

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs
HOBBS OCD

AUG 06 2018

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

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

RECEIVED

5. Lease Serial No. NM-058678
Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other Natural Gas Storage		7. If Unit of CA/Agreement, Name and/or No. 14-08-0001014277 (NMNM70953X)
2. Name of Operator Enstor Grama Ridge Storage and Transportation, LLC		8. Well Name and No. GRM UNIT #4
3a. Address 20329 State Hwy 249, Suite 500 Houston, TX 77070	3b. Phone No. (include area code) (281) 374-3050	9. API Well No. 30-025-21334 ✓
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 2310' FNL and 2310' FWL of Section 4, Township 22S, Range 34E		10. Field and Pool or Exploratory Area Morrow Formation, Grama Ridge
		11. Country or Parish, State Lea County, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resu	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	
	<input type="checkbox"/> Change Plans	<input checked="" type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

INT TO PA Am
P&A NR
P&A R

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

GRM UNIT #4 failed the 2017 NMOCD Bradenhead test because of communication between the tubing and production casing annulus. As a result of the failed test, the well was immediately shut-in. After review, it was determined that the well will be plugged and abandoned due to age, cost to repair, and low deliverability (See attached Plugging Procedure and Schematics).

BLM Form 3160-5 Notice of Intent was approved on 1/23/18; however, after further review it was determined the plugging procedure was operationally risky and unsound. This "Amended" P&A procedure is more operationally sound and has already been informally reviewed by the BLM. The estimated completion date for this project is December 2018. This P&A has been included in the 2018 Plan of Operations.

*Please note that well will remain shut-in until P&A

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Below ground level dry hole marker required

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Nick Nicodemus		Director, Land & Regulatory Affairs	
Signature <u>[Signature]</u>		Date 07/05/2018	

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by <u>[Signature]</u>	Title <u>Supv. AGT</u>	Date <u>7-18-18</u>
Conditions of approval, if any, are attached. Approval of this notice 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.		
Office <u>Carlsbad</u>		

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.

FOR RECORD ONLY
NMOCD 08/07/2018

GRAMA RIDGE WELL 4

P&A Procedure

6-29-2018

1. Perforate the 3-1/2" tubing at approximately 12,775'.
2. Circulate and kill the well with 10 ppg drilling fluid (mud) through the perforations at 12,775'.
3. Cut the 3-1/2" tubing at approximately 12,750'.
4. Pull and lay down the 5-1/2" x 3-1/2" tubing.
5. Set a 5-1/2" bridge plug or cement retainer at approximately 12,725'.
6. Fill the 5-1/2" and 7-5/8" wellbore with cement from 12,725' to 11,200'.
7. Wait on cement at least 4 hours and tag the top of cement
8. Perforate 7-5/8" casing at 8,400'.
9. Squeeze cement in the perforations and fill the 7-5/8" wellbore from 8,400' to 8,220'.
10. Wait on cement at least 4 hours and tag the top of cement
11. Perforate 7-5/8" casing at 5,811'.
12. Squeeze cement in the perforations and fill the 7-5/8" wellbore from 5,811' to 5,560'.
13. Wait on cement at least 4 hours and tag the top of cement
14. Perforate 7-5/8" and 10-3/4" casings at 3,964'.
15. Squeeze cement in the perforations and fill the 7-5/8" wellbore from 3,964' to 3,824'.
16. Wait on cement at least 4 hours and tag the top of cement
17. Perforate 7-5/8" and 10-3/4" casings at 1,800'.
18. Squeeze cement in the perforations and fill the 7-5/8" wellbore from 1,800' to 1,600'.
19. Wait on cement at least 4 hours and tag the top of cement
20. Perforate 7-5/8" casing at 380'.
21. Squeeze cement in the perforations and fill the 7-5/8" x 10-3/4" annulus and 7-5/8" wellbore from 380' to 5' below ground level.
22. Wait on cement at least 4 hours and tag the top of cement
23. Cut the 7-5/8" and 10-3/4" casings below ground level.
24. Install a permanent abandonment marker.

Enstor

Field: Grama Ridge Morrow

WELL 04

Lease/County: GR State/Lea County

DATE 6/29/2018

Location: F Unit, Section 4, Township 22S, Range 34E

API #: 30-025-21334

DRAWING STATUS

Proposed P&A

DRAWING BY

CAL

Cut off casing below ground level and install a dry hole marker

Perforate 7-5/8" csg @ 380' MD
Squeeze perforations and fill 7-5/8" x 10-3/4" annulus and the wellbore from 380' - 5' BGL MD.

Perforate 7-5/8" and 10-3/4" csg @ 1,800' MD
Squeeze perforations and fill the wellbore with cement from 1,800' - 1,600' MD.

Perforate 7-5/8" and 10-3/4" csg @ 3,964' MD
Squeeze perforations and fill the wellbore with cement from 3,964' - 3,824' MD.

Perforate 7-5/8" csg at 5,811' MD
Squeeze perforations and fill wellbore with cement from 5,811' - 5,560' MD

Perforate 7-5/8" csg at 8,400'
Squeeze perforations and fill wellbore with cement from 8,400' to 8,220' MD.

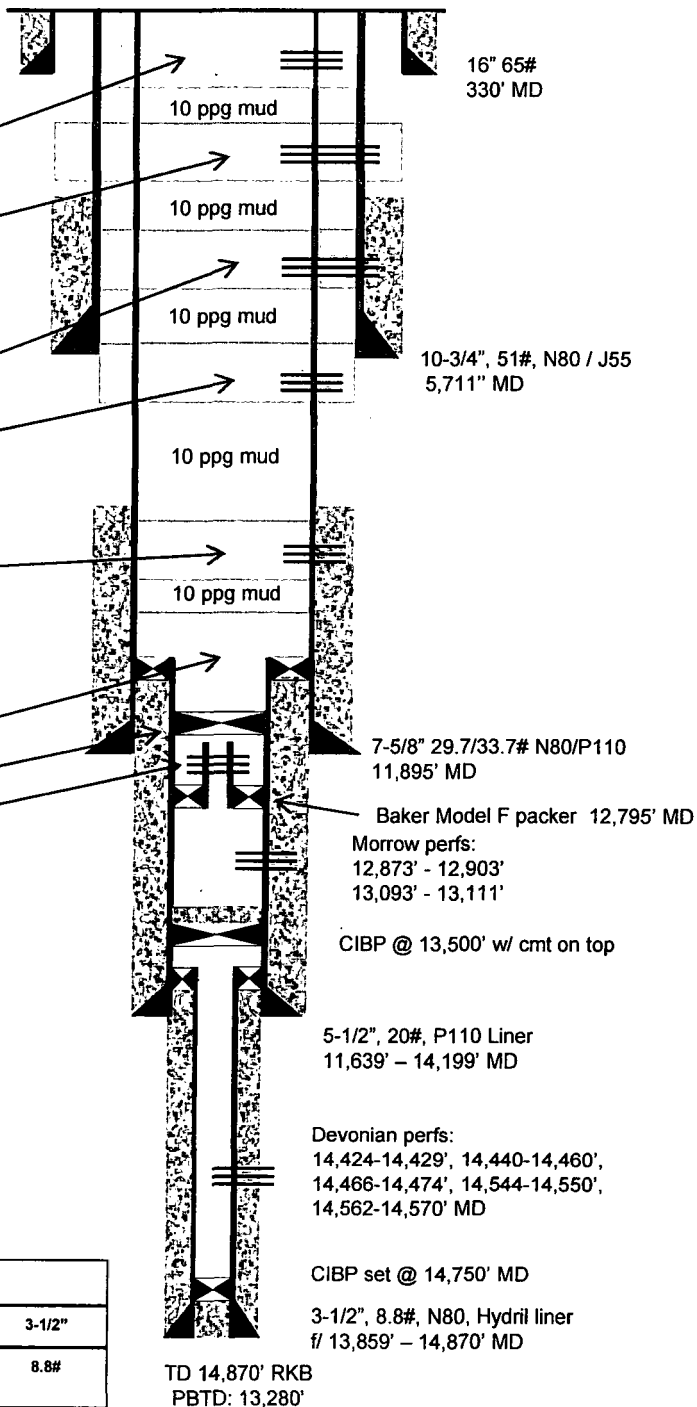
Fill wellbore with cement to from 12,725' to 11,200' MD

5-1/2" bridge plug or retainer set at +/- 12,725' MD

3-1/2" tubing cut off at +/- 12,750' MD
3-1/2" tubing perforated at 12,775' MD

TUBING		
OD	5-1/2"	3-1/2"
PPF	20#	9.2#
Grd	Q-125	L-80
Thrd	ANJO	Ultra FJ
ID	4.778"	2.992"
Depth	11,552'	12,792'

Casing Information					
Size	16"	10-3/4"	7-5/8"	5-1/2"	3-1/2"
Weight	65#	51#	29.7/33.7#	20#	8.8#
Grade/Thrd		N80/J55	N80 P110	P110	N80
Depth	330'	5,711'	11,895'	11,639-14,199'	13,859-14,870'



Enstor

Field: Grama Ridge Morrow

WELL

04

Lease/County: GRM UNIT/Lea County

DATE

07/28/2017

Location: F Unit, Section 4, Township 22S, Range 34E

API #:

30-025-21334

DRAWING STATUS

Current

DRAWING BY

M. Morris- Production Engr.

RKB	15'3,645'
Annular Fluid	9.0 ppg 2% KCL
Elev	3,630'
Top tree flange	7-1/16"x5M

16" 65# @ 330' in 20" hole
CTOC @ surface,

SITP: 2,300 on 04/05/2014
SICP: 3,400 psi
MASP: 5,100 psi
BHP: 4,600 psi
BHT-177 F
Annulus pressure - 3,400 ps

On 06/15/2017 Schlumberger Noise/Temp log indicated Baker Model F packer leak at 12,759'. On 06/20/2017 braden head test failed due to communication between tubing and annulus. On 06/21/2017 NMOCD issued Letter of Violation & Shut-in Notice. NMOCD well repair due date: 09/23/2017

On 11/04/2005 Vertilog indicated 100% DOP at 12,557' and 100% DOP at 12,623'. On 06/13/2017, EMIT-XL indicated 40% wall loss at 12,575'. Reduced burst strength of 5-1/2" 20# csg is 7,584 psi.

Vertilog indicated 39% DOP at 12,798' WLM and EMIT-XL indicated 23% wall loss at 12,775' WLM. Reduced burst strength of 5-1/2" 20# Csg is 9,732 psi.

TUBING		
OD	5-1/2"	3-1/2"
PPF	20#	9.2#
Grd	Q-125	L-80
Thrd	ANJO	Ultra FJ
ID	4.778"	2.992"
Depth	11,552'	12,792'

Enstor WO on 10/08/2006-03/06/2006: 1-1/4" coiled tbg washed and milled to 13,000'. Impression blk indicated partial collapse csg. 1-1/2" CT washed to 13,211' CTM. CT jetted dry at 12,750'.

Baker Model F pkr set @ 12,795' w/ 35K# of compression

Morrow perms: 12,873' - 12,903' & 13,093'-13,111'

CIBP @ 13,500' w/ cmt on top Baker Model F pkr @ 13,386'

5-1/2" 20# P110 Liner from 11,639' - 14,199' in 6-5/8" hole.

Devonian perms: 14,424-429', 14,440-460', 14,466-474', 14,544-550', & 14,562-570' MD
Tested wet.

CIBP set @ 14,750' MD

TD 14,870' RKB
PBTD: 13,280'

3-1/2" 8.8# N80 Hydril liner f/ 13,859' - 14,870' in 4-3/4" hole

Fracture Stimulation: On 11/16/2005 BJ conducted frac w/ 39,247 gal gelled water & 25,815# of 20/40 resin coated carboline into perms @ 20 BPM. On 11/18/2005 BJ Conducted frac w/ 43,447 gal of gelled water and 17,528# of 20/40 resin coated carbolate into perms @ 23 BPM

Casing Information

Size	16"	10-3/4"	7-5/8"	5-1/2"	3-1/2"
Weight	65"	51/55#	29/34#	20#	8.8#
Grade/Thrd		N80/J55	N80 P110	P110	N80
Hole Size	20"	15"	9-5/8"	6-5/8"	4-3/4"
Depth	300'	5,711'	11,895'	11,639-14,199'	13,859-14,870'
CMT	400 sx	1,000 sx	500 sx	305 sx	100 sx
TOC	Surface	3,455' ETOC Temp	10,230' Temp	TOL	TOL

**BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220
575-234-5972**

**Permanent Abandonment of Federal Wells
Conditions of Approval (LPC Habitat)**

Failure to comply with the following Conditions of Approval may result in a Notice of Incidents of Noncompliance (INC) in accordance with 43 CFR 3163.1.

1. Plugging operations shall commence within ninety (90) days from the approval date of this Notice of Intent to Abandon.

If you are unable to plug the well by the 90th day provide this office, prior to the 90th day, with the reason for not meeting the deadline and a date when we can expect the well to be plugged. Failure to do so will result in enforcement action.

The rig used for the plugging procedure cannot be released and moved off without the prior approval of the authorized officer. Failure to do so may result in enforcement action.

2. Notification: Contact the appropriate BLM office at least 24 hours prior to the commencing of any plugging operations. For wells in Chaves and Roosevelt County, call 575-627-0272; Eddy County, call 575-361-2822; Lea County, call 575-393-3612.

3. Blowout Preventers: A blowout preventer (BOP), as appropriate, shall be installed before commencing any plugging operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,090 feet; a 3M system for a well not deeper than 13,636 feet; and a 5M system for a well not deeper than 22,727 feet.

4. Mud Requirement: Mud shall be placed between all plugs. Minimum consistency of plugging mud shall be obtained by mixing at the rate of 25 sacks (50 pounds each) of gel per 100 barrels of brine water. Minimum nine (9) pounds per gallon.

5. Cement Requirement: Sufficient cement shall be used to bring any required plug to the specified depth and length. Any given cement volumes on the proposed plugging procedure are merely estimates and are not final. Unless specific approval is received, no plug except the surface plug shall be less than 25 sacks of cement. Any plug that requires a tag will have a minimum WOC time of 4 hours.

In lieu of a cement plug across perforations in a cased hole (not for any other plugs), a bridge plug set within 50 feet to 100 feet above the perforations shall be capped with 25 sacks of cement. If a bailer is used to cap this plug, 35 feet of cement shall be sufficient. Before pumping or bailing cement on top of CIBP, tag will be required to verify depth. Based on depth, a tag of the cement may be deemed necessary.

Unless otherwise specified in the approved procedure, the cement plug shall consist of either Neat Class "C", for up to 7,500 feet of depth or Neat Class "H", for deeper than 7,500 feet plugs.

6. Below Ground Level Cap (Lesser Prairie-Chicken Habitat): All casing shall be cut-off at the base of the cellar or 3 feet below final restored ground level (whichever is deeper). **The BLM is to be notified a minimum of 4 hours prior to the wellhead being cut off to verify that cement is to surface in the casing and all annuluses. Wellhead cut off shall commence within ten (10) calendar days of the well being plugged. If the cut off cannot be done by the 10th day, the BLM is to be contacted with justification to receive an extension for completing the cut off.** Upon the plugging and subsequent abandonment of wells that are located in lesser prairie-chicken habitat, the casings shall be cut-off at the base of the cellar or 3 feet below final restored ground level (whichever is deeper). The well bore shall then be covered with a metal plate at least ¼ inch thick and welded in place. A weep hole shall be left in the plate and/or casing.

NMOCD also requires the operator to notify NMOCD when this type of dry hole marker is used. This can be done on the subsequent report of abandonment which is submitted to the BLM after the well is plugged. State that a below ground cap was installed as required in the COA's from the BLM.

7. Subsequent Plugging Reporting: Within 30 days after plugging work is completed, file one original and three copies of the Subsequent Report of Abandonment, Form 3160-5 to BLM. The report should give in detail the manner in which the plugging work was carried out, the extent (by depths) of cement plugs placed, and the size and location (by depths) of casing left in the well. **Show date well was plugged.**

8. Trash: All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

Following the submission and approval of the Subsequent Report of Abandonment, surface restoration will be required. See attached reclamation objectives.

Timing Limitation Stipulation/ Condition of Approval for Lesser Prairie-Chicken:

From March 1st through June 15th annually, abandonment activities will be allowed except between the hours from 3:00 am and 9:00 am. Normal vehicle use on existing roads will not be restricted