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Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

5. Lease Serial No.
NMNM 132953

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No.

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

8. Lease Name and Well No. (316013)
Duo Sonic 29 Federal #3H

2. Name of Operator Endurance Resources, LLC (270329)

9. API Well No.
30-025-43445

3a. Address 203 West Wall Suite 1000
Midland, Texas 79701

3b. Phone No. *(include area code)*
432-242-4680

10. Field and Pool, or Exploratory
WILD CAT; BONE SPRING (97088)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

UNORTHODOX LOCATION

At surface 150' FSL & 1980' FEL

At proposed prod. zone 330' FNL & 1980' FEL

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 29-25S-35E

14. Distance in miles and direction from nearest town or post office*
11 Miles West from Jal, NM

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) 150'	16. No. of acres in lease 640 ac	17. Spacing Unit dedicated to this well 160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2640'	19. Proposed Depth MD 16,953' TVD 12,401'	20. BLM/BIA Bond No. on file NMB001220
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3253.5 GL	22. Approximate date work will start* 12/01/2016	23. Estimated duration 45 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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 required by the BLM.

25. Signature Tinlee Tilton	Name *(Printed/Typed)* Tinlee Tilton	Date 03/09/2016
Title Engineer		
Approved by *(Signature)* /s/George MacDonell	Name *(Printed/Typed)*	Date SEP 27 2016
Title FIELD MANAGER	Office 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.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

KZ
10/03/16

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

ENDURANCE RESOURCES, LLC

Endurance Resources LLC

DRILLING & OPERATIONS PROGRAM

Duo Sonic 29 Federal 3H
SHL: 150' FSL & 1980' FEL (O)
BHL: 330' FNL & 1980' FEL (B)
Sec 29-25S-35E
Lea Co, NM

1. Geological Name of Surface Formation
   Permian

2. Estimated Tops of Important Geological Markers

Rustler	920'	
Top of Salt	1,258'	
Castile	3,760'	
Lamar	5,225'	
Bell Canyon	5,254'	Oil
Cherry Canyon	6,270'	Oil
Bone Spring	9,280'	Oil
1st Bone Spring	10,330'	Oil
2nd Bone Spring	10,600'	Oil
3rd Bone Spring	11,940'	Oil

   TVD: 12,401'; MD: 16,953'

3. Estimated Depths of Anticipated Fresh Water, Oil or Gas
   The estimated depths at which water, oil and gas will be encountered are as follows:
   Water: Average depth to water: 200'. Minimum depth: 0'. Max: 400'. As reported from the New Mexico Office of the State Engineer website.

   Oil & Gas: 5,254' – 12,401' (Bell Canyon to 3rd Bone Spring)
   No other formations are expected to give up oil, gas, or fresh water in measurable quantities.

ENDURANCE RESOURCES, LLC

5.Proposed Casing Program:

Casing	Hole Size	Interval	Casing OD	Casing Interval	Weight	Collar	Grade
Surface	17.5"	0'-970' 1030	13.375"	0'-970' 1030	54.5#	STC	J-55
Intermediate I	12.25"	970'-9,380'	9.625"	970'-5,400'	40#	LTC	HCL-80
Intermediate II	12.25"	1030 970'-9,380'	9.625"	5,400'-9,380'	43.5#	LTC	HCL-80
Production	8.5"	9,380'-TD	5.5"	0'-16,953'	20#	BTC	HCP-110

See COA

Casing	Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
Surface	13.375"	2.49	6.04	16.14
Intermediate	9.625" (HCL-80)	1.48	2.20	4.24
Intermediate	9.625" (HCL-80)	1.20	1.30	2.29
Production	5.5" (HCP-110)	2.10	2.18	1.89

NOTE: ALL CASING IS NEW & API APPROVED. WHILE RUNNING CASING, PIPE WILL BE KEPT A MINIMUM OF 1/3 FULL AT ALL TIMES TO AVOID APPROACHING COLLAPSE PRESSURE OF THE CASING. SURFACE CASING WILL BE WATCHED & NECESSARY ADJUSTMENTS MADE TO ENSURE PIPE IF FULL DUE TO LOST CIRCULATION ZONES THAT MAY OCCUR. CENTRALIZERS WILL BE USED ON SURFACE CASING

4. Proposed Cement Program:

Casing / Wellbore Description: Surface - 13 3/8" x 17 1/2" (54# / J-55 / BTC)					
Stage	*Slurry Description*	*Weight (ppg)*	*Yield ($ft.^3/sk$)*	*Sacks*	*% Excess*
Lead	EXTENDACEM - CZ	13.7	1.694	550	100
Tail	HALCEM - Class C	14.8	1.326	355	100
Casing / Wellbore Description: Intermediate 9 5/8" x 12 1/4" (40# / HCL-80 /BTC, 43.5# / HCP-110 / BTC)					
Stage	*Slurry Description*	*Weight*	*Yield*	*Sacks*	*% Excess*
Lead	TUNED LIGHT - Class C	9.0	3.556	1105	50 (OH)
Tail	VERSACEM - Class H, 0.3% Super CBL, 0.2% Halad-9, 0.2% HR-800	14.4	1.247	380	50 (OH)
Casing / Wellbore Description: Production 5 1/2" x 8 1/2" (20# / HCP-110 / BTC)					
Stage	*Slurry Description*	*Weight*	*Yield*	*Sacks*	*% Excess*
Lead	VERSACEM - Class H, 10% Bentonite, 5% Cal-Seal 60 0.1% Fe-2, 0.25 lbm D-Air 5000	11.5	2.672	1170	15 (OH)
Tail	SOLUCEM - Class H, 0.25 lbm D - AIR 5000, 0.8 % HR-601	15	2.625	375	15 (OH)

NOTE: THE ABOVE CEMENT VOLUMES COULD BE REVISED PENDING FLUID CALIPER & CALIPER LOG DATA. ALL VOLUMES ARE DESIGNED TO CIRCULATE TO SURFACE. PRODUCTION CEMENT WILL BE CIRCULATED TO AT LEAST 200' ABOVE INTERMEDIATE CASING SHOE.

ENDURANCE
RESOURCES, LLC

5. Minimum Specifications for Pressure Control:

The system used for the intermediate (12.25" hole) and production (8.5" hole) will consist of a 13-5/8 (~~10~~5M) working pressure BOP system consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer (please see BOP schematic). A 5M choke manifold & 120 gallon accumulator with floor and remote operating stations & auxiliary power system. Rotating head as needed. ~~A~~ KC will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

upper + lower

BOP unit will be hydraulically operated. BOP will be NU and operated at least once a day while drilling and the blind rams will be operated when out of the hole during trips. From the base of the 13-3/8" csg through running of production casing, the well will be equipped with a 10M BOP system and HCR valve, remote kill line, & annular to match. The remote kill line will be installed prior to testing the system & tested to stack pressure.

Before drilling out of the 13-3/8 surface casing, BOP will be tested by an independent surface company to 250 psi low & 5000 psi high. Annular Preventer will be tested to 250 psi low and ~~1~~2500 psi high. Before drilling out the 9-5/8 intermediate shoe BOP will be tested by an independent service company to 250psi low and 5000 psi high. Annular Preventer will be tested to 250 psi low and 2500 psi high. These low pressure tests from 250 to 300 psi will be held a minimum of 10 minutes if test is done with a test plug or 30 minutes if conducted without a test plug. ~~Annular Preventer will be tested to 250 psi low and 2500 psi high. These low pressure tests from 250 to 300 psi will be held a minimum of 10 minutes if test is done with a test plug or 30 minutes if conducted without a test plug.~~

6. Estimated BHP:
5,581 psi @ 11,000' TVD

ENDURANCE
RESOURCES, LLC

7. Mud Program: The applicable depths & properties of this system are as follows:

Depth	Type of System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0 – ~~970'~~ 1030	Fresh	8.4 – 9.4	32-34	NC
~~970'~~ – 9,380'	OBM	9.0 – 9.2	55-65	<10
9,380' - TD	Cut Brine	8.3 – 9.3	28-32	NC-12

NOTE: NECESSARY MUD PRODUCTS FOR WEIGHT ADDITION & FLUID LOSS WILL BE ON LOCATION AT ALL TIMES. VISUAL MUD MONITORING EQUIPMENT (I.E. TRIP TANK) WILL BE IN PLACE TO DETECT VOLUME CHANGES INDICATING LOSS OR GAIN OF CIRCULATION VOLUME WITH ALARMS.

8. Auxiliary Well Control & Monitoring Equipment:
   a. ~~A~~ KC will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times
   c. H_2S detection equipment will be in operation & breathing apparatuses will be on location after the drill out of the 13-3/8" casing shoe until the 5-1/2" casing in cemented.

upper & lower

9. Testing, Logging & Coring Program:
   a. No drill stem tests are planned.
   b. GR/N well log ran from KOP to surface.
   c. No open hole logs will be run.

10. Potential Hazards:
No abnormal pressures or temperatures are expected. If H_2S is encountered, Endurance Resources LLC will comply with Onshore Order #6. Regardless, all personnel will be trained & qualified with H_2S safety. Rig safety equipment will all also be checked daily once drill out of the 13-3/8" casing shoe to TD. It has been noted that H_2S has been encountered in the salt section. If H_2S is encountered, measurements & formations will be reported to the BLM.

11. Anticipated starting date & Duration of Operations:
Road & location construction will begin after the BLM has approved the APD. Anticipated spud date will begin after BLM approval & after a drilling rig is secured. Move in operations & drilling is expected to take no more than 45 days. An additional 30-50 days will be needed to complete this well & construct surface facilities and/or lay flow lines in order to place well on production.