Form 3160-5 (August 2007)

## **UNITED STATES** DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**

OCD HODBBS OCD

FORM APPROVED OMB No. 1004-0137

Expires: July 31, 2010

IAK	20	h	ZUAJLease	Serial No
		·	MNMA	033312/

Do not use this f	IOTICES AND REPORTS ( form for proposals to drill Use Form 3160-3 (APD) fo	or to re-enter and	ECFIVED	ottee or Tribe Name		
SUBMI	1	7. If Unit of CA/Agreement, Name and/or No. 14-08-0001014277 (NMNM 70953X)				
Type of Well     Oil Well    Gas W	/ell 🔽 Other / 💪	8. Well Name ar Grama Ridge	8. Well Name and No. Grama Ridge Morrow Unit No. 8			
2. Name of Operator Enstor Grama Ridge Storage and T	ransportation, LLC	s Storage	9. API Well No. 30-025-39922	/		
3a. Address 20329 State Hwy 249, Suite 400, Houston TX 7	7070	ne No. <i>(include area code</i> 74-3050	′	10. Field and Pool or Exploratory Area Morrow Formation, Grama Ridge		
4. Location of Well (Footage, Sec., T., 126' FSL and 1048' FEL of Section 4, T22S, R3	R.,M., or Survey Description) 4E		1	11. Country or Parish, State Lea County, NM		
12. CHEC	K THE APPROPRIATE BOX(ES) T	O INDICATE NATURE	OF NOTICE, REPORT OR	OTHER DATA		
TYPE OF SUBMISSION	TYP	TYPE OF ACTION				
Notice of Intent  ✓ Subsequent Report	Acidize Alter Casing Casing Repair	Deepen Fracture Treat New Construction	Production (Start/Resur	me) Water Shut-Off Well Integrity Other		
Final Abandonment Notice	Change Plans  ✓ Convert to Injection	Plug and Abandon Plug Back	Temporarily Abandon Water Disposal			
determined that the site is ready for  Anticipated start date for withdrawal  14. I hereby certify that the foregoing is to  Daryl W. Gee	/injection is February 22, 2013. A		INCCEPTE M.	D FCR RECORD  AR 2 4 2013  OF LAND MANAGEMENT SBAD FIELD OFFICE		
Signature		Date 2 12 13				
	THIS SPACE FOR F	EDERAL OR STA	TE OFFICE USE			
Approved by	g y and a second	Title		Date		
Conditions of approval if any are attached	Approval of this notice does not warr	ant or certify T				

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,

that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations the

fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

## GRAMA RIDGE STORAGE (5/5/12) **GRMU #8**

Section 4, T22S, R34E, 126' FSL, 1,048' FEL, Lea County, NM

TD: 1/21/11

Spud: 11/2/10

Gr. Elev.: 3,597' **RKB: 26' FINAL COMPLETION 4/29/12** API Number: 30-025-39922 See Wellhead data at bottom of sketch 20", 0.375" W. T., GR 'X-52', 17-1/2" Hole BFW Conductor Casing @ +/-60' 9.0 # Mud 13-3/8", 54.5 ppf, J-55, BTC Surface Casing @ 1,779', Cemented to Surface. A-Section w/Landing Base installed on 13-3/8" Casing to 20" conductor. Anhydrite 8.5# Inhibited Water as Annulus Fluid & Salt 9-5/8", 40.0 ppf, N-80, LTC Intermediate I Casing @ 5,610' & 12-1/4" Hole Cemented to Surface using DV Tool @ 3,994' 10.0 # Brine (40.0 ppf casing drifted to 8.750") Mud 8.5 # Inhibited KCl Water as annular fluid 2.313" I.D. BX Landing Nipple @ 4-1/2", 15.5 ppf, L-80, BTS-6 Conn. to 10,992' X 2-7/8", 6.5 ppf, L-80, Ultra FJ 12,706'. Unable to tubing from 10,992' to 12,717'. Seal Assembly latched into Baker FA packer @ get thru w/2.125" 12,717', with 28,000 lbs. weight set down on packer. Tested annulus & pkr. seals to GR 4/28/12 2,000 psi. 8-3/4" Hole 11,224' 4-1/2" TIW IB-SC RRP Liner Hanger w/ LX Liner Top Packer & Tie-back Receptacle (Full Bore). Packer tested to 3,000 psi. with 8.5 # WBM 11.3 ppg mud. 7", 29.0 ppf, P-110, LTC (Torque-Positioned) Production Casing set at 11,450' cemented up to +/-3,723' (Temp Log), inside the 9-5/8" Intermediate I Casing Baker 22 FA30 Pkr. @ 12,717' w/3' pup Jt. & 2.313" BXN L.N. w/2.205" No-Go, @ 12,722' & E.O.T. @ 12,725' Morrow 'C' Perfs. 12,960-66', 12,976-87' Morrow Limestone interval @ 12,730 & 13,000-30', 6 spf, 60 deg. Phasing, 0.39" Storage intervals: Morrow 'A', 'B'&'C' EHD, 9.7" Pen. Added Morrow Perfs. (4/28-29/12) 'A'- 12,811'-12,856'; 'B' - 12,920'-12,937'. All were w/1-9/16" HSC Schlumberger gun, 6 spf, 60 deg. Phasing, 0.23" EHD, 12.14" Penetration) Unable to get thru "BX" L.N. @ 12,706' w/2.00" gun. 4-1/2", 13.5 ppf, P-110, Ultra FJ Conn. Production Liner set from 11,224'-13,456' 6-1/8" Hole 11.3 # Brine Mud Cemented into 7" Casing to top of Liner Hanger at 11,224' per CBL log. TD 13,460'

## Cameron Wellhead:

'A' Sect.: 13-3/8" SOW X 13-5/8", 3k

'B' Sect.: 13-5/8", 3k X 11", 5k Csg Spool w/2-1/16", 5k casing valve

Tbg. Spool: 11", 5k X 7-1/16", 10k w/two 1-13/16" valves;

Tbg. Hanger: 7" X 4-1/2", 10k w/15.5 ppf, BTS-6, B X B threads w/4" Type 'H' BPV Threads; Tree: two (2) 7-1/16", 10k Master Valves, 7-1/16", 10k X 7-1/16", 10k cross (7-1/16" X 4-1/16" 10k adapter on top of cross w/Tree Cap w/4-1/2", 8rd lift thread) w/two 4-1/16" wings w/4-1/16", 10k gate valves & 4-1/16", 10k actuated gate valves on each wing. See Cameron Dwg. C5633.

3/4"X10" steel pin on bottom at PBTD at 13,364' WLM

Essex Energy Storage Services, Inc.

Revised 5/5/12