.50	270.0	5386.09	-331.67	-5767.11	0.00	5767.11	1999638.69	11913594.53	-1452.69
10950.00	90.50	270.0	5385.65	-331.67	-5817.10	0.00	5817.10	1999588.70	11913594.53	-1452.25
11000.00	90.50	270.0	5385.21	-331.67	-5867.10	0.00	5867.10	1999538.70	11913594.53	-1451.81
11050.00	90.50	270.0	5384.78	-331.67	-5917.10	0.00	5917.10	1999488.70	11913594.53	-1451.38
11100.00	90.50	270.0	5384.34	-331.67	-5967.10	0.00	5967.10	1999438.70	11913594.53	-1450.94
11150.00	90.50	270.0	5383.91	-331.67	-6017.10	0.00	6017.10	1999388.70	11913594.53	-1450.51
*** TD (at MD = 11159.51)										
11159.51	90.50	270.0	5383.82	-331.67	-6026.61	0.00	6026.61	1999379.19	11913594.53	-1450.42

Attached to Form 3160-3
Mack Energy Corporation
Nosler 24 Fed PM #1H NMLC-0029405B
SHL : 1320 FSL & 745 FWL, Lot 4, Sec. 19 T17S R32E
BHL : 990 FSL & 1 FWL, SWSW, Sec. 24 T17S R31E
Lea County, NM

DRILLING PROGRAM

1. **Geologic Name of Surface Formation**

   Quaternary

2. **Estimated Tops of Important Geologic Markers:**

Anhydrite	623'
Salt	784'
Base of Salt	1815'
Yates	2003'
Seven Rivers	2333'
Queen	2938'
Grayburg	3314'
San Andres	3645'
Glorieta	5218'
Yeso	5309'

3. **Estimated Depths of Anticipated Fresh Water, Oil and Gas:**

Water Sand	150'	Fresh Water
Yates	2003	Oil/Gas
Seven Rivers	2333'	Oil/Gas
Queen	2938'	Oil/Gas
Grayburg	3314'	Oil/Gas
San Andres	3645'	Oil/Gas
Glorieta	5218'	Oil/Gas
Yeso	5309'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 720' and circulating cement back to surface will protect the surface fresh water sand. Salt section and shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them by cementing 5 ½" production casing, sufficient cement will be pumped to circulate back to surface.

4. **Casing Program:**

All Casing will be New API Approved Material
MW=10 PPG in Design Factor Calculations

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
17 1/2"	0-720'	13 3/8"	48#, J-55, ST&C, New, 2.05885/4.602156/4.74
12 ¼"	0-2350'	9 5/8"	36#, J-55, LT&C, New, 1.721904/6.413059/7.04

8 3/4"	0-5600'	7" 26#,L-80,LT&C, Buttress, New, 1.760469/2.460677/2.452442
8 ¾"	5600-11060'	5 ½" 17#, L-80, Buttress, New, 2.202633/2.683832/2.630613

5. Cement Program:

13 3/8" Surface Casing: Lead 500sx, Class C + 4%PF20+1% PF1+0.125#/skPF29+.4% PF 45, yld 1.73, wt 13.5 ppg, 9.116 gals/sx, excess 100%. Tail: 200sx, Class C+1% PF1, yld 1.34, wt 14.8 ppg, 6.307 gals/sx, excess 100%

9 5/8" Intermediate Casing: Lead 485sx Class C + 4% PF20+1% PF1+0.125#/skPF29+.4% PF 45, yld 1.72, wt 13.5 ppd, 9.102gal/sx, excess 100%. Tail: 200sx, Class C+.1% PF1, yld 1.34, wt 14.8 ppg, 6.307 gals/sx, excess 100%

7" & 5 ½" Production Casing: Stage 1-Tail: 1370sx, PVL+1.3% PF44(BWOW)+5% PF1 74+.5%PF506+0.1%PF153+.4# PF45 yld 1.48, wt 13 ppg, 7.57 gals/sx, excess 35%, Slurry Top 4,600', DV Tool @ 4,550'
Stage 2- Lead: 300sx, 35/65 Perlite/C 5% PF44+6%PF20+.2% PF13+3ppsPF 42+.4ppsPF45+.125ppsPF29 yld 1.82, wt 12.9, 7.57gals/sx, 35% excess, Slurry Top Surface Tail: 200sx, PVL+1.3% PF44(BWOW)+5% PF174+.5%PF506+0.1%PF153+.4# PF45, yld 14.8, wt 13.0, 7.57gals/sx, 35% excess. Slurry Top 3,000'.

6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #10 will consist of a double ram-type (3000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The 11" BOP will be nippled up on the 8 5/8" surface casing and tested by a 3rd party to 2000 psi used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with a minimum 2000 psi WP rating

7. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of fresh and cut brine mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-720'	Fresh Water	10	28	N.C.
720-2350'	Cut Brine	10	29	N.C.
2350-TD'	Cut Brine	9.2	29	N.C.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

8. Auxiliary Well Control and Monitoring Equipment:

A. Kelly cock will be kept in the drill string at all times.
B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

9. Logging, Testing and Coring Program:

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log from T.D. to 8 5/8 casing shoe.
B. Drill Stem test is not anticipated.
C. No conventional coring is anticipated.
D. Further testing procedures will be determined at TD.

10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 2828 psig (0.052*5429'TVD*9.2ppg) Less than 2900 Bottom Hole Pressure. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well; a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is March 1, 2020. Once commenced, the drilling operation should be finished in approximately 20 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

Attachment to Exhibit #10
NOTES REGARDING THE BLOWOUT PREVENTERS
Nosler 24 Fed PM 1H
Lea County, New Mexico

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.

2. Wear ring to be properly installed in head.

3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.

4. All fittings to be flanged.

5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.

6. All choke and fill lines to be securely anchored especially ends of choke lines.

7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.

8. Kelly cock on Kelly.

9. Extension wrenches and hands wheels to be properly installed.

10. Blow out preventer control to be located as close to driller's position as feasible.

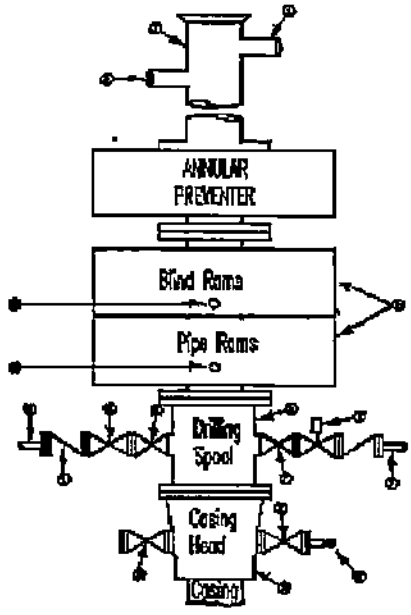
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

Mack Energy Corporation
Minimum Blowout Preventer Requirements
3000 psi Working Pressure

13 3/8 inch- 3 MWP
11 Inch - 3 MWP
EXHIBIT #10

Stack Requirements

NO.	Items	Min. I.D.	Min. Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram. (Altemate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"



OPTIONAL

16	Flanged Valve	1 13/16	

CONTRACTOR'S OPTION TO
CONTRACTOR'S OPTION TO FURNISH:

1. All equipment and connections above bradenhead or casinghead. Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casing head and side valves.
2. Wear bushing. If required.

10.

ME

GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service.
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans. Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.
5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use.
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations.

Mack Energy Corporation

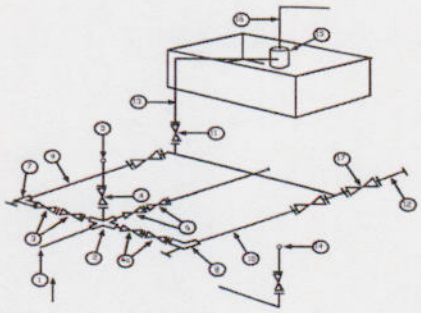
Exhibit #11

MIMIMUM CHOKE MANIFOLD

2,000, 5,000, and 10,000 PSI Working Pressure

3M will be used

2 MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

*** Location of separator optional**

Below Substructure

Mimimum requirements

No.		3,000 MWP			5,000 MWP			10,000 MWP		
		I.D.	Nominal	Rating	I.D.	Nominal	Rating	I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x5'			2' x5'			2' x5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

(1) Only one required in Class 2M

(2) Gate valves only shall be used for Class 10 M

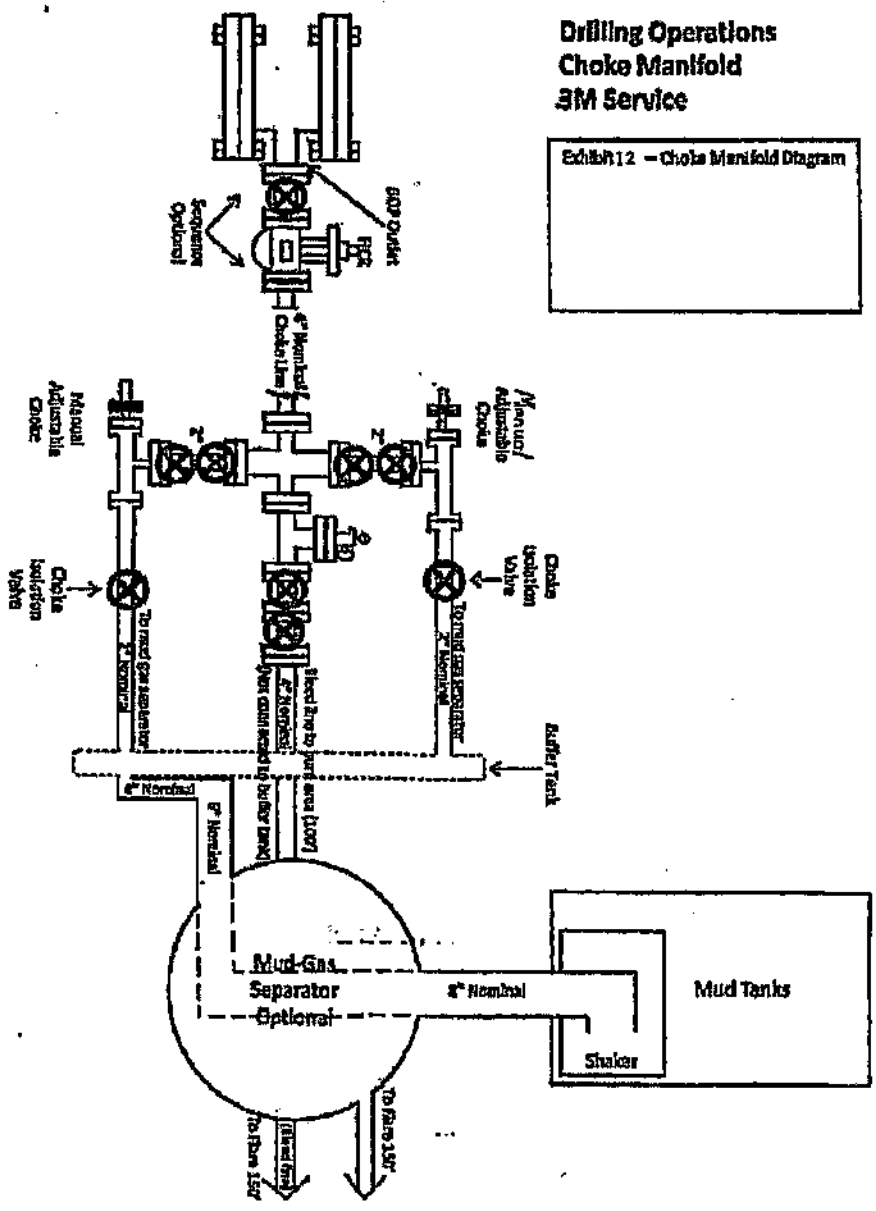
(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
2. All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
3. All lines shall be securely anchored.
4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
5. alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
6. Line from drilling spool to choke manifold should bee as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

Mack Energy Corporation

MANIFOLD SCHEMATIC
Exhibit #12



Attached to Form 3160-3
Mack Energy Corporation
Nosler 24 Fed PM #1H NMLC-0029405B
SHL : 1320 FSL & 745 FWL, Lot 4, Sec. 19 T17S R32E
BHL : 990 FSL & 1 FWL, SWSW, Sec. 24 T17S R31E
Lea County, NM

Mack Energy Corporation
Onshore Order #6
Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards an characteristics of hydrogen sulfide (H2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H2S detectors alarms warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubular are to be used, personnel well be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H2S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

1. **Well Control Equipment:**

   A. Flare line.
   B. Choke manifold.
   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
   D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. **Protective equipment for essential personnel:**

   A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. **H2S detection and monitoring equipment:**

   A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram (Exhibit #8).
   B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
   B. All elastomers used for packing and seals shall be H2S trim.

7. **Communication:**

   A. Radio communications in company vehicles including cellular telephone and 2-way radio.
   B. Land line (telephone) communication at Office.

8. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.

Attached to Form 3160-3
Mack Energy Corporation
Nosler 24 Fed PM #1H NMLC-0029405B
SHL : 1320 FSL & 745 FWL, Lot 4, Sec. 19 T17S R32E
BHL : 990 FSL & 1 FWL, SWSW, Sec. 24 T17S R31E
Lea County, NM

EXHIBIT #7

WARNING

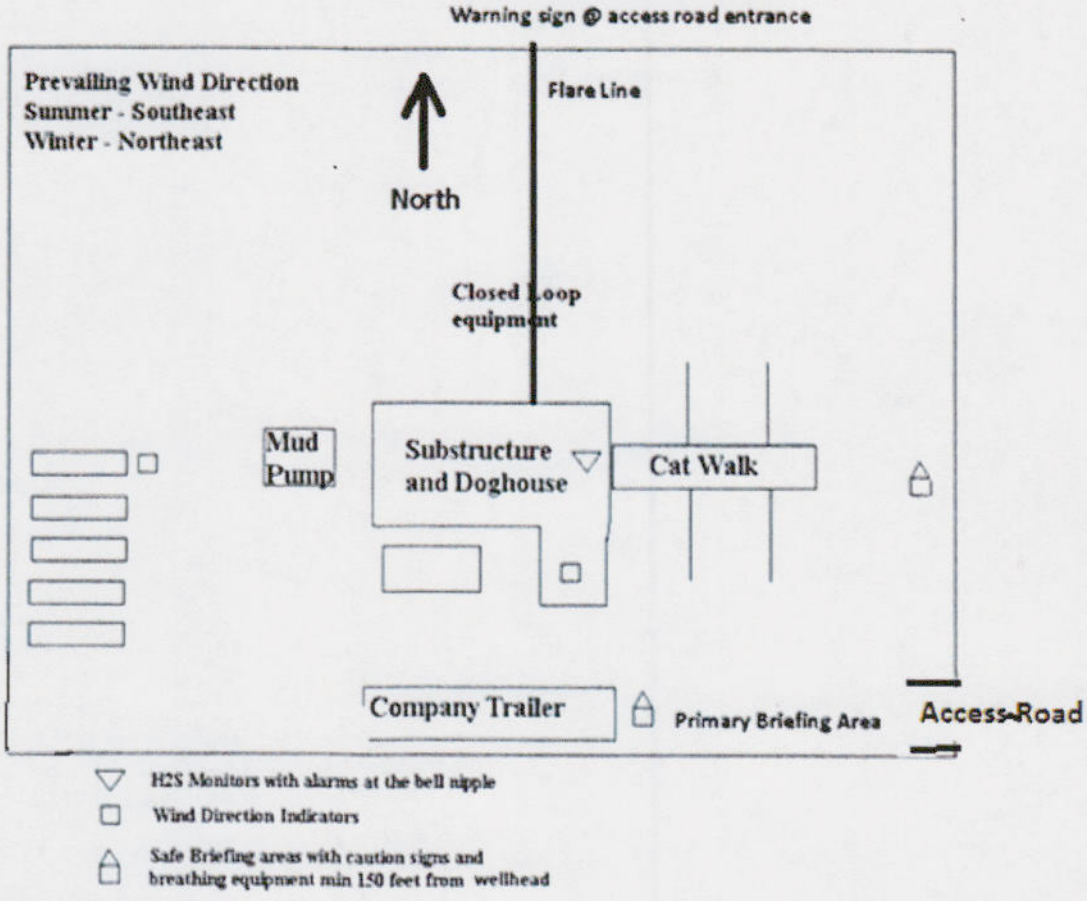
YOU ARE ENTERING AN H2S

AUTHORIZED PERSONNEL ONLY

1. BEARDS OR CONTACT LENSES NOT ALLOWED
2. HARD HATS REQUIRED
3. SMOKING IN DESIGNATED AREAS ONLY
4. BE WIND CONSCIOUS AT ALL TIMES
5. CHECK WITH MACK ENERGY FOREMAN AT OFFICE

MACK ENERGY CORPORATION

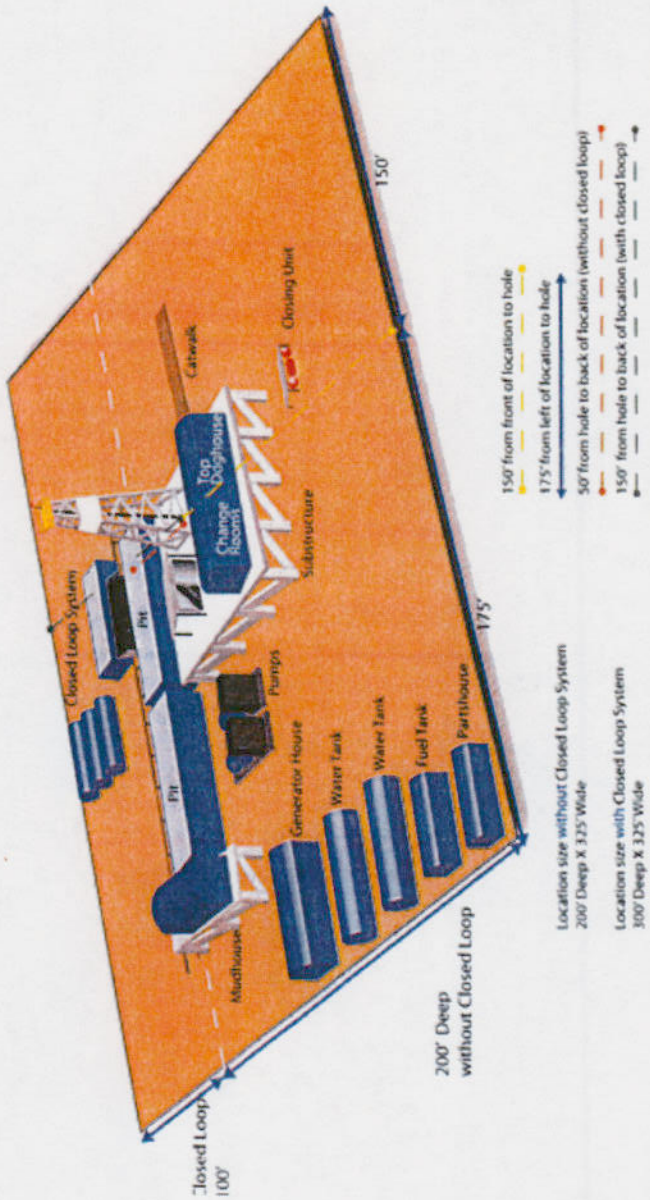
1-575-748-1288



B. There will be no drill stem testing.

DRILLING LOCATION H2S SAFTY EQUIPMENT
Exhibit # 8

Location Layout



Mack Energy Corporation Call List, Eddy County

Artesia (575)	Cellular	Office
Jim Krogman	432-934-1596	748-1288
Emilio Martinez	432-934-7586	748-1288

Agency Call List (575)

Artesia

State Police	746-2703
City Police	746-2703
Sheriff's Office	746-9888
Ambulance	911
Fire Department	746-2701
LEPC (Local Emergency Planning Committee	746-2122
NMOCD	748-1283

Carlsbad

State Police	885-3137
City Police	885-2111
Sheriff's Office	887-7551
Ambulance	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee	887-3798
Bureau of Land Management	887-6544
New Mexico Emergency Response Commission	(505)476-9690
24 Hour	(505)827-9126
Natonal Emergency Response Center (Washington)	(800)424-8802

Emergency Services

Boots & Coots IWC	1-800-256-9688 or (281)931-8884
Cudd pressure Control	(915)699-0139 or (915)563-3356
Halliburton	746-2757
Par Five	748-9539
Flight For Life-Lubbock, TX	(806)743-9911
Aerocare-Lubbock, TX	(806)747-8923
Med Flight Air Amb-Albuquerque, NM	(505)842-4433
Lifeguard Air Med Svc. Albuquerque, NM	(505)272-3115

SURFACE USE AND OPERATING PLAN

1. Existing Access Roads

A. All roads to the location are shown exhibit #6. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling well, will be done where necessary.

B. Directions to Location: From the Intersection of US Highway 82 and CR. 224 (Ripple Road) go Southeast on CR. 224 for approx. 0.9 of a mile, continue South on caliche lease road for approx. 0.38 of a mile, continue Southeast on caliche lease road for approx. 0.09 of a mile, veer Right and continue Southeast for approx. 0.30 of a mile to begin road survey, follow road survey approx. 87' to the Southeast pad corner for this location.

C. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

Exhibit #6

1. **Proposed Access Road:**

Vicinity Map shows this location with 4107.36' existing road and 87' new proposed road exiting Southeast corner of the pad; road are on BLM Land. Proposed upgrade of existing road will be done along staked centerline survey. Necessary maintenance will be done to insure traffic stays within the access road. The road has been constructed as follows:

A. The Maximum width of the running surface will be 14'. The road will be crowned and ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 3 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

B. The average grade will be less than 1%.

C. No turnouts are planned.

D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.

E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM approved caliche pit located Sec. 19 T15S R29E and Sec. 34 T15S R29E.

F. The access road as shown in Exhibit #6 is existing.

2. **Location of Existing Wells:**

Exhibit #16 shows all existing wells within a one-mile radius of this well.

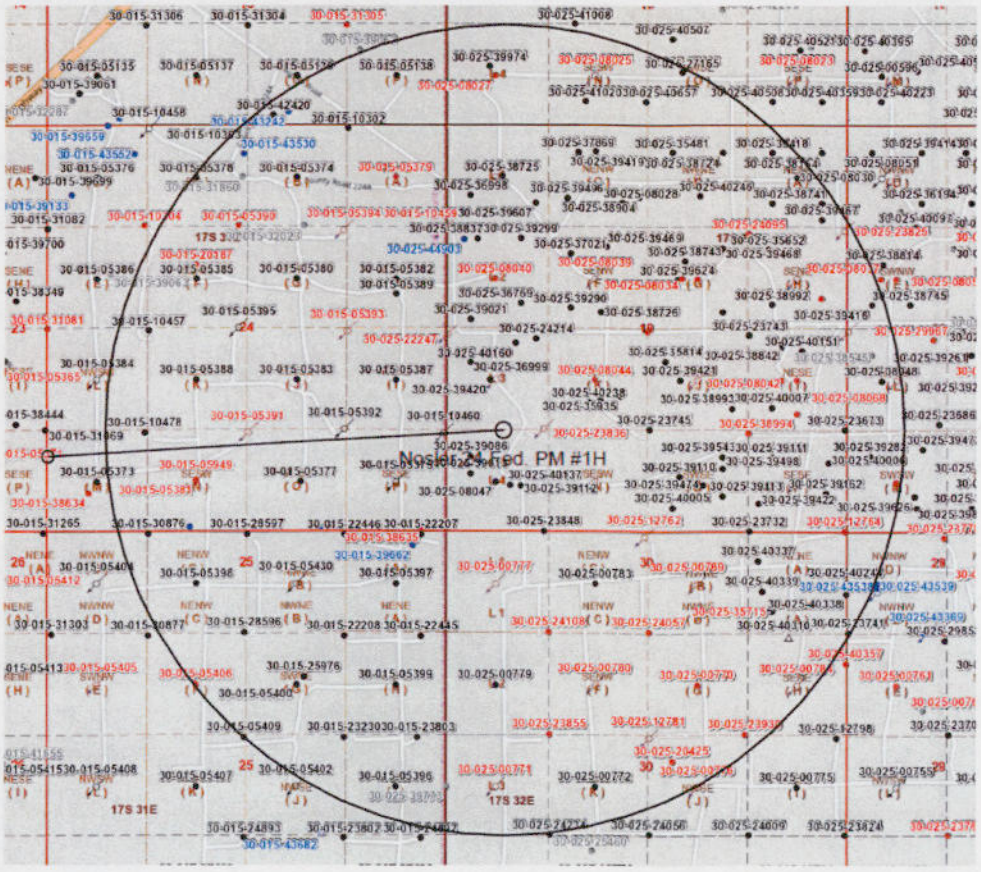
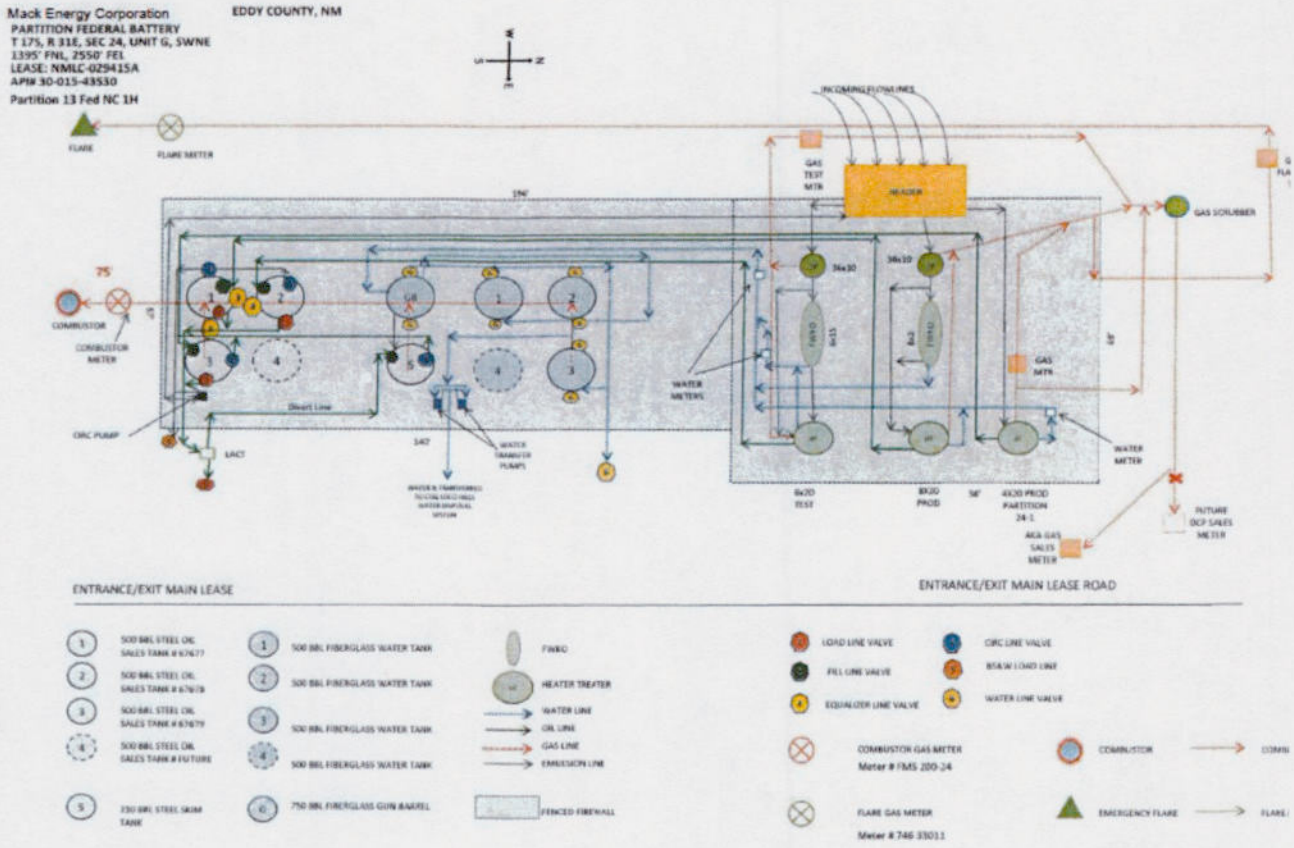


Exhibit #16

3. **Location of Existing and/or Proposed Facilities:**

A. Mack Energy Corporation will produce this well at the existing Partition Federal Tank Battery.
B. If the well is productive, facilities will be as follows: 1) Fren Glorieta Yeso Completion: Will be sent to the Existing Partition Federal Tank Battery located Sec 24 T17S R31E. See facility diagram attached
2) The existing tank battery and facilities including all flow lines and piping has be installed accoring to API specifications.
3) Any additional caliche will be obtained from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.
4) It will be necessary to run electric power if this well is productive. Power will be run by CVE and they will send in a separate plan for power
C. ONE Proposed flow line will tren North - Northwest corner of the pad, and will follow along the west side of the road to the Partition Federal Tanks Battery. See Plats attached
ONE Flowline will be a 4" Poly SDR 7 Surface line, 7515.06' in length with a 52# psi working pressure, 70# Max pressure, will transport production of Oil/ Gas / Water.
Length- 7515.06'
Route- Tren North - Northwest corner of the pad and will follow along west side of the road to the Partition Federal Tank Battery. See Plats attached
Material Composition- 4" Poly SDR 7
Width- 4"
Pressure- 52# psi working pressure, 70# max pressure
Transport- Production of Oil/Gas/Water
Type- Surface
How Many- ONE line
Ownership- All flowlines on BLM Land



4. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Exhibit #6. If a commercial fresh water source is nearby, fasline may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

5. Source of Construction Materials:

All caliche required will be obtained from BLM approved pit located at Sec. 19 T15S R29E and Sec. 34 T15S R29E.

6. Methods of Handling Waste:

A. Drill cuttings and fluids will be disposed into the steel tanks and hauled to R-360 disposal facility, permit number NM-01-0006. Located on Hwy 62 at MM 66.

B. Water produced from the well during completion may be disposed into a steel tank. After the well is permanently placed on production, produced water will be collected in tanks (fiberglass) and piped to Pronghorn SWD #1 NW/4 NE/4 Sec. 24 T19S R32E 330 FNL 1650 FEL, 30-025-32735; produced oil will be collected in steel tanks until sold.

C. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved local landfill. No toxic waste or hazardous chemicals will be produced by this operation.

D. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole only a dry hole marker will remain.

E. Sewage and Gray Water will be placed in container and hauled to a approved facility. Container and disposal handled by Black Hawk.

F. Drilling fluids will be contained in steel tanks using a closed loop system Exhibit #12. No pits will be used during drilling operations

7. Ancillary Facilities:

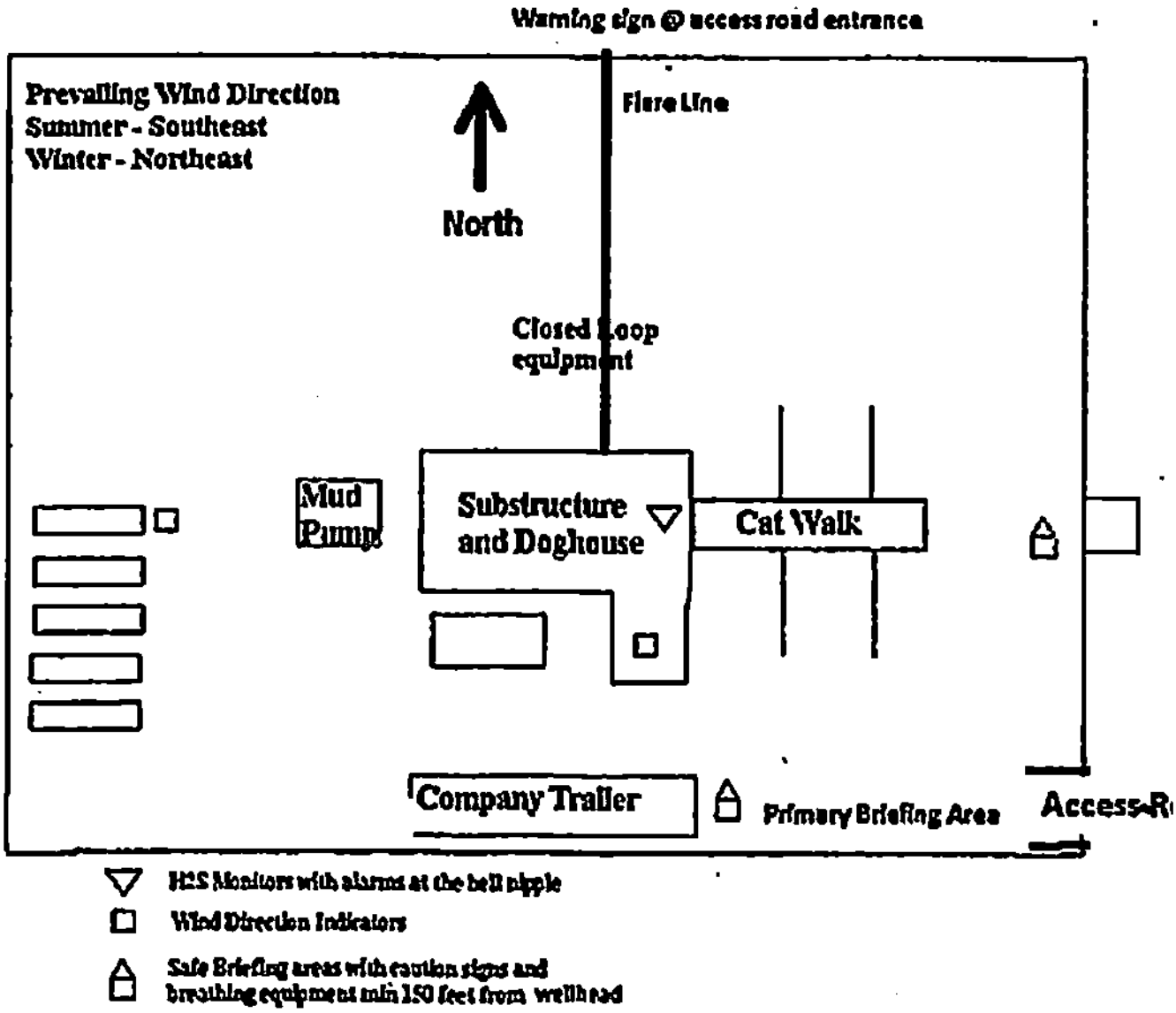
No airstrip, campsite or other facilities will be built as a result of the operation on this well.

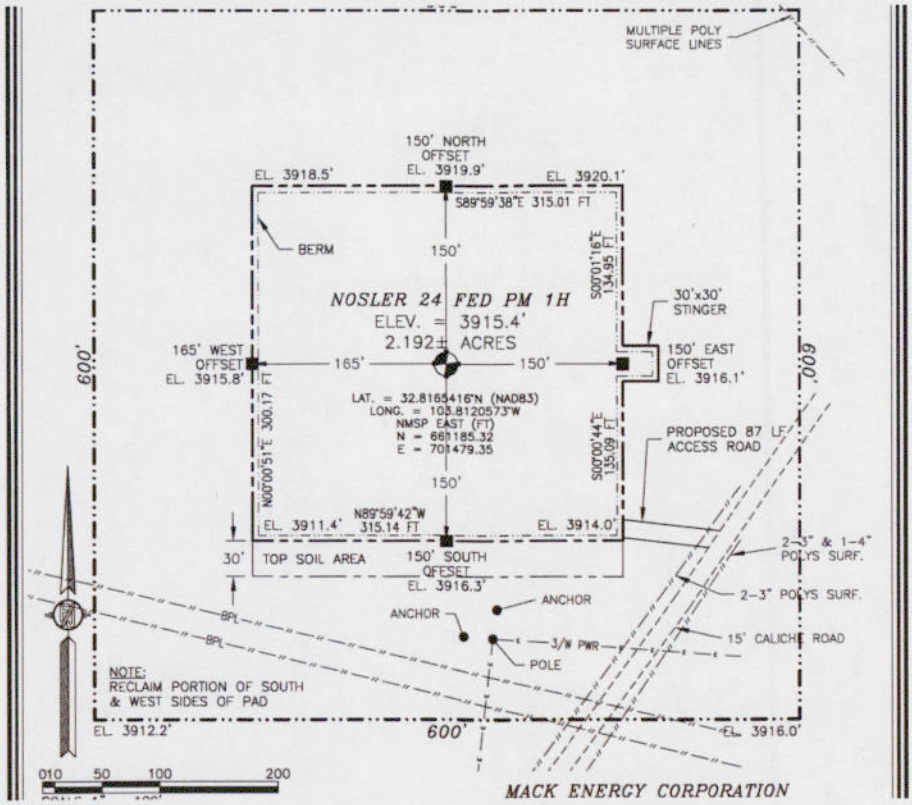
8. Well Site Layout:

A. The well site and elevation plat for the proposed well is shown in Exhibit #14. It was staked by Maddron Surveying, Carlsbad, NM.

B. The drill pad layout, with elevations staked by Maddron Surveying, is shown in Exhibit #14. Dimensions of the pad are shown. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.

C. Diagram below shows the proposed orientation of the location. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.


Warning sign @ access road entrance
Prevailing Wind Direction
Summer - Southeast
Winter - Northeast
North
Flare Line
Closed Loop
equipment
Mud
Pump
Substructure
and Doghouse
Cat Walk
Company Trailer
Primary Briefing Area
Access R
H2S Monitors with alarms at the bell nipple
Wind Direction Indicators
Safe Briefing areas with caution signs and
breathing equipment min 150 feet from wellhead



Exhibit# 14

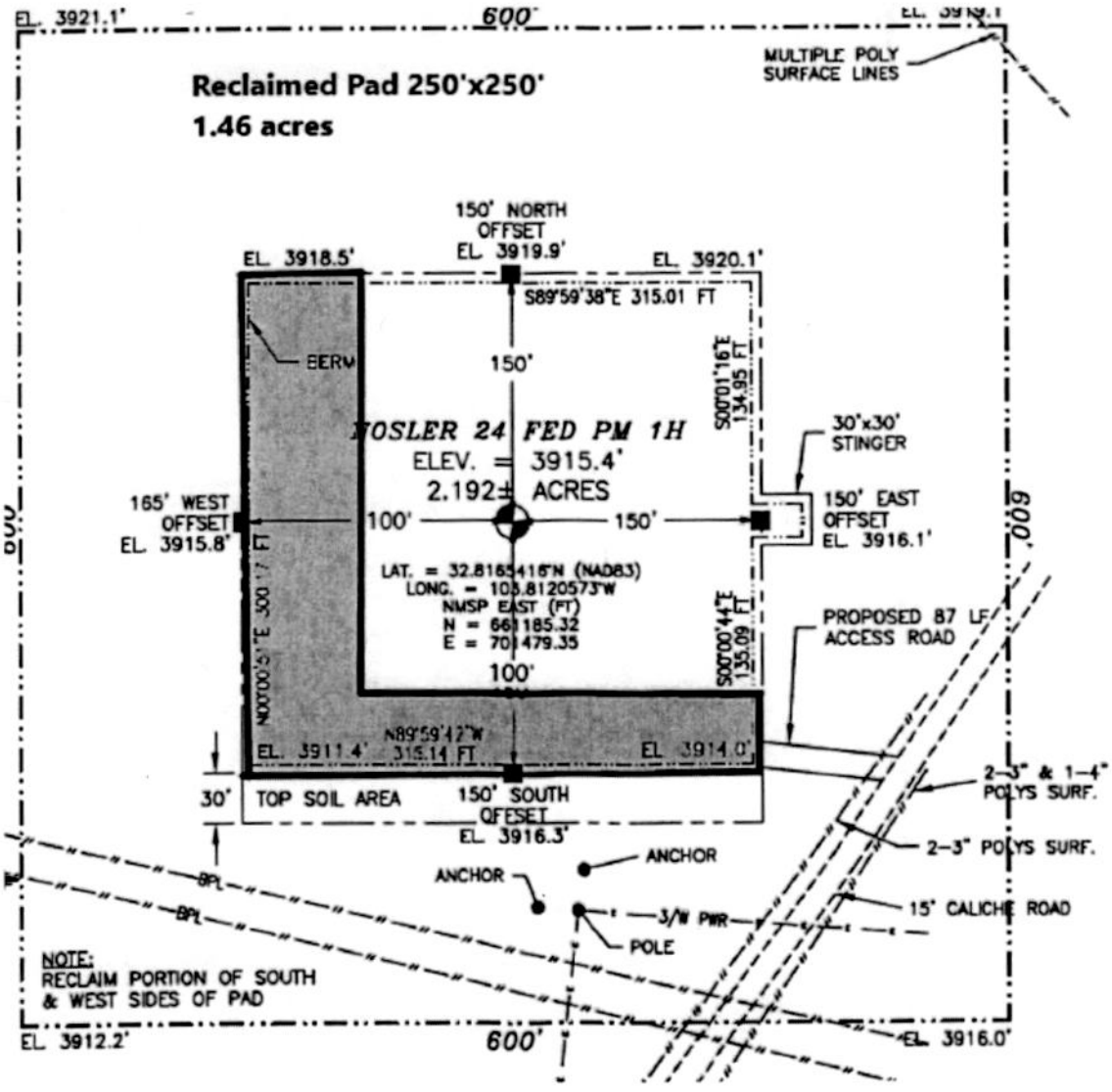
9. **Plans for Restoration of the Surface:**

A. Upon completion of the proposed operations, if the well is completed, any additional caliche required for facilities will be obtained from a BLM approved caliche pit.

B. Plans for interim and or final remediation:

1) Caliche will be removed, ground ripped and stockpiled topsoil used to recontoured as close as possible to the original natural level to prevent erosion and ponding of water.
2) Area will be reseeded as per BLM specifications. Seeding will be done when moisture is available and weather permitting. Pure live seed will be used to prevent noxious weeds. Annual inspection of growth will be done and necessary measures taken to eliminate noxious weeds.

C. Exhibit #15 below shows the proposed downsized well site after Interim Reclamation. Dimensions are estimates on present conditions and are subject to change. Reclaimed Pad to 250' x 250' 1.46acres on the South and West side of the pad.


Reclaimed Pad 250'x250'
1.46 acres
EL. 3921.1'
600'
MULTIPLE POLY SURFACE LINES
150' NORTH OFFSET EL. 3919.9'
EL. 3918.5'
EL. 3920.1'
S89°59'38"E 315.01 FT
BERM
150'
TOSLER 24 FED PM 1H
ELEV. = 3915.4'
2.192± ACRES
S00°01'16"E 134.95 FT
30'x30' STINGER
165' WEST OFFSET EL. 3915.8'
100'
150'
150' EAST OFFSET EL. 3916.1'
LAT. = 32.8165416°N (NAD83)
LONG. = 103.8120573°W
NMSP EAST (FT)
N = 661185.32
E = 701479.35
N00°00'51"E 300.17 FT
S00°00'44"E 135.09 FT
PROPOSED 87 LF ACCESS ROAD
100'
N89°59'42"W 315.14 FT
EL. 3911.4'
EL. 3914.0'
2-3" & 1-4" POLYS SURF.
30'
TOP SOIL AREA
150' SOUTH OFFSET EL. 3916.3'
2-3" POLYS SURF.
ANCHOR
ANCHOR
BPL
BPL
3/W PWR
15' CALICHE ROAD
POLE
NOTE:
RECLAIM PORTION OF SOUTH & WEST SIDES OF PAD
EL. 3912.2'
600'
EL. 3916.0'

10. Surface Ownership:

All lands are owned by the U.S. Government and administered by the BLM. The surface is multiple use with the primary use of the region for the production of oil and gas and the grazing of livestock.

11. Other Information:

A. The area around the well site is grassland and the topsoil is sandy. The vegetation is native scrub grass with sagebrush.

B. There is no permanent or live water in the immediate area.

C. A Cultural Resources Examination has been requested and will be forwarded to your office in the near future.

12. Lessee's and Operator's Representative:

The Mack Energy Corporation representative responsible for assuring compliance with the surface use plan is as follows:

Deana Weaver
Mack Energy Corporation
P.O. Box 960
Artesia, NM 88211-0960
Phone (575) 748-1288 (office)
dweaver@mec.com

APD CERTIFICATION

I hereby certify that I, or person under my direct supervision, have inspected the proposed drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Date: _____ **Signed:** Deana Weaver

Deana Weaver

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

OCD – HOBBS
06/29/2020
RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-47400	26770	Fren; Glorieta - Yeso

[4] Property Code	[5] Property Name	[6] Well Number
328511	NOSLER 24 FED PM	1H

[7] OGRID No.	[8] Operator Name	[9] Elevation
13837	MACK ENERGY CORPORATION	3915.4

[10] Surface Location

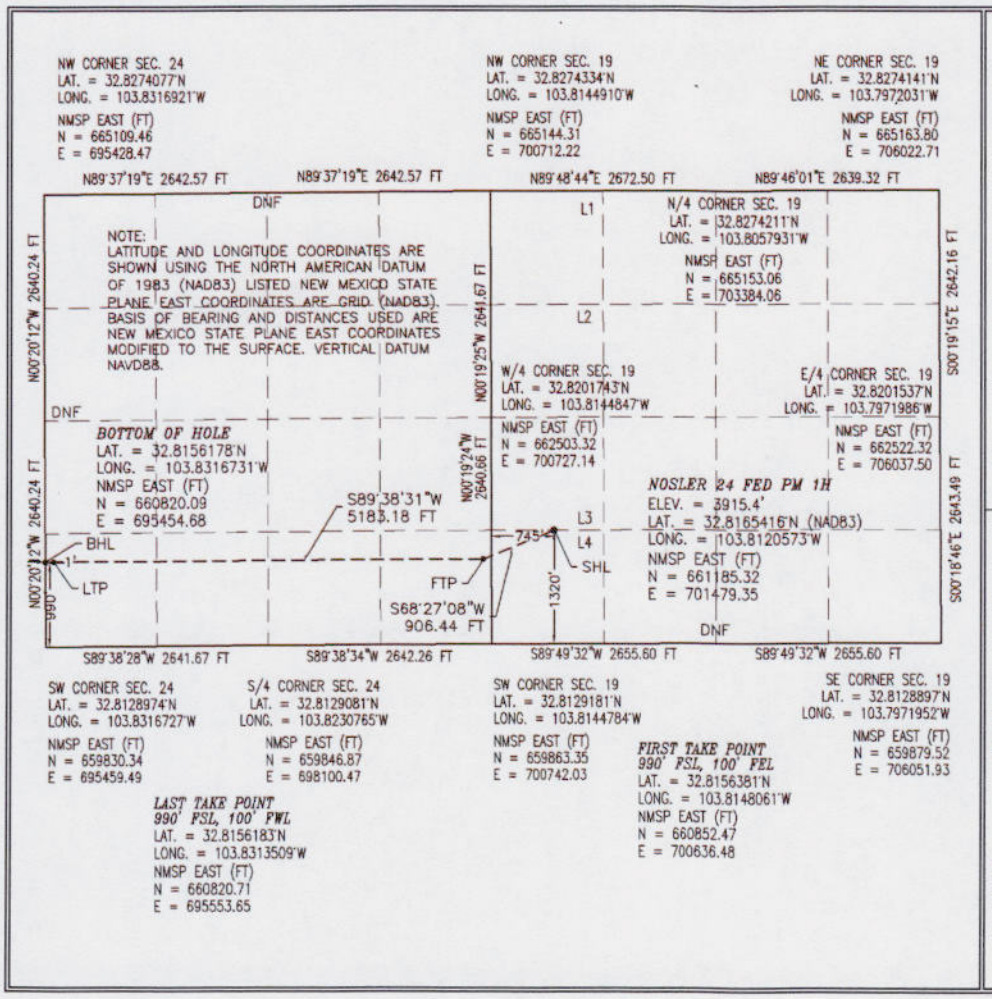
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	19	17 S	32 E		1320	SOUTH	745	WEST	LEA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	24	17 S	31 E		990	SOUTH	1	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Deana Weaver 2/12/20
Signature Date

Deana Weaver
Printed Name

dweaver@mec.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

NOVEMBER 11, 2019
Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: FILIMON F. JARAMILLO, PLS 12797

SURVEY NO. 7608B

Intent [XXXX] As Drilled [ ]

API # 30-025-47400		
Operator Name:	Property Name:	Well Number
MACK ENERGY CORPORATION	NOSLER 24 FED PM	1H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	19	17S	32E	4	1320	SOUTH	745	WEST	LEA
Latitude				Longitude				NAD	
32.8165416				103.8120573				83	

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
P	24	17S	31E		990	SOUTH	100	EAST	EDDY
Latitude				Longitude				NAD	
32.8156381				103.8148061				83	

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	24	17S	31E		990	SOUTH	100	WEST	EDDY
Latitude				Longitude				NAD	
32.8156183				103.8313509				83	

Is this well the defining well for the Horizontal Spacing Unit? [ ]

Is this well an infill well? [ ]

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #		
Operator Name:	Property Name:	Well Number

KZ 06/29/2018

1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 89210
District III
1000 Rio Brazos Road, Aztec, NM 874 1 0
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original to Appropriate District Office

OCD – HOBBS
06/29/2020
RECEIVED

GAS CAPTURE PLAN

Date: 12/5/2019

☒ Original
☐ Amended - Reason for Amendment: _____

Operator & OGRID No.: Mack Energy Corporation - 013837

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC)

Well(s)/Production Facility - Name of facility

The well(s) that will be located at the production facility are shown in the table below

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Nosler 24 Fed PM 1H	30-025-47400	Sec 19 T17S R32E	1320 FSL & 745 FWL	50		

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP Midstream and will be connected to DCP Midstream low/high pressure gathering system located in Chaves County, New Mexico. It will require 0 (existing) of pipeline to connect the facility to low/high pressure gathering system. Mack Energy Corporaiton provides (periodically) to DCP Midstream a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Mack Energy Corporaton and DCP Midstream have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP Midstream Linam Ranch Processing Plant located in Sec. 6, Twn. 19S, Rng. 37E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP Midstream system at that time. Based on current information, it is Mack Energy Corporation belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the Use Of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation - On lease
  Only a portion of gas is consumed operating the generator, remainder of gas will be flared

Compressed Natural Gas - On lease
Gas flared would be minimal, but might be uneconomical to operate when gas volume declines

NGL Removal - On lease
Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines