

EXHIBIT 12

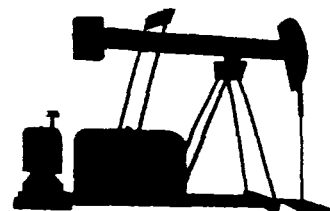
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# QUAY VALLEY, INC.

1608 N. BIG SPRING STREET

P.O. BOX 10280

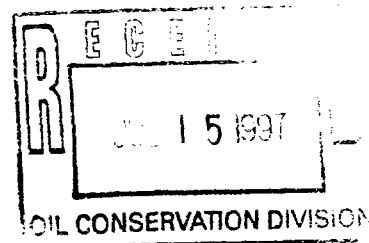
MIDLAND, TEXAS 79702



(915) 687-4220 FAX (915) 687-4288

July 8, 1997

William J. LeMay, Director  
Oil Conservation Division  
New Mexico Department of Energy  
Minerals and Natural Resources  
State Land Office Building  
2040 South Pacheco St.  
Santa Fe, New Mexico



Re: Application of Quay Valley, Inc. for  
Enhanced Oil Recovery Project Qualification  
for the Recovered Oil Tax Rate at the  
North El Mar Unit, Lea County, ~~Texas~~ New Mexico

Dear Mr. LeMay:

Quay Valley, Inc. (QVI) hereby makes application to qualify the North El Mar Unit for the Recovered Oil Tax Rate as authorized by the Enhanced Oil Recovery Act.

In accordance with this Order QVI provides the following information:

a. **Operators name and address;**

Quay Valley Inc.  
1608 N. Big Spring  
Midland, Texas 79702

b. **Description of project area;**

1. **Provide a plat outlining the project area;**

See Exhibit "A" for a plat of the NEMU and Exhibit "B" for a plat of the CO<sub>2</sub> project area.

2. **Describe the project area by section, township and range**

The following table identifies the acreage within the boundaries of the NEMU

Township & Range	Section	Description
T-28-S, R-32-E	Section 24	SE/4 SE/4, SW/4 SE/4
T-28-S, R-32-E	Section 25	S/2, S/2 N/2, N/2 NW/4, NW/4 NE/4, NE/4 NE/4
T-28-S, R-32-E	Section 26	S/2, S/2 NE/4, NE/4 NE/4, SE/4 NW/4,
T-28-S, R-32-E	Section 27	SE/4 SE/4
T-28-S, R-32-E	Section 34	Lots 3, 4, N/2 NE/4
T-28-S, R-32-E	Section 35	Lots 1, 2, 3, & 4, N/2 N/2
T-28-S, R-32-E	Section 36	Lots 1, 2, 3, 4, N/2 N/2
T-28-S, R-33-E	Section 19	Lot 4
T-28-S, R-33-E	Section 30	Lots 1, 2, 3, 4, E/2 SW/4, SE/4 NW/4,
T-28-S, R-33-E	Section 31	Lots 1, 2, 3, NE/4 NW/4

The proposed CO<sub>2</sub> project will impact only 68% of the NEMU acreage and is more accurately identified as those injection patterns highlighted on Exhibit "B" which includes those wells listed in Exhibit "C".

**3. Total acres;**

The NEMU contains a total of 2361.16 acres.

QVI is targeting 1,604 acres for the CO<sub>2</sub> project area as highlighted in Exhibit "B".

**4. Provide the name of the subject pool and formation;**

The NEMU is within the North El Mar Field.

The NEMU is a unitized portion of the Bell Canyon Formation. The type-log identified in the unitization hearing is reproduced as Exhibit "D".

**c. Status of operation in the project area;**

**1. Provide the name of the unit and the date and number of the Division Order approving the unit plan of operation;**

The proposed CO<sub>2</sub> project is at the QVI operated North El Mar Unit. The Division approved this Unit on September 13, 1973 with Order No. R-4629. The waterflood project for this Unit was approved by Order No. R-3486 (Case 3841) on August 21, 1968 and Order No. R-3540 (Case 3903) on October 31, 1968, which was subsequently expanded by Order No. R-4629 (Case 5060) dated September 13, 1973.

**d. Method of recovery to be used:**

**1. Identify fluids to be injected: and**

Recovery is to be enhanced with the introduction of Carbon Dioxide (CO<sub>2</sub>). Produced gas will be mixed with the CO<sub>2</sub> and reinjected. After an initial slug of CO<sub>2</sub> water will be injected in the target area with alternating slugs of CO<sub>2</sub> in what the industry calls a WAG injection.

**2. If the Division has not approved the project, provide the date the application for approval was filed with the Division on Form C-108.**

A supplemental C-108 is provided with this Application dated July 15, 1997.

**e. Description of the project:**

1. See Exhibit "C" for a list of the 27 existing wells that will be used as producing wells within the project target area. There are no plans to drill additional producing wells.
2. See Exhibit "C" for a list of the 24 existing wells within the project target area that will be used as injection wells. There are no plans to drill additional injection wells.
3. Capital cost of additional facilities;

Description	Cost, \$ Million *
Field Installations/Upgrades	1.05
Well Remediation & Misc.	1.89

\* current dollars

**4. Total project cost;**

The project will cost a total of \$23.25 Million inclusive of associated injectant expenses. Of this total, \$2.89 Million will go toward facilities and well work on the NEMU.

5. **Provide the estimated total value of the additional production that will be recovered as a result of this project;**

An additional 3.7 Million STB of oil are anticipated to be recovered as a result of this project. No additional hydrocarbon gas is expected to be recovered since the produced gas will be recycled. Based on the average posted oil price for the NEMU for the month of June 1997 of \$18.175/STB, the estimated value of the oil recovered from the proposed project is \$67.25Million.

6. **Provide anticipated date for commencement of injection;**

The anticipated initial CO<sub>2</sub> injection is February 1, 1997. 8

7. **What type of fluid will be injected and what are the anticipated volumes?**

A total of 27.1 Bscf will be purchased for the project. Produced gas will be recycled back to the reservoir resulting in an ultimate injection of 40.8 Bscf of gas during a 21 year period. Recycle gas will consist of CO<sub>2</sub> mixed with hydrocarbon gas that cannot be economically marketed but that will aid in the recovery of additional oil. In addition 16.9 million barrels of water (primarily produced water) will be injected along with the CO<sub>2</sub> in an WAG ( water-alternating-gas ) injection scheme. Alternating slugs of gas and water would be injected in varying volumes with the length of injection time dependent upon the reservoir response.

- f. **Production data: provide graphs, charts and other supporting data to show production history and production forecast of oil, gas, casinghead gas and water from the project area.**

Exhibit "E" provides the NEMU production and injection history along with the forecast of enhanced recovery due to the injection of CO<sub>2</sub>

It is requested that this application be set for hearing and with no objections, be accepted.

Sincerely,

**QUAY VALLEY, INC.**



Stella Swanson, CPL

Landman



# NORTH EL MAR UNIT

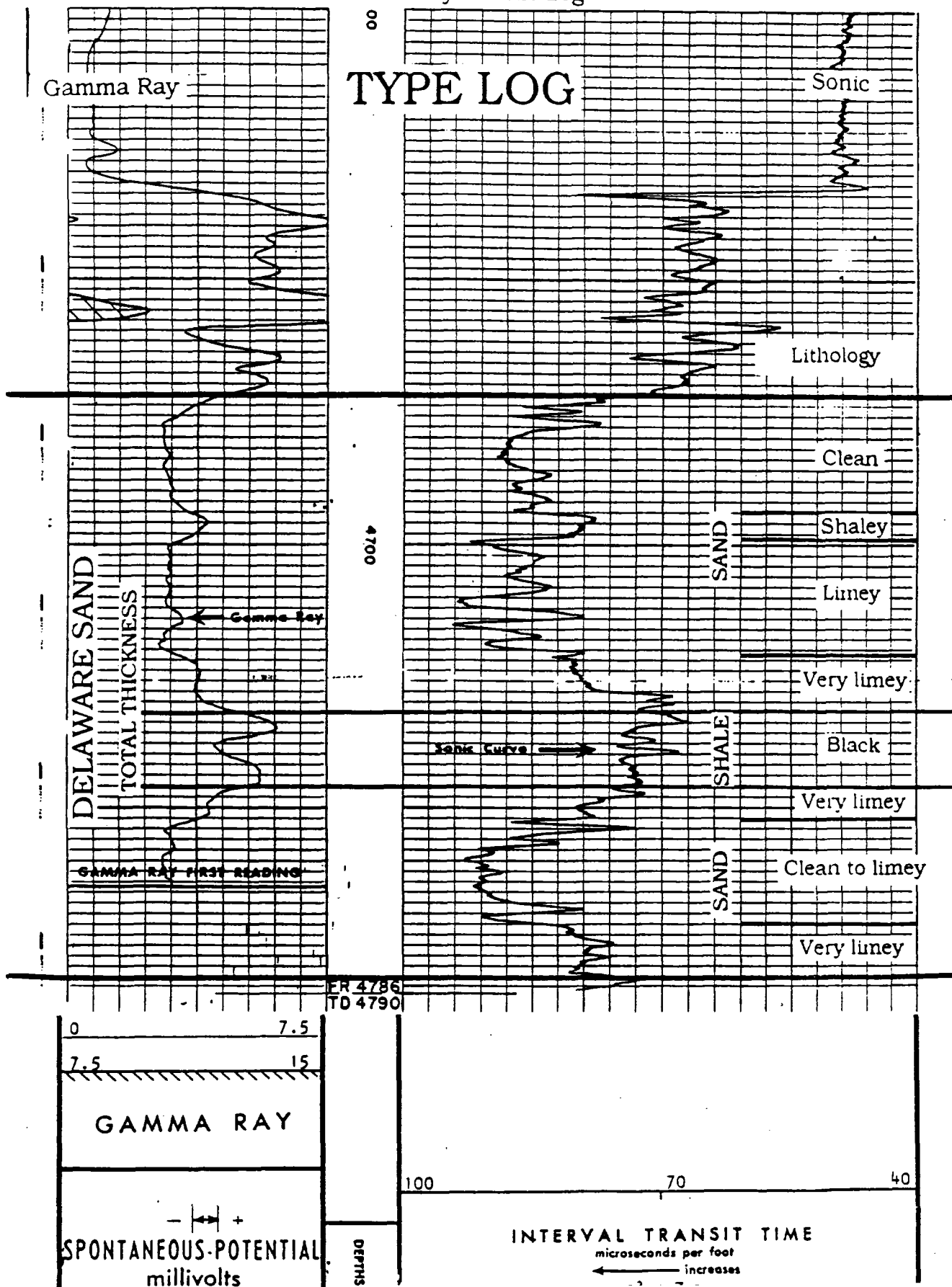
## Exhibit "C"

North El Mar Unit

Wells within Proposed CO2 Target Area

Producers		Count	Injectors	
NEMU Well No.	API Well No.		NEMU Well No.	API Well No.
1	30-025-08268	1	6	30-025-08280
5	30-025-08272	2	8	30-025-08287
7	30-025-08286	3	12	30-025-08294
13	30-025-08285	4	14	30-025-08277
15	30-025-08279	5	16	30-025-08281
17	30-025-08430	6	20	30-025-08431
19	30-025-08432	7	22	30-025-08278
21	30-025-08284	8	24	30-025-08275
23	30-025-08276	9	26	30-025-08293
25	30-025-08290	10	31	30-025-08292
27	30-025-08295	11	33	30-025-08288
30	30-025-08289	12	35	30-025-08274
32	30-025-08291	13	37	30-025-08283
34	30-025-08273	14	39	30-025-08435
36	30-025-08282	15	41	30-025-08437
38	30-025-08433	16	42	30-025-08316
40	30-025-08439	17	46	30-025-08311
43	30-025-08315	18	48	30-025-08309
45	30-025-08308	19	50	30-025-08305
47	30-025-08310	20	51	30-025-08312
49	30-025-08306	21	52	30-025-08313
53	30-025-08317	22	54	30-025-08318
55	30-025-08319	23	58	30-025-24908
56	30-025-08438	24	62	30-025-25422
59	30-025-25389	25		
60	30-025-25390	26		
61	30-025-25382	27		

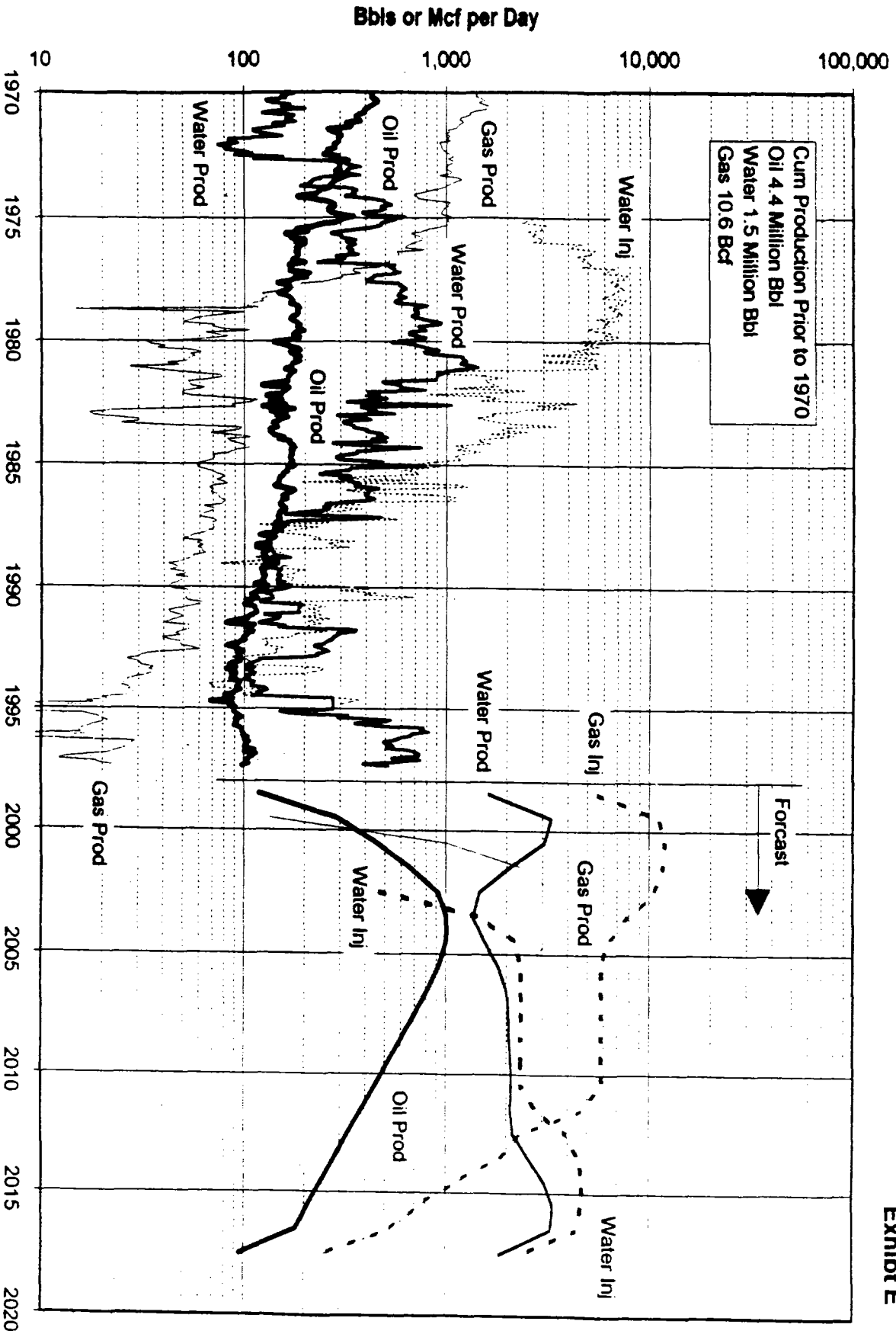
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# North El Mar Unit

Exhibit E



**BEFORE THE  
OIL CONSERVATION DIVISION**  
Santa Fe, New Mexico

Case No. 11826 Exhibit No. 12

Submitted by: Quay Valley, Inc.

Hearing Date: August 7, 1997