

**STATE OF NEW MEXICO  
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:**

**CASE NO. 12722  
ORDER NO. R-6199-B**

**APPLICATION OF OCCIDENTAL PERMIAN LIMITED PARTNERSHIP TO  
AMEND DIVISION ORDER NO. R-6199 CONCERNING THE EXPANSION OF  
ITS NORTH HOBBS GRAYBURG SAN ANDRES UNIT PRESSURE  
MAINTENANCE PROJECT, AND TO QUALIFY THE PROJECT FOR THE  
RECOVERED OIL TAX RATE PURSUANT TO THE ENHANCED OIL  
RECOVERY ACT, LEA COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on September 6, 2001, at Santa Fe, New Mexico, before Examiner David R. Catanach. This case was subsequently reopened on the record at the October 18, 2001 hearing before Examiner David R. Catanach, to allow the applicant to present additional evidence.

NOW, on this 22nd day of October, 2001, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

**FINDS THAT:**

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) By Division Order No. R-6198 entered in Case No. 6652 on November 30, 1979, the Division, upon application of Shell Oil Company, approved the North Hobbs Grayburg San Andres Unit comprising 10,649.53 acres, more or less, described as follows in Lea County, New Mexico:

**TOWNSHIP 18 SOUTH, RANGE 37 EAST, NMPM**

Section 13:	SE/4, W/2
Section 14:	All
Sections 23 through 25:	All

Section 26: E/2 NE/4, NW/4 NE/4  
Section 36 : E/2 NW/4, E/2

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM

Section 17: S/2 NW/4, SW/4  
Section 18: NE/4, S/2  
Sections 19 and 20: All  
Section 21: SW/4, S/2 SE/4, NW/4 SE/4  
Sections 27 through 32: All  
Section 33: W/2, NE/4, W/2 SE/4, NE/4 SE/4  
Section 34: E/2 NW/4, E/2

(3) By Order No. R-6199 entered in Case No. 6653 on November 30, 1979, the Division authorized Shell Oil Company to institute a pressure maintenance project within its North Hobbs Grayburg San Andres Unit by the injection of water into the Grayburg and San Andres formations, Hobbs Grayburg-San Andres Pool, through 70 initial injection wells.

(4) The applicant, Occidental Permian Limited Partnership ("Oxy"), the current operator of the North Hobbs Grayburg San Andres Unit, seeks to amend Division Order No. R-6199 to authorize the implementation of a carbon dioxide (CO<sub>2</sub>) tertiary recovery injection project within a portion of the North Hobbs Grayburg San Andres Unit, generally described as follows and hereinafter referred to as the "Phase I Area":

TOWNSHIP 18 SOUTH, RANGE 37 EAST, NMPM

Section 13: SW4, S/2 NW/4, S/2 SE/4  
Section 14: SE/4, S/2 NE/4  
Section 23: E/2  
Section 24: All  
Section 25: N/2, SE/4  
Section 36: NE/4

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM

Section 18: S/2  
Section 19: All  
Section 20: W/2, SE/4  
Section 28: SW/4, S/2 NW/4  
Sections 29 and 30: All  
Section 31: N/2  
Section 32: N/2, N/2 S/2

Section 33:

NW/4

- (5) Oxy further seeks:
- (a) authorization to convert an additional 60 wells to injection wells within the Phase I Area. These wells will be either new drills or conversions of existing wells;
  - (b) authorization to inject CO<sub>2</sub> and produced water into certain injection wells within the Phase I Area, and authorization to inject CO<sub>2</sub>, produced water, and produced gases including methane, natural gas liquids and hydrogen sulfide within certain injection wells within the Phase I Area;
  - (c) to establish maximum surface injection pressure limitations for all injection wells within the Phase I Area as follows:
    - 1100 psig for injection of water;
    - 1250 psig for injection of CO<sub>2</sub>;
    - 1770 psig for injection of produced gas; and
  - (d) to increase the limiting gas-oil ratio to 6,000 cubic feet of gas per barrel of oil.
- (6) Oxy further seeks to qualify the proposed tertiary recovery project as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (NMSA 1978 Sections 7-29A-1 through 7-29A-5).
- (7) Oxy presented evidence that demonstrates:
- (a) the North Hobbs Grayburg San Andres Unit is currently undergoing secondary recovery waterflood operations that commenced in 1979;
  - (b) pre-unitization primary oil recovery from the unit area was 160 million barrels of oil. Under waterflood operations, an additional 115 million barrels of oil will be recovered;

- (c) current production from the North Hobbs Grayburg San Andres Unit is 6,100 barrels of oil and 226,000 barrels of water per day from 144 active producing wells; and
- (d) total oil production from the unit as of January, 2001, has been 231 million barrels of oil.

(8) According to evidence presented by Oxy, its plan of operation within the proposed tertiary recovery injection project includes:

- (a) utilizing water-alternating-gas (WAG) injection by injecting alternating slugs of pure CO<sub>2</sub> and produced water within the eastern half of the Phase I Area;
- (b) utilizing water-alternating-gas (WAG) injection by injecting slugs of produced gas and CO<sub>2</sub> with alternating slugs of water within the western half of the Phase I Area;
- (c) utilizing a 160-acre nine-spot injection pattern for those producing intervals identified as San Andres Zones No. 1 & 2, and utilizing a five-spot injection pattern for that producing interval identified as the San Andres Zone No. 3; and
- (d) utilizing approximately 103 wells for injection within the Phase I Area.

(9) Oxy testified that implementing tertiary recovery operations within the Phase I Area of the North Hobbs Grayburg San Andres Unit should result in the recovery of an additional 76 million barrels of oil that may otherwise not be recovered, thereby preventing waste.

(10) Project costs are estimated to be \$510 million. This amount is detailed as follows:

Initial construction:	\$130 million
CO <sub>2</sub> purchase:	\$190 million
Well and surface operating expenses:	\$ 77 million
Additional lifting expenses:	\$ 22 million

Chemicals:	\$ 27 million
Gas reinjection expenses:	\$ 64 million

(11) Implementation of the proposed tertiary recovery injection project will extend the life of the Hobbs Grayburg-San Andres Pool by more than 20 years.

(12) Oxy further offered testimony that CO<sub>2</sub> injection operations may be expanded in the future to include additional areas within the North Hobbs Grayburg San Andres Unit.

(13) The evidence and testimony presented in this case demonstrates that it is prudent to implement tertiary recovery operations within the Phase I Area of the North Hobbs Grayburg San Andres Unit, and that implementing this project will result in the recovery of additional oil and gas from the project area that may otherwise not be recovered, thereby preventing waste.

(14) The proposed tertiary recovery project should be approved.

(15) The evidence presented demonstrates that:

- (a) the application for approval of the proposed tertiary recovery project has not been prematurely filed either for economic or technical reasons;
- (b) the area affected by the proposed project has been so depleted by primary and previous enhanced recovery operations that it is prudent to apply tertiary recovery techniques to maximize the ultimate recovery of crude oil from the pool; and
- (c) the proposed tertiary recovery project meets all the criteria for certification by the Division as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (NMSA 1978 Sections 7-29A-1 through 7-29A-5).

(16) The approved project area should initially comprise the Phase I Area of the North Hobbs Grayburg San Andres Unit, as identified in Finding No. (4); provided however, the "project area" and/or the producing wells eligible for the enhanced oil recovery (EOR) tax rate may be contracted and reduced based upon the evidence presented by the applicant in its demonstration of a positive production response.

(17) To be eligible for the EOR tax rate, the operator should advise the Division of the date CO<sub>2</sub> injection commences within the tertiary recovery project. At that time, the Division will certify the project to the New Mexico Taxation and Revenue Department.

(18) At such time as a positive production response occurs, and within seven years from the date the project was certified to the New Mexico Taxation and Revenue Department, the applicant must apply to the Division for certification of a positive production response. This application shall identify the area benefiting from enhanced oil recovery operations and the specific wells eligible for the EOR tax rate. The Division may review the application administratively or set it for hearing. Based upon the evidence presented, the Division will certify to the New Mexico Taxation and Revenue Department those wells that are eligible for the EOR tax rate.

(19) Oxy testified that hydrogen sulfide gas (H<sub>2</sub>S) will be an injected fluid within the western half of the Phase I Area. Oxy further testified that it has presented its H<sub>2</sub>S safety plan to the Bureau Chief of the Division's Environmental Bureau, and that this plan has been determined to be acceptable by the Division.

(20) The evidence presented by Oxy further demonstrates that the proposed gas-oil ratio limitation of 6,000 cubic feet of gas per barrel of oil is necessary to effectively implement the proposed tertiary recovery injection project.

(21) The proposed gas-oil ratio limitation of 6,000 cubic feet of gas per barrel of oil should be approved only for that portion of the Hobbs Grayburg-San Andres Pool contained within the North Hobbs Grayburg San Andres Unit.

(22) Oxy proposes to utilize 103 injection wells within the Phase I Area of the North Hobbs Grayburg San Andres Unit. Of these 103 wells, forty-three (43) are active injection wells that have previously been permitted for injection, twenty-four (24) are new wells that will be drilled for injection, and thirty-six (36) are either existing producing wells, temporarily abandoned producing wells or temporarily abandoned injection wells.

(23) At this time, Oxy proposes to permit 60 wells for injection within the proposed tertiary recovery injection project.

(24) The evidence presented demonstrates that several of the 36 existing wells that Oxy proposes to permit for injection have previously been granted Division approval to inject within the North Hobbs Grayburg San Andres Unit; however, the evidence

presented by Oxy is insufficient to determine whether the injection authority for these wells is still valid.

(25) All of the 36 existing wells should be permitted for injection, and that portion of any Division order that previously granted injection authority for any of these wells should be superseded by this order.

(26) Prior to commencing injection operations into the North Hobbs Grayburg San Andres Unit No. 311 located 1309 feet from the North line and 2310 feet from the East line (Unit B) of Section 19, Township 18 South, Range 38 East, NMPM, Oxy should perform remedial cement operations on the production liner in a manner prescribed by the supervisor of the Division's Hobbs District Office in order to assure that this well will not serve as a conduit for injected fluid to migrate from the proposed injection interval.

(27) The evidence presented demonstrates that there is a well located within the ½-mile area of review that may not be either temporarily abandoned or plugged and abandoned so as to confine the injected fluid to the proposed injection interval. Oxy should not be authorized to inject into any of its injection wells that are located within ½ mile of the Conoco Inc. North Hobbs Unit No. 1 (API No. 30-025-05449) located 660 feet from the North and West lines (Unit D) of Section 13, Township 18 South, Range 37 East, NMPM, until such time as Conoco Inc. complies with a Division directive to bring the well into compliance, either by properly temporarily abandoning the well or permanently plugging and abandoning the well.

(28) The operator should take all steps necessary to ensure that the injected fluids enter only the proposed injection interval and are not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(29) Injection should be accomplished through 2 7/8 inch or 3 1/2 inch internally fiberglass-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation in each well. The casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(30) The injection wells or pressurization system should be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to:

1100 psig for injection of water;  
1250 psig for injection of CO<sub>2</sub>; and  
1770 psig for injection of produced gas.

(31) Prior to commencing injection operations, the casing in each of the injection wells within the Phase I Area should be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

(32) The operator should give advance notice to the supervisor of the Division's Hobbs District Office of the date and time (i) injection equipment will be installed, (ii) the mechanical integrity pressure tests will be conducted on the proposed injection wells, and (iii) remedial cement work will be conducted on the North Hobbs Grayburg San Andres Unit No. 311, so that these operations may be witnessed.

(33) The operator should immediately notify the supervisor of the Division's Hobbs District Office of the failure of the tubing, casing or packer in any of the injection wells, or the leakage of water, oil or gas from or around any producing or plugged and abandoned well within the project area, and should promptly take all necessary steps to correct such failure or leakage.

(34) The proposed tertiary recovery project should be approved and the project should be governed by Division Rules No. 701 through 708.

(35) The injection authority granted herein for the wells shown on Exhibits "A" and "B" should terminate eighteen months after the date of this order if the operator has not commenced tertiary injection operations into the Phase I Area of the North Hobbs Grayburg San Andres Unit; provided, however, the Division, upon written request by the operator, may grant an extension for good cause.

(36) For any injection well shown on Exhibit "A" or "B" in which injection operations begin more than thirty-six months after the date of this order, the operator should submit to the Division either: (i) a statement certifying that there have been no changes in the information furnished in support of the subject application concerning the status or construction of any well that penetrates the injection interval within the 1/2-mile area of review around the injection well; or (ii) a statement describing any changes in the status or construction of any well that penetrates the injection interval within the 1/2-mile area of review. This statement should be submitted to the Division's Santa Fe office within the period no more than twelve months and no less than sixty days before injection operations commence in the well.

**IT IS THEREFORE ORDERED THAT:**

(1) Division Order No. R-6199, issued in Case No. 6653 on November 30, 1979, is hereby amended to allow Occidental Permian Limited Partnership to implement

a tertiary recovery injection project within the Phase I Area, being a portion of the North Hobbs Grayburg San Andres Unit, described below, by the injection of CO<sub>2</sub>, water and produced gas into the Grayburg and/or San Andres formations, Hobbs Grayburg-San Andres Pool, through the 60 wells shown on Exhibits "A" and "B" attached to this order, and through an additional 43 wells that have previously been approved for injection within the North Hobbs Grayburg San Andres Unit Pressure Maintenance Project:

TOWNSHIP 18 SOUTH, RANGE 37 EAST, NMPM

Section 13:	SW4, S/2 NW/4, S/2 SE/4
Section 14:	SE/4, S/2 NE/4
Section 23:	E/2
Section 24:	All
Section 25:	N/2, SE/4
Section 36:	NE/4

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM

Section 18:	S/2
Section 19:	All
Section 20:	W/2, SE/4
Section 28:	SW/4, S/2 NW/4
Sections 29 and 30:	All
Section 31:	N/2
Section 32:	N/2, N/2 S/2
Section 33:	NW/4

(2) The operator shall take all necessary steps to ensure that the injected fluid enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(3) Injection shall be accomplished through 2 7/8 inch or 3 1/2 inch internally fiberglass-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation in each well. The casing-tubing annulus shall be filled with an inert fluid and a gauge or approved leak-detection device shall be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(4) The injection wells or pressurization system within the Phase I Area shall be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to no more than:

1100 psig for injection of water;  
1250 psig for injection of CO<sub>2</sub>; and  
1770 psig for injection of produced gas.

(5) The Division Director may administratively authorize an increase in surface injection pressure upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(6) Prior to commencing injection operations, the casing in each of the injection wells within the Phase I Area shall be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

(7) Prior to commencing injection operations into the North Hobbs Grayburg San Andres Unit No. 311 located 1309 feet from the North line and 2310 feet from the East line (Unit B) of Section 19, Township 18 South, Range 38 East, NMPM, Oxy shall perform remedial cement operations on the production liner in a manner prescribed by the supervisor of the Division's Hobbs District Office in order to assure that this well will not serve as a conduit for injected fluid to migrate from the proposed injection interval.

(8) Oxy shall not commence injection into any of its injection wells that are located within ½ mile of the Conoco Inc. North Hobbs Unit No. 1 (**API No. 30-025-05449**) located 660 feet from the North and West lines (Unit D) of Section 13, Township 18 South, Range 37 East, NMPM, until such time as Conoco Inc. complies with a Division directive to bring the well into compliance, either by properly temporarily abandoning the well or permanently plugging and abandoning the well.

(9) The operator shall give advance notice to the supervisor of the Division's Hobbs District Office of the date and time (i) injection equipment will be installed, (ii) the mechanical integrity pressure tests will be conducted, and (iii) remedial work will be conducted on the North Hobbs Grayburg San Andres Unit No. 311, so that these operations may be witnessed.

(10) The operator shall immediately notify the supervisor of the Division's Hobbs District Office of the failure of the tubing, casing or packer in any of the injection wells, or the leakage of water, oil or gas from or around any producing or plugged and abandoned well within the project area, and shall promptly take all steps necessary to correct such failure or leakage.

(11) The project is hereby designated the North Hobbs Grayburg San Andres Unit Phase I Tertiary Recovery Project, and the applicant shall conduct injection

operations in accordance with Division Rules No. 701 through 708, and shall submit monthly progress reports in accordance with Division Rules No. 706 and 1115.

(12) The North Hobbs Grayburg San Andres Unit Phase I Tertiary Recovery Project is hereby certified as an "Enhanced Oil Recovery Project." The project area shall initially comprise the Phase I Area, described in Ordering Paragraph No. (1), provided however, the project area and/or the producing wells eligible for the enhanced oil recovery (EOR) tax rate may be contracted and reduced based upon the evidence presented by the applicant in its demonstration of a positive production response.

(13) To be eligible for the EOR tax rate, the operator shall advise the Division of the date and time CO<sub>2</sub> injection commences within the tertiary recovery project. At that time, the Division will certify the project to the New Mexico Taxation and Revenue Department.

(14) At such time as a positive production response occurs, and within seven years from the date the project was certified to the New Mexico Taxation and Revenue Department, the applicant must apply to the Division for certification of a positive production response. This application shall identify the area benefiting from enhanced oil recovery operations and the specific wells eligible for the EOR tax rate. The Division may review the application administratively or set it for hearing. Based upon the evidence presented, the Division will certify to the New Mexico Taxation and Revenue Department those wells that are eligible for the EOR tax rate.

(15) The injection authority granted herein for the wells shown on Exhibits "A" and "B" shall terminate eighteen months after the date of this order if the operator has not commenced tertiary injection operations into the Phase I Area of the North Hobbs Grayburg San Andres Unit; provided, however, the Division, upon written request by the operator, may grant an extension for good cause.

(16) For any injection well shown on Exhibit "A" or "B" in which injection operations begin more than thirty-six months after the date of this order, the operator shall submit to the Division either: (i) a statement certifying that there have been no changes in the information furnished in support of the subject application concerning the status or construction of any well that penetrates the injection interval within the ½-mile area of review around the injection well; or (ii) a statement describing any changes in the status or construction of any well that penetrates the injection interval within the ½-mile area of review. This statement shall be submitted to the Division's Santa Fe office within the period no more than twelve months and no less than sixty days before injection operations commence in the well.

(17) The limiting gas-oil ratio for that portion of the Hobbs Grayburg San Andres Pool contained within the North Hobbs Grayburg San Andres Unit is hereby established at 6,000 cubic feet of gas per barrel of oil.

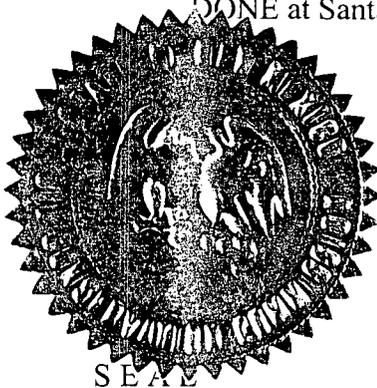
(18) In addition to those wells shown on Exhibits "A" and "B" that are authorized to inject CO<sub>2</sub>, water and produced gases, the following-described previously permitted injection wells are also authorized to inject all of these fluids:

<u>Well Name &amp; Number</u>	<u>Well Location</u>
NHGSAU No. 112	Unit D, Section 19, T-18S, R-38E
NHGSAU No. 142	Unit M, Section 19, T-18S, R-38E
NHGSAU No. 231	Unit K, Section 19, T-18S, R-38E
NHGSAU No. 212	Unit C, Section 24, T-18S, R-37E
NHGSAU No. 413	Unit A, Section 24, T-18S, R-37E
NHGSAU No. 432	Unit H, Section 24, T-18S, R-37E
NHGSAU No. 442	Unit P, Section 24, T-18S, R-37E
NHGSAU No. 422	Unit H, Section 25, T-18S, R-37E
NHGSAU No. 112	Unit D, Section 30, T-18S, R-38E
NHGSAU No. 222	Unit F, Section 30, T-18S, R-38E
NHGSAU No. 232	Unit K, Section 30, T-18S, R-38E
NHGSAU No. 233	Unit K, Section 30, T-18S, R-38E
NHGSAU No. 333	Unit J, Section 30, T-18S, R-38E

The 30 other previously permitted injection wells are authorized to inject CO<sub>2</sub> and water only.

(19) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

*Lori Wrotenbery*  
LORI WROTENBERY  
Director

**Exhibit "A"**  
**Division Order No. R-6199-B**  
**North Hobbs Grayburg San Andres Unit Tertiary Recovery Project**  
**Approved Injection Wells (New Wells To Be Drilled)**

Well Name & Number	API Number	Well Location	Injection Interval	Packer Depth
NHGBSAU No. 118 **	N/A	Footage Undetermined, Unit J or P, Section 18, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 118 **	N/A	Footage Undetermined, Unit L or N, Section 18, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 118 **	N/A	Footage Undetermined, Unit M or N, Section 18, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 112 **	N/A	Footage Undetermined, Unit D, Section 19, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 142 **	N/A	Footage Undetermined, Unit N, Section 19, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 120	N/A	Footage Undetermined, Unit D or F, Section 20, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 312 **	N/A	Footage Undetermined, Unit B, Section 24, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 331 **	N/A	Footage Undetermined, Unit J, Section 24, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 124 **	N/A	Footage Undetermined, Unit G, Section 24, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 124 **	N/A	Footage Undetermined, Unit F, Section 24, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 125 **	N/A	Footage Undetermined, Unit A or B, Section 25, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 323	N/A	Footage Undetermined, Unit G, Section 29, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 342	N/A	Footage Undetermined, Unit O, Section 29, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 442	N/A	Footage Undetermined, Unit P, Section 29, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 129	N/A	Footage Undetermined, Unit E, Section 29, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 222 **	N/A	Footage Undetermined, Unit F, Section 30, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 422	N/A	Footage Undetermined, Unit H, Section 30, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 442	N/A	Footage Undetermined, Unit P, Section 30, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 312	N/A	Footage Undetermined, Unit B, Section 31, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 222	N/A	Footage Undetermined, Unit F, Section 32, T-18S, R-38E	4,000'-4,500'	3,900'
NHGBSAU No. 323	N/A	Footage Undetermined, Unit G, Section 32, T-18S, R-38E	4,000'-4,500'	3,900'

**\*\* Denotes wells that are authorized to inject CO<sub>2</sub>, water, and produced gas. All other wells are authorized to inject CO<sub>2</sub> and water only.**

**Exhibit "B"**  
**Division Order No. R-6199-B**  
**North Hobbs Grayburg San Andres Unit Tertiary Recovery Project**  
**Approved Injection Wells (Existing Wells)**

Well Name & Number	API Number	Well Location	Injection Interval	Packer Depth
NHGBSAU No. 341 **	30-025-05446	660' FSL & 1980' FEL, Unit O, Section 13, T-18S, R-37E	4,000'-4,263'	3,900'
NHGBSAU No. 441 **	30-025-12732	330' FSL & 330' FEL, Unit P, Section 13, T-18S, R-37E	4,000'-4,258'	3,900'
NHGBSAU No. 232 **	30-025-29172	2501' FSL & 1410' FWL, Unit K, Section 19, T-18S, R-38E	4,000'-4,420'	3,900'
NHGBSAU No. 141 **	30-025-05485	1315' FSL & 1315' FWL, Unit M, Section 24, T-18S, R-37E	4,000'-4,270'	3,900'
NHGBSAU No. 331 **	30-025-05488	1320' FSL & 1325' FEL, Unit J, Section 24, T-18S, R-37E	4,000'-4,210'	3,900'
NHGBSAU No. 411 **	30-025-23522	990' FNL & 990' FEL, Unit A, Section 24, T-18S, R-37E	4,000'-4,283'	3,900'
NHGBSAU No. 414 **	30-025-28879	10' FNL & 1280' FEL, Unit A, Section 24, T-18S, R-37E	4,000'-4,370'	3,900'
NHGBSAU No. 431 **	30-025-05487	2310' FSL & 330' FEL, Unit I, Section 24, T-18S, R-37E	4,000'-4,300'	3,900'
NHGBSAU No. 411 **	30-025-05503	330' FNL & 330' FEL, Unit A, Section 25, T-18S, R-37E	4,000'-4,259'	3,900'
NHGBSAU No. 242	30-025-28413	100' FSL & 1400' FWL, Unit N, Section 29, T-18S, R-38E	4,000'-4,370'	3,900'
NHGBSAU No. 321	30-025-07431	2310' FNL & 1650' FEL, Unit G, Section 29, T-18S, R-38E	4,000'-4,309'	3,900'
NHGBSAU No. 113 **	30-025-29064	1310' FNL & 195' FWL, Unit D, Section 30, T-18S, R-38E	4,000'-4,370'	3,900'
NHGBSAU No. 312	30-025-29197	530' FNL & 1448' FEL, Unit B, Section 30, T-18S, R-38E	4,000'-4,431'	3,900'
NHGBSAU No. 331	30-025-07472	2335' FSL & 2310' FEL, Unit J, Section 30, T-18S, R-38E	4,000'-4,238'	3,900'
NHGBSAU No. 444	30-025-28959	215' FSL & 1255' FEL, Unit P, Section 30, T-18S, R-38E	4,000'-4,370'	3,900'
NHGBSAU No. 131	30-025-07527	2310' FSL & 330' FWL, Unit L, Section 32, T-18S, R-38E	4,000'-4,250'	3,900'
NHGBSAU No. 422	30-025-29074	1385' FNL & 110' FEL, Unit H, Section 32, T-18S, R-38E	4,000'-4,370'	3,900'
NHGBSAU No. 111	30-025-12505	330' FNL & 330' FWL, Unit D, Section 33, T-18S, R-38E	4,000'-4,237'	3,900'
NHGBSAU No. 141 **	30-025-05437	660' FSL & 660' FWL, Unit M, Section 13, T-18S, R-37E	4,000'-4,235'	3,900'
NHGBSAU No. 221 **	30-025-05439	1980' FNL & 1980' FWL, Unit F, Section 13, T-18S, R-37E	4,000'-4,160'	3,900'
NHGBSAU No. 321 **	30-025-05457	2310' FNL & 1650' FEL, Unit G, Section 14, T-18S, R-37E	4,000'-4,350'	3,900'
NHGBSAU No. 121 **	30-025-05502	1650' FNL & 990' FWL, Unit E, Section 25, T-18S, R-37E	4,000'-4,261'	3,900'
NHGBSAU No. 341 **	30-025-05497	660' FSL & 1650' FEL, Unit O, Section 25, T-18S, R-37E	4,000'-4,220'	3,900'
NHGBSAU No. 411	30-025-07454	990' FNL & 990' FEL, Unit A, Section 29, T-18S, R-38E	4,000'-4,335'	3,900'
NHGBSAU No. 321 **	30-025-05540	1650' FNL & 1650' FEL, Unit G, Section 36, T-18S, R-37E	4,000'-4,300'	3,900'
NHGBSAU No. 121 **	30-025-05440	1980' FNL & 660' FWL, Unit E, Section 13, T-18S, R-37E	4,000'-4,235'	3,900'
NHGBSAU No. 241 **	30-025-05436	660' FSL & 1980' FWL, Unit N, Section 13, T-18S, R-37E	4,000'-4,320'	3,900'
NHGBSAU No. 341 **	30-025-05450	660' FSL & 1650' FEL, Unit O, Section 14, T-18S, R-37E	4,000'-4,350'	3,900'
NHGBSAU No. 342 **	30-025-07342	330' FSL & 2310' FEL, Unit O, Section 18, T-18S, R-38E	4,000'-4,286'	3,900'
NHGBSAU No. 311 **	30-025-07369	1309' FNL & 2310' FEL, Unit B, Section 19, T-18S, R-38E	4,000'-4,296'	3,900'
NHGBSAU No. 411 **	30-025-07370	1300' FNL & 1300' FEL, Unit A, Section 19, T-18S, R-38E	4,000'-4,342'	3,900'
NHGBSAU No. 233	30-025-27214	1610' FSL & 1850' FWL, Unit K, Section 20, T-18S, R-38E	4,000'-4,510'	3,900'
NHGBSAU No. 321 **	30-025-05463	1650' FNL & 1650' FEL, Unit G, Section 23, T-18S, R-37E	4,000'-4,265'	3,900'
NHGBSAU No. 341 **	30-025-05475	990' FSL & 1650' FEL, Unit O, Section 23, T-18S, R-37E	4,000'-4,302'	3,900'
NHGBSAU No. 121 **	30-025-05476	1650' FNL & 990' FWL, Unit E, Section 24, T-18S, R-37E	4,000'-4,319'	3,900'
NHGBSAU No. 121 **	30-025-07514	1980' FNL & 990' FWL, Unit E, Section 31, T-18S, R-38E	4,000'-4,300'	3,900'

**\*\* Denotes wells that are authorized to inject CO<sub>2</sub>, water and produced gas.  
All other wells are authorized to inject CO<sub>2</sub> and water only.**