C108 APPLICATION FOR AUTHORIZATION TO INJECT

GRM UNIT NO. 001
API# 30-025-21336
OGRID# 234255

Prepared for:

State of New Mexico Energy, Minerals and Natural Resources Department

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

Prepared by:

ENSTOR
An Iberdrola Renewables Company

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 14518 Exhibit No. 5
Submitted by:
ENSTOR GRAMA RIDGE STORAGE AND TRANSPORTATION, L.L.C.
Hearing Date: July 22, 2010

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance _____Disposal ____X___Storage
Application qualifies for administrative approval? _____Yes _____No

II. OPERATOR: Enstor Grama Ridge Storage and Transportation, L.L.C.

ADDRESS: 20329 State Hwy 249, Houston, TX 77070

CONTACT PARTY: Daryl Gee PHONE: (281) 374-3062

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary. *See Attachment III*

IV. Is this an expansion of an existing project? _____Yes ____X____No
If yes, give the Division order number authorizing the project: R-11611

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review. See *Attachment V*

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail. *See Attachment VI*

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected; *N/A*
2. Whether the system is open or closed; *N/A*
3. Proposed average and maximum injection pressure; *See Attachment VII*
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, *N/A*
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.). *N/A*

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval. *See Attachment VIII*

IX. Describe the proposed stimulation program, if any. *N/A*

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). *Well Logs are on file with OCD.*

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken. *Only one water well falls within the 1-mile radius from the proposal injection well. The chemical analysis of this well is attached (See Attachment XI)*

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water. *N/A*

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Daryl W. Gee TITLE: Director, Regulatory Affairs and Land Management

SIGNATURE: _____ DATE: _____

E-MAIL ADDRESS: daryl.gee@enstorinc.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

Side 2

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Attachment III

GRM UNIT #001

Well Information

API# 30-025-21336
Location: E-03-22S-34E 660 FWL 1980 FWL

WELL CONSTRUCTION DATA

	Hole Size (in)	Casing Size	Cemented with (sx.)	Depth Set (ft)	Top of Cement	Method Determined
Conductor	20"	16" 65# J-55	400	370'	Surface	Visual
Surface Casing	15"	10 3/4" 51# & 55.5#	1000	5,643'	3,615'	Tempurature Survey
Intermediate Casing	9 5/8"	7 5/8" 29.7# & 33.9#	500	11,820'	7,270'	Tempurature Survey
Production Casing	6 5/8"	5 1/2 23#	250	13,396'	11,474'	Tempurature Survey

INJECTION WELL DATA

Tubing Size: 5 1/2" 20# & 3 1/2" 9.3#
Lining Material: n/a
Type of Packer: Model Hornet Retrievable Packer with Carbide Slips
Packer Setting Depth: 12,760'

Additional Data

(1) Injection Formation: Morrow Clastics

(2) Name of Field or Pool (if applicable): Grama Ridge, Morrow

(3) Post work over Perforations: 12815-12902 Morrow 'A'
12978-13026 Morrow 'C'

(4) Well originally drilled for production of Natural Gas

(5) Perforated intervals and plugging detail: 12,826' feet to 12,859'
12,981' feet to 12,994'
13,009' feet to 13,025'

(6) Name and depths of any oil and gas zones underlying or overlying the proposed injection zone: No higher or lower gas zones are known.

API #30-025-21336

Grama Ridge Storage & Transportation LP
WELL COMPLETION DIAGRAM
ACTUAL X PROPOSED

FIELD	Grama Ridge Morrow
WELL #	#001
LEASE	GRM Unit
RKB TO WL	
RKB TO ML	
ANNULAR FLUID	2% KCL Inhibited

DIRECTIONAL DATA

MAX ANGLE	THRU ZONE
KOP	HOLE TYPE

SURFACE EQUIPMENT

TREE	
SWAB CAP SIZE & THRD	
TOP TREE FLANGE	7-1/16" 5000
TUBING SPOOL FLANGE	

TUBING DETAIL

	1st or LS	SS or Btm of Taper
SIZE	5-1/2"	3-1/2"
WEIGHT	20#	9.2#
GRADE	P-110	P-110
DEPTH	11,403	12,760
THREAD	SLX	Ultra FJ
NEW/USED		
COATING		
SCSSV		
MIN. I.D.'s		

PRODUCTION ASSEMBLY DETAIL

#	O.D. (")	I.D. (")	LENGTH (')	DESCRIPTION
1.			13.00	Rotary Correction
2.			1.20	Hanger
3.	5.500	4.778	6.05	Double Pin Sub
4.	5.500	4.778	10.15	5 1/2" Sub
5.	5.500	4.778	4.15	5 1/2" Sub
6.	5.500	4.778	10.55	5 1/2" Sub
7.	5.500	4.778	11347.45	267 JTS 5 1/2" 20# P-110 SLX
8.	5.500	2.992	2.20	5 1/2" X 3 1/2" Crossover
9.	3.500	2.992	1344.50	41 JTS 3 1/2" 9.3# Ultra FJ Tubing
10.	3.532	2.981	1.00	3 1/2" 9.3# UFJ X 2 7/8" CS HYDRIL
11.				Crossover Sub
12.	4.500	2.313	1.50	4 1/2" X 2 7/8" X 2.313" Model L-10 On-Off
13.			-	Tool with 2.313" X Type Lock Seal Nipple
14.	4.500	2.370	7.76	450-237 Hornet Retrievable Packer
15.	3.688	2.441	10.30	2 7/8" X 10' L-80 Sub
16.	3.688	2.313	1.14	2 7/8" X 2.313" "X" Seating Nipple
17.	3.688	2.441	6.20	2 7/8" X 6' L-80 Sub
18.	3.688	2.441	0.43	2 7/8" Wireline Entry Guide
19.				
20.				Tubing Landed with 20,000 LBS WT Down
21.				
22.				
23.				
24.				
25.				

CASING DETAIL

#	SIZE	WGHT	GRADE	THRD	DEPTH
A	16	65	J-55		370'
B	10 3/4	51&55.5	J-55/N-80		5,643'
C	7 5/8	29.7 33.9	N-80/P-110		11,820'
D	5 1/2	23	P-110		11,474'-13,257' (liner)
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

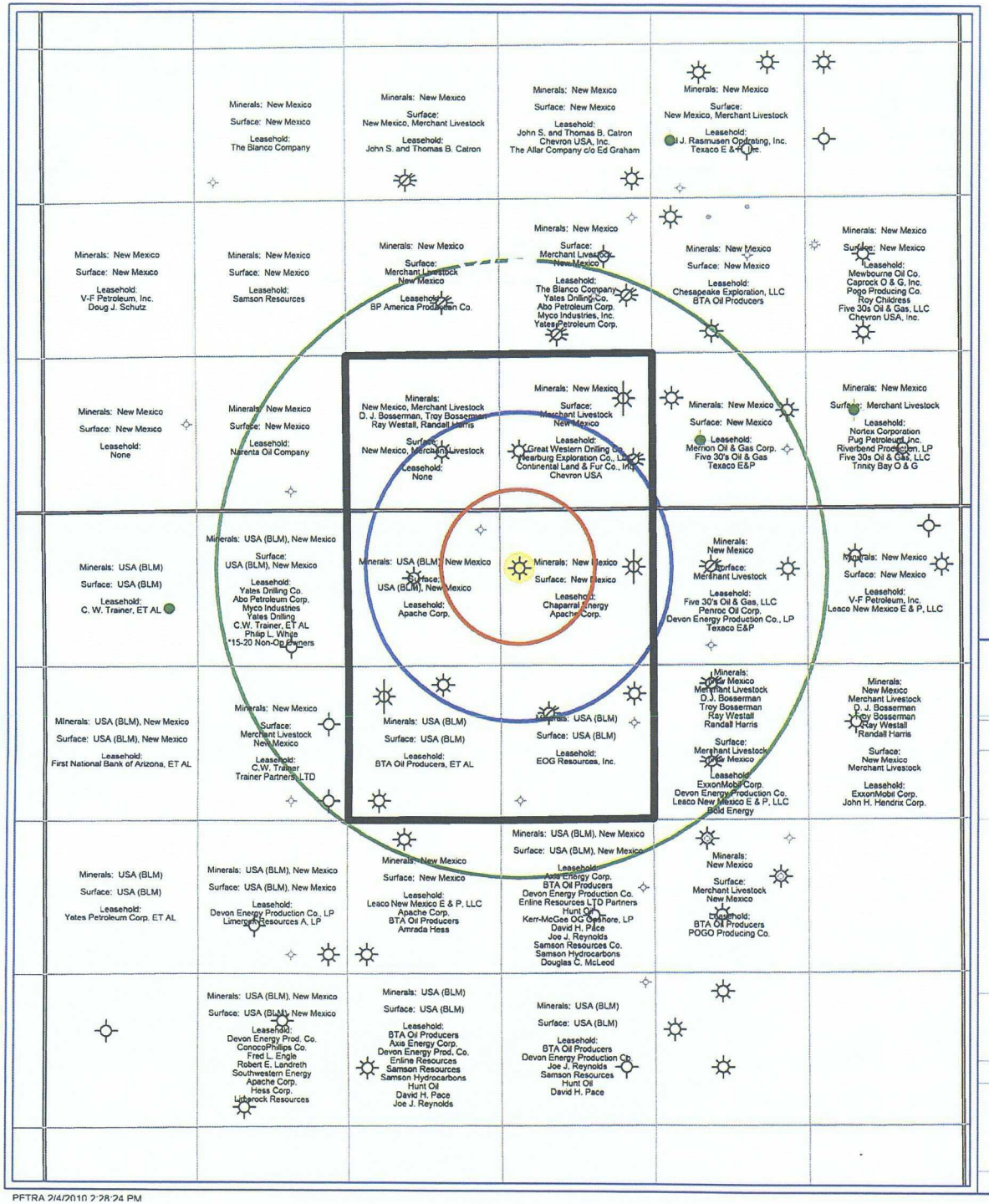
Prepared By: Rudy Spitzenberger Date 2/7/05

Updated By: Craig Parker Date January 15, 2010

Completed. Workovers: Printed on

File:

COMMENTS	EQUIPMENT DESCRIPTION
370'	16" 65# J-55, Cemented 400 SXS Circ to Surface 20" Hole
	TOC @ 3,615'
5,643'	10-3/4" 51#& 55.5# J-55 and N-80, Cemented 1,000 SXS 15" Hole
	5-1/2" 20# P-110 SLX Tubing
	TOC @ 7,270'
11,403'	3-1/2" 9.2# P-110 Ultra FJ
11,474'	Top of 5 1/2" 23# Liner
11,820'	7-5/8" 29.7# and 33.9# N-80 and P-110 Cemented 500 SXS 9 5/8" Hole
12,760'	12,760' Baker Model Hornet Packer with 20,000 lbs set down weight
Morrow Sand	Perfs 12,826'-12,859' (6 SPF)
	Perfs 12,981'-12,994' (6 SPF)
	Perfs 13,009'-13,025' (6 SPF)
PBTD 13,070'	
13,396	5-1/2" 23# P-110 Cemented 250 SXS 6 5/8" Hole



ENSTOR

Grama Ridge Morrow Unit Injection Well

LEASES

GRMU #1

WELL SYMBOLS
- Oil Well
- Gas Well
- Dry Hole
- Temporarily Abandoned
- Plugged & Abandoned Gas Well
- Oil & Gas Well
- Abandoned Loc
- Service Well
- Junked

Green Circle = 2-Mile Radius
Blue Circle = 1-Mile Radius
Red Circle = 1/2-Mile Radius

By: Vicki V. Devine

0 5,000
FEET

February 4, 2010

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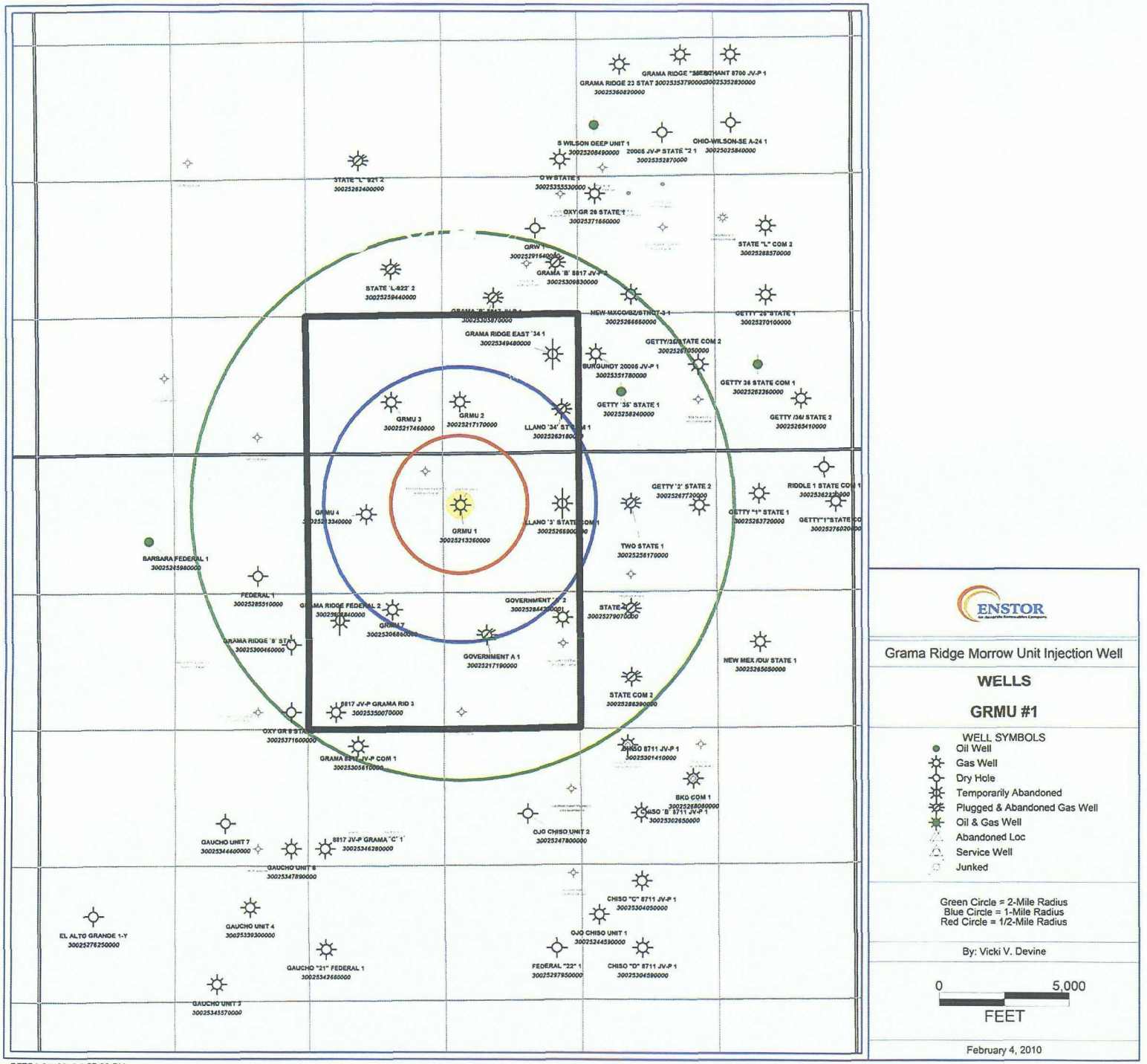

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Attachment VI

There are no wells within the **Area of Review** which penetrate the injection zone.

Attachment VII

3. Proposed Average Injection Surface Pressure = 3850 psi
   Proposed Maximum Injection Surface Pressure = 5000 psi

Geological Summary

The Morrow Clastics in the Grama Ridge Storage Unit comprise four stratigraphic sequences, commonly referred to as 'A' through 'D'. Within the Unit sandstones can be developed in all zones, however porosity and permeability, and even the presence or absence of sand, vary widely between wells.

The sandstones in the Morrow at Grama Ridge were deposited during base-level rise into incised valleys cut into the marine Morrow shale during the previous sea level low-stand. Flooding of the valleys resulted in dip-oriented channel-fill sandstones, along with more strike-oriented deltaic and estuarine-marine sandstones. The sandstones are 10 to 30 feet thick, discontinuous, and less than one mile wide.

The gas storage interval in the GRMU #1 includes the Morrow 'A' through the 'D' zones from 12,722 - 13,208. Within the storage interval the Morrow 'A' and 'C' are presently perforated (12,827-12,847; 12,984-12,985; 13,010-13,021). The Morrow 'B' and 'D' contain no sand.

A summary of the target injection intervals in the GRMU #1 follows:

Morrow 'A':

- Depth: 12815-12902
- Zone thickness: 86.6 feet
- Lithology: four sandstone units 4 to 8 feet thick separated by shales and silts
- Gross 'A' Sandstone: 22.5 feet (using a normalized GR cutoff of 50 API)
- Net 'A' Sandstone: 19 feet (Gross SS with >=6% Porosity)

Morrow 'C':

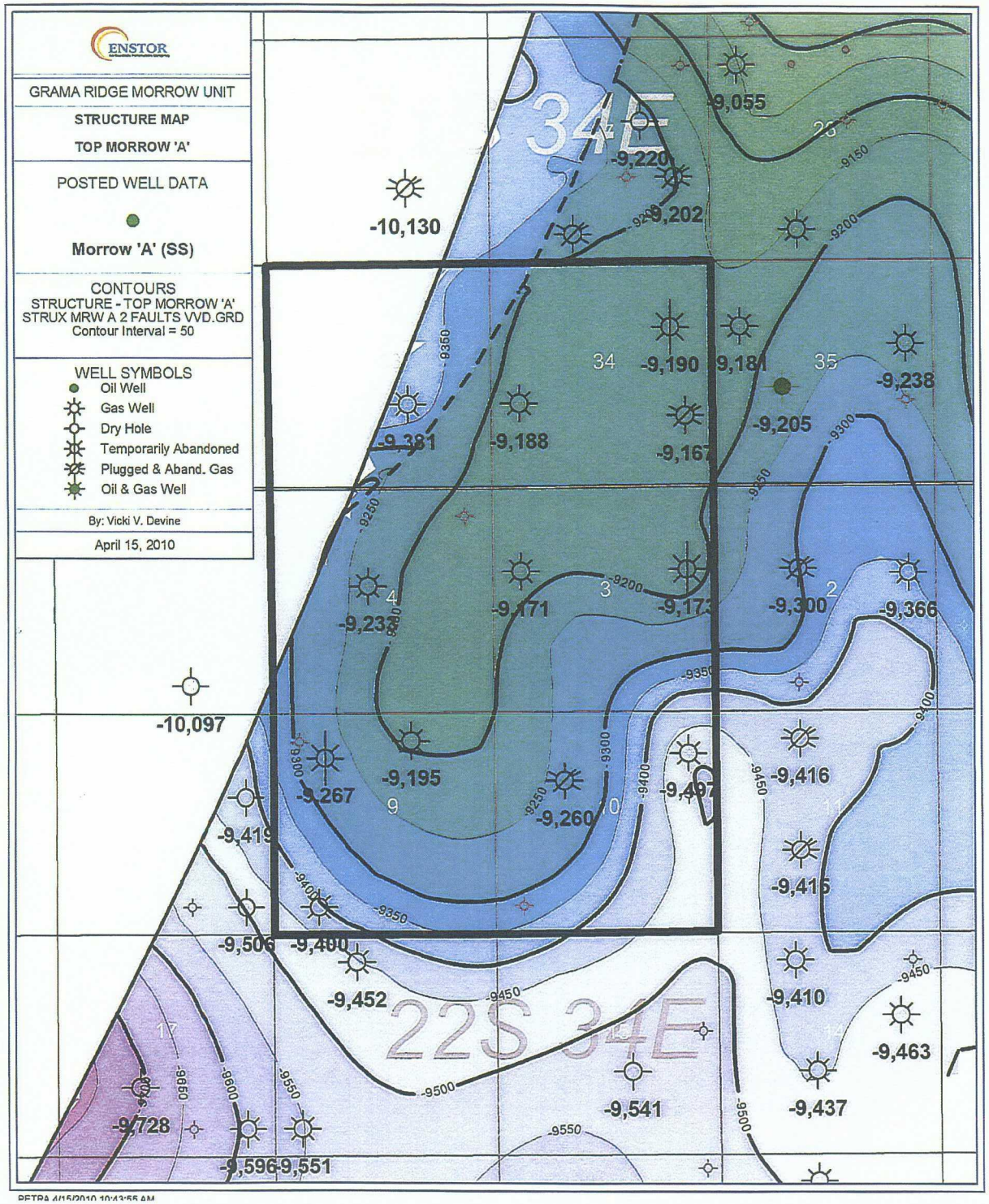
- Depth: 12978-13026
- Zone thickness: 49.2 feet
- Lithology: one thin sandstone
- Gross 'C' Sandstone: 7.5 feet (using a normalized GR cutoff of 50 API)
- Net 'C' Sandstone: 7 feet (Gross SS with >=6% Porosity)

The two (2) major groundwater aquifers found in the region of the GRMU #1 are the Ogallala Formation/Aquifer and the Capitan Aquifer. The Ogallala is the primary aquifer in the southern portions of Lea County. The Ogallala consists of sand, silt, clay and gravel. It is approximately 250 feet thick, and thins toward the southern portion of the County where the GRMU #1 is located. The Ogallala Aquifer is used for municipal, domestic, livestock, irrigation, oil and gas production, and other commercial and industrial purposes. Groundwater in the Ogallala Aquifer generally is of good quality, usually suitable for potable purposes. It can occur under confined

conditions at depths of 50 feet or less, but typical depths of water wells in the Ogallala are 100 to 500 feet below ground surface (bgs). Water supply well GR-1/WW-1 installed at the Grama Ridge compressor station in 2007 is assumed to be completed in the Ogallala. The boring was advanced to a total depth of 109 ft., and the groundwater was encountered at a depth of 62 ft. Attached is a summary report of an analysis of groundwater sampled from the well after it was completed.

The Capitan Aquifer also is an important source of groundwater in the southern portion of Lea, County. The Capitan consists of dolomite and limestone strata that are part of the Capitan Reef Complex. Water quality from the Capitan generally is very poor. However, it is used extensively for mining, oil and gas production, livestock watering, and some industrial and domestic purposes. The total depth of wells in the Capitan generally is 500 to 1,000 ft.

There are no known water sources underlying the Morrow Clastics at this location.


ENSTOR
GRAMA RIDGE MORROW UNIT
STRUCTURE MAP
TOP MORROW 'A'
POSTED WELL DATA
Morrow 'A' (SS)
CONTOURS
STRUCTURE - TOP MORROW 'A'
STRUX MRW A 2 FAULTS VVD.GRD
Contour Interval = 50
WELL SYMBOLS
Oil Well
Gas Well
Dry Hole
Temporarily Abandoned
Plugged & Aband. Gas
Oil & Gas Well
By: Vicki V. Devine
April 15, 2010
34E
22S 34E
-10,130
-9,055
-9,220
-9,202
-9,190
-9,181
-9,238
-9,205
-9,381
-9,188
-9,167
-9,171
-9,173
-9,300
-9,366
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-10,097
-9,195
-9,267
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-9,497
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-9,419
-9,415
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-9,410
-9,463
-9,728
-9,596
-9,551
-9,541
-9,437
PETRA 4/15/2010 10:43:55 AM

Attachment XI

P.O. BOX 98
MIDLAND, TX. 79702
PHONE (432) 683-4521

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
FAX (432) 682-8819

RESULT OF WATER ANALYSES

LABORATORY NO. 607-21
SAMPLE RECEIVED 5-31-07
RESULTS REPORTED 6-4-07

TO: Mr. Larry Khromer
20333 State Hwy 249, Suite 400, Houston, TX 77070

COMPANY Enstor LEASE Grama Plant
FIELD OR POOL
SECTION ____ BLOCK ____ SURVEY ____ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Drinking water - taken 5-31-07.
NO. 2 Maximum contents for drinking water as recommended by the Texas Dept. of Health.
NO. 3
NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0020			
pH When Sampled				
pH When Received	7.45			
Bicarbonate as HCO_3	195			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	168			
Calcium as Ca	48			
Magnesium as Mg	12			
Sodium and/or Potassium	34			
Sulfate as SO_4	30	300		
Chloride as Cl	36	300		
Iron as Fe	0.15	0.30		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	355	1,000		
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	24.20			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	4.0	10.0		

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: Based on the determinations performed above, this water shows salt levels that comply with State Health Department standards for drinking water. However, coliform bacteria was present in the submitted sample and therefore this water should not be consumed.

Form No. 3

By _____
Greg Ogden, B.S.

LATHAM PRINTING CO. - 333-1292

Martin Water Laboratories, Inc.

Analysts & Consultants since 1953
Bacterial & Chemical Analysis

To: Mr. Larry Khromer
20333 State Hwy 249, Suite 400
Houston, TX 77070

Laboratory No.	B607-31
Sample received	5-31-07
Sample reported	6-4-07

Company: Enstor
County: Lea, NM
Field:
Lease: Grama Plant

Subject: To determine the presence or absence of coliform bacteria.

Method: USEPA Equivalent Presence/Absence Method 8364
100 ml of sample is combined with premeasured and packaged media broth, incubated 48 hours at 35°C, and examined for yellow color, which indicates the presence of coliforms, or a red color, indicating a negative test.

Source of sample and date taken: Drinking water - taken 5-31-07.

Found (Present)	Not Found (Absent)
✔	

Remarks: These results show coliform bacteria to be present in the submitted water sample and therefore this water would not be acceptable for human consumption.

Greg Ogden, B.S.