

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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.*

**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		5. Lease Serial No. NM-058678
2. Name of Operator Enstor Grama Ridge Storage and Transportation, LLC		6. If Indian, Allottee or Tribe Name
3a. Address 20329 State Hwy 249, Suite 500 Houston, TX 77070	3b. Phone No. (include area code) (281) 374-3050	7. If Unit of CA/Agreement, Name and/or No. 14-08-0001014277 (NMNM70953X)
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 2310' FNL and 2310' FWL of Section 4, Township 22S, Range 34E		8. Well Name and No. GRM UNIT #4
		9. API Well No. 30-025-21334
		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/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<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	

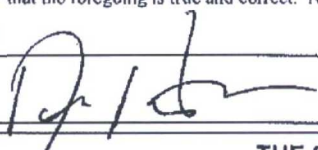
13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed 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 recomple 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 determined that the site is ready for final inspection.)

GRM UNIT #4 failed the 2017 NMOCB 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). The estimated completion date for this project is September 2018. This P&A will also be included in the 2018 Plan of Operations.

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

**HOBBS OCD**  
**NOV 20 2017**  
**RECEIVED**

**Accepted for Record Only**

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Nick Nicodemus		Director, Land & Regulatory Affairs
Signature 		Title
		Date 11/17/2017

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by	Title	Date
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	

**SUBJECT TO  
APPROVAL BY BLM**

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.

(Instructions on page 2)

**Accepted for Record Only**

*MAB/ocd*  
*11/20/2017*

# 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 psi

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'.

10-3/4" 51/51# N80/J55 csg set @ 5,711' in 15" hole, TOC @ 3,445'

Baker Microvertilog indicated 71% DOP at 7,216' WLM. Reduced burst Strength of 7-5/8" csg is 1,998 psi

Vertilog indicated 98% DOP @ 11,272'. Reduced burst strength of 7-5/8" csg is 138 psi. TOC @ 10,230' MD

7-5/8" 29/34# N80/P110 @ 11,895' In 9-5/8" hole, TOC @ 10,230'

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

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

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

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



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## DRAWING STATUS

## Proposed P&amp;A

## DRAWING BY

M. Morris— Production Engr.

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

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

MASP: 5,100 psi  
BHP: 4,600 psi  
BHT-177 F  
Annulus pressure – 3,400 psi

Cut off casing @ 5' BGL.  
Cut off well head & anchors  
3' BGL. Install well marker &  
ID plate

Perforate @ 430' MD. Circulate &  
place 210 sxs Class C cmt inside  
7-5/8" csg & 7-5/8" by 10-3/4"  
Annulus. TOC to 5' BGL. Tag TOC  
& record

Perforate @ 1,800' MD & cement squeeze with 100 sx Class  
C cement. Displace cement from 1,600-1,800' MD.  
Tag TOC and record. Pressure test plug to 500 psi for 30  
Min on chart.

Perforate at 5,811' MD & squeeze with 100 sx Class C cement.  
Tag TOC and record. Pressure test plug to 500 psi for  
30 minutes on chart

10-3/4" 51/51# N80/J55 csg set  
@ 5,711' in 15" hole, TOC @ 3,445'

Place 60 sx Class H balanced cement plug from 8,000 – 8,220'  
Tag TOC & record. Pressure test plug to 1,000 psi for  
30 minutes on chart

7-5/8" 29/34# N80/P110 @ 11,895'  
In 9-5/8" hole, TOC @ 10,230'

Place 156 sx Class H balanced plug from 11,500 to 12,720' MD  
Tag TOC and record. Pressure test plug to 1,000 psi for 30 min on chart  
Circulate 550 bbl 9.0 ppg salt gel into well bore.

Cement retainer set @ 12,770' MD. Squeeze Morrow with 100 sx  
Class H cement. Place 50' cement on top (6 sx of Class H),  
TOC @ 12,720' MD. Pressure test to 1,000 psi for 30 minutes on chart

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

3-1/2" 8.8# N80 Hydril liner f/ 13,859' –  
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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					
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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

### **GRM UNIT #4 Plugging Procedure**

1. Set cement retainer by wireline at 12,770' MD. Pressure test CMT RET to 2,000 psi for 30 minutes. Squeeze Morrow perms with 100 sx Class H cement & place 50' cement on top.
2. Place 156 sx Class H balanced cement plug from 11,500' to 12,720' MD. Tag & record. Pressure test plug to 1,000 psi for 30 min on chart. Circulate 550 bbl of 9.0 ppg salt gel mud into well bore.
3. Place 60 sx Class H balanced cement plug from 8,000 to 8,220' MD. Tag TOC & record. Pressure test plug to 1,000 psi for 30 minutes on chart.
4. Perforate 7-5/8" casing at 5,811' MD and squeeze with 100 sx Class C cement. Tag TOC and record. Pressure test plug to 500 psi for 30 minutes on chart.
5. Perforate at 1,800' MD and cement squeeze with 100 sx Class C cement. Displace cement from 1,600' to 1,800' MD. Tag TOC and record. Pressure test plug to 500 psi for 30 minutes on chart.
6. Perforate at 430' MD. Circulate and place 210 sx Class C cement inside 7-5/8" csg and 7-5/8" by 10-3/4" annulus. TOC to 5' BGL. Tag TOC and record.
7. Mechanical cut 7-5/8" csg and 10-3/4" csg @ 5' BGL, cut off well head and anchors @ 3' BGL, install ID plate and well marker.