BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION OF EXXON CORPORATION FOR APPROVAL OF A WATERFLOOD PROJECT AND TO QUALIFY THE PROJECT FOR THE RECOVERED OIL TAX RATE, LEA COUNTY, NEW MEXICO

CASE NO. 11665

APPLICATION

Exxon Corporation ("Exxon") hereby applies for an order approving a waterflood project, and to qualify the project for the recovered oil tax rate. In support thereof, Exxon states:

1. Exxon is the operator of Section 10, Township 21 South, Range 36 East, N.M.P.M., which comprises 640 acres of fee land. Said acreage is comprised of: the E½ of Section 10, which is Exxon's John D. Knox Lease; the SW¼ and S½NW¼ of Section 10, which is part of Exxon's A.J. Adkins Lease; and the N½NW¼ of Section 10, which is dedicated to the Exxon-operated Blinebry Oil Comm. Well No. 1.

2. Exxon proposes to institute a cooperative waterflood project on the above-described acreage. Exxon will be the operator of the proposed waterflood project, designated the Knox-Adkins Waterflood Project, and its address is P.O. Box 1600, Midland, Texas 79702.

3. By drilling two injection wells, Exxon proposes to inject produced water into the Blinebry formation (Oil Center-Blinebry Pool). The project area comprises all of Section 10. A plat outlining the project area, and showing the location of the initial injection and producing wells, is attached hereto as Exhibit A.

4. Exxon requests that the Knox-Adkins Waterflood Project be

qualified for the recovered oil tax rate pursuant to the Enhanced Oil Recovery Act (L. 1992, Ch. 38) and Division Order No. R-9708. Project data includes:

- (a) Number of initial producing wells: 6.
- (b) Number of initial injection wells: 2.
- (c) Capital cost of additional facilities: \$1,000,000.
- (d) Estimated total project cost: \$1,000,000.
- (e) Estimated total value of incremental production recovered from the project: \$10,000,000
 (@ \$20/barrel).
- (f) Anticipated injection commencement date: February15, 1997.
- (g) Type of fluid injected: Produced water.
- (h) Anticipated injection volumes: 5000 BWPD maximum;
 3200 BWPD average for first year, decreasing thereafter.

5. The projected primary plus secondary production from the project area is shown on Exhibit B attached hereto.

6. Attached hereto as Exhibits C and D are the Form C-108's regarding the two initial injection wells for the proposed waterflood project.

WHEREFORE, Applicant requests that, after hearing, the Division approve the injection application and the Knox-Adkins Waterflood Project, qualify the project as an enhanced oil recovery project, and certify the project for the recovered oil tax rate.

Respectfully submitted,

HINKLE, COX, EATON, COFFIELD & HENSLEY, L.L.P.

5 We anes

James Bruce F.O. Box 2068 Santa Fe, New Mexico 87504 (505) 982-4554

Attorneys for Exxon Corporation

VERIFICATION

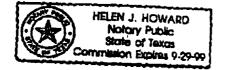
STATE OF TEXAS)) COUNTY OF MIDLAND)

William T. Duncan, Jr., being duly sworn upon his oath, deposes and states that he is a petroleum engineer employed by Exxon Corporation, he is familiar with the matters set forth in the foregoing Application, and the statements therein are true and correct to the best of his knowledge.

William T. Duncan, Jr.

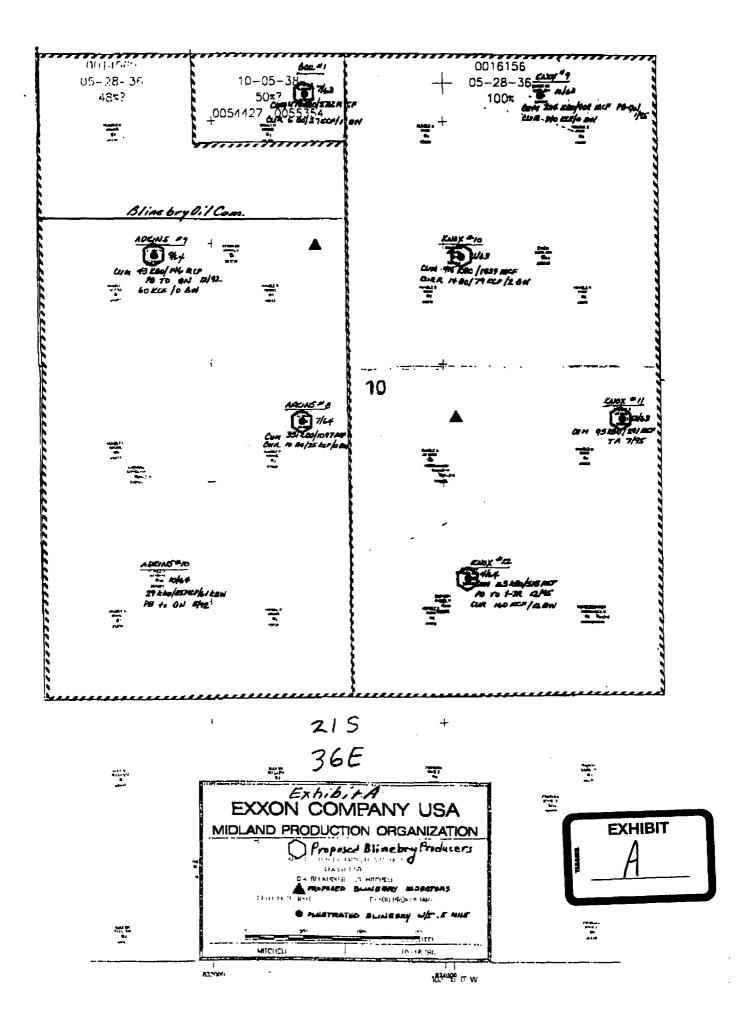
SUBSCRIBED AND SWORN TO before me this <u>12th</u> day of November, 1996 by William T. Duncan, Jr.

SEAL



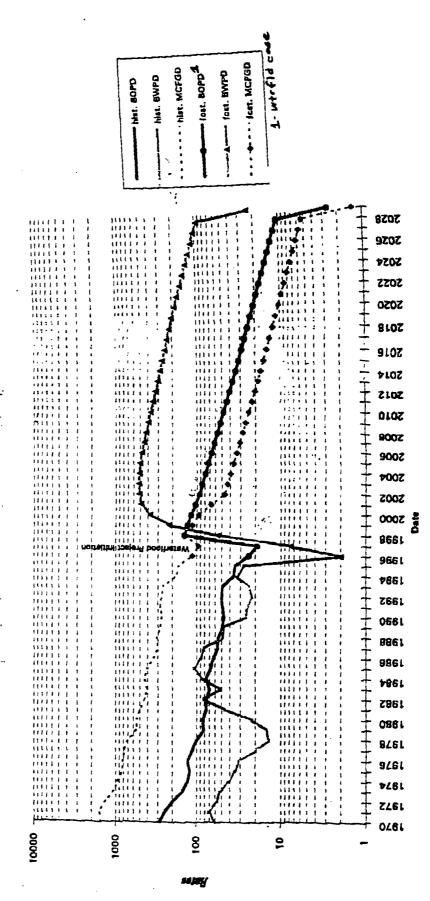
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My Commission Expires:



EXHIBIT





ENERG	AND MINERALS DEPARTMENT	NSERVATION DIVISION PORT OFFICE BOLLOOR TETE LAND OFFICE BULLOND LINEA RE NEW MELICO 87501	FORM C-108 Revised 7-1-81
APPLICA	TION FOR AUTHORIZATION TO INJECT	Case 1	<i>2</i> عا ما /
1.	Purpose: Secondary Recovery Application qualifies for administ	Pressure Haintenunce 🔲 Dign rutive approval? 🛄 yes 🛄	osol 🔲 Stormge]na
11.	Operator: Exxon Company, U.S.	A	
	Address: P. O. Box 1600		·····
	Contact party: Selena Nunez	Phane:915	5) 688-7899
tII.		Additional sheets may be attach	arm for each well ed if necessary.
IV.	Is this an expansion of an existing p If yes, give the Division order numbe	roject? 🔲 yes 💹 no r authorizing the project	·
۷.	Attach a map that identifies all well injection well with a one-half mile r well. This circle identifies the wel	adius circle drawn around each i	f any proposed proposed injection
- vI.	Attach a tabulation of data on all we penetrate the proposed injection zone well's type, construction, date drill a schematic of any plugged well illus	. Such data shall include a dea ad. location, depth, record of (scription of each
VII.	Attach data on the proposed operation	, including:	
	5. If injection is for disposal at or within one mile of th	closed; injection pressure; alysis of injection fluid and co other than reinjected produced o purposed into a zone not produc e proposed well, attach a chemid water (may be measured or infe	ompatibility with water; and tive of oil or gas cal analysis of
••111.	Attach appropriate geological date on detail, geological name, thickness, a bottom of all underground sources of total dissolved solids concentrations injection zone as well as any such so injection interval.	nd depth. Give the geologic na drinking water (aquifers contain of 10.000 mg/l or less) overly.	me, and depth to ning waters with ing the proposed
11.	Describe the proposed stimulation pro	gram, if eny.	
• X.	Attach appropriate logging and test d with the Division they need not be re	ata on the well. (If well logs submitted.)	have been filed
• XI.	Attach a chemical analysis of fresh w available and producing) within one m location of wells and dates samples w	ile of any injection or disonaa	er wells (if 1 well snawing
XII.	Applicants for discosal wells must ma examined svailable geologic and engin or any other hydrologic connection be source of drinking water.	eering domains and find no evidence	e of open faults
XIII.	Applicants must complete the "Proof o	f Notice" section on the reverse	e side of this form.
XIV-	Certification		
	I hereby certify that the information to the best of my knowledge and belie	f. <u>-</u> -	
	Name: <u>Selena Nunez</u>	Title Sr. Office	
	Signature: <u>Sellua Nunez</u>		96
anpwr	e information required under Sections tted. it need not be duplicated and re	VI. VIII. V. and XI above has b submittes - Please show the dat	een previously e an <u>derioanterio</u>
of th	e earlier submittal.		EXHIBIT
DISTR	IGUTION: Original and one copy to San	ta re with one corv to the appr	

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FORM C-108 Side 2

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The dota must be both in tobular and schematic form and shall include:
 - Lease name; Wall 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 coment used, hole size, top of cement, and now such top was determined.
 - (3) A description of the tubing to be used including its size, lining moterial, 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 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 cament or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and 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 aubmitted. Such proof shall consist of a copy of the legal advartisement 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, P. D. Box 2088, Santa Fa, New Mexico 87501 within 15 days.

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

SUPPLEMENT TO APPLICATION FOR AUTHORIZATION TO INJECT A. J. ADKINS #11

VII. Proposed Operations

- 1. During the first year of the project we intend to inject an average of 1600 BWPD (maximum 2500 BWPD) in order to reach fill-up quickly; the injection rate is anticipated to drop to an average of 1300 BWPD in the second year, 800 BWPD in the third, and 400 BWPD in the fourth and subsequent years. Total injection over the life of the project is estimated at 3500 KBW.
- 2. The planned injection system is a closed system.
- 3. Average injection pressure is expected to be approximately 800 psi, and maximum pressure will not exceed 1200 psi (0.2 psi/ft at a depth of 6000' to the bottom perforation).
- 4. In addition to re-injecting our produced water, we intend to use make-up water from Chevron's Eunice Monument South Unit waterflood. Water compatibility tests were performed to determine scaling tendencies between produced water from the Blinebry and the San Andres source (see attachment). Although the tests indicated a tendency for barite to precipitate, the amount will be very small. This minor precipitation, should it occur, can be remediated by standard acid stimulation techniques.
- 5. Not applicable.
- VIII. The reservoir into which water will be injected occurs in the Blinebry Formation, a Permian carbonate encountered at a depth of approximately 5800 feet on the subject lease. The Blinebry reservoir interval is approximately 200 feet in thickness, and is composed predominantly of dolomite with average porosities of 10-15% and average permeabilities of 1-10 md.

The only underground source of drinking water in the vicinity is the Ogalalla Formation, a Tertiary unit consisting of caliche, sand and gravel which extends from the surface to a depth of approximately 200'.

IX. The planned completion program for the injection well includes the perforating approximately 100 net feet, acidizing the perfs, and applying a small proppant fracture (~20K gallons of fluid and ~50K pounds of sand) for the purpose of stimulating the near-wellbore region.

- X. As the well has not yet been drilled no logs are available. We intend to run a basic suite of open-hole logs which will be forwarded to the state upon completion of the well. We will not conduct any production tests, as the sole purpose of the well is water injection.
- XI. Analyses are being obtained and will be submitted at the hearing.
- XII. There are no indications of open faults or other hydrological connections between the proposed injection interval and the shallower fresh water zones.

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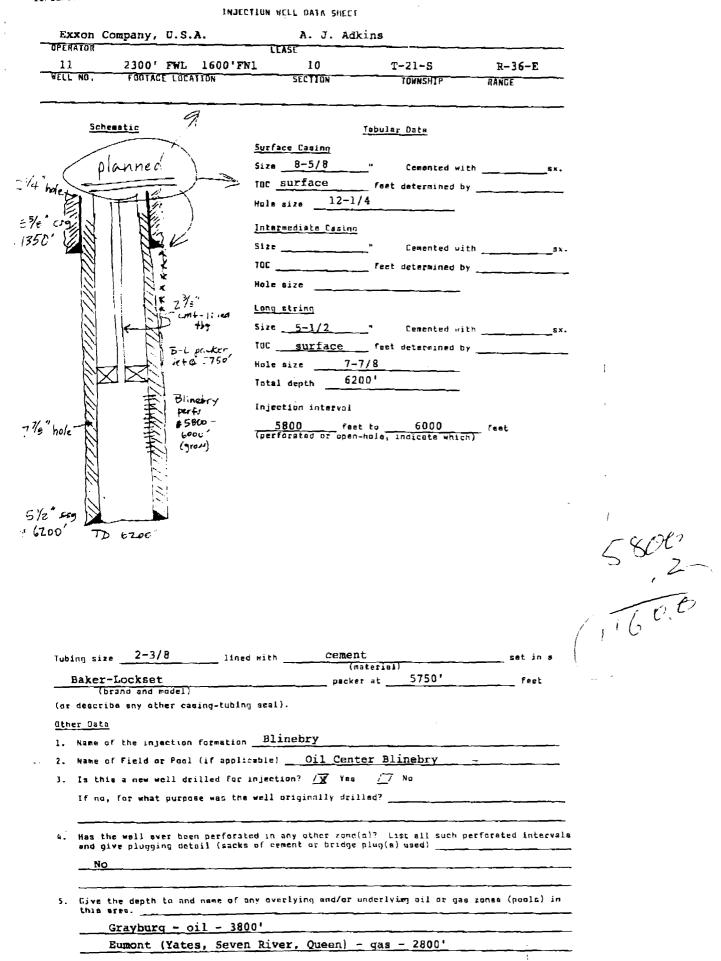
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WELLS WITHIN 1/2 MILE RADIUS OF PROPOSED ADKINS/KNOX (BLBY) INJECTORS LEA CO, NEW MEXICO

	OPERATOR	WELL NAME	ST	SEC /	FOOTAGE	DATE	DEPTH		COMPLETION (PERFS)		DEPTH (FT)	CMT (500)
T-21-5, 8,38-8]			_								
30025-20007	Sun Qi	J A Akons #8	CO3	3	890' FSL, 2289' FEL	8/17/63	6300	00 01	58 59-6092 5859-6184	8-5/8* 4-1/2*	1 29 6 6300	500 650
30025-26069	Oryx Energy	JAAluens #10	.Gas	3	880' FSL, 1850' FWL	11/1 /78	5319	00 01	5974-6259 2983-3060	8-5/8- 5-1/2-	1 304 6 300	600 1450
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30025-20166	Еххол Согр	John D Knox #9	Oli	10	330' FNL, 990 ' FEL	1 0/29/0 3	8220	00 01 02	5875-5883 5875-6069 5225-5308	7-6/8* 4-1/2*	1991 6200	450 500
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30025-20331	Exxon Corp	John D Knox #10	Ø1	10	1650' FNL, 1752' FEL	10/31/ 63	6230	00 01	5887-5949 5871-6090	7-5/8" 4-1/2"	1323 6230	700 500
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3 0025- 20701	Exam Corp	A J Adkins #9	51	10	1650' FNL, 990' FW L	10/ 26/64	5960	00	5 832-5926	7-6/9" 4-1/2"	1363 6960	450 600
30025-2070 6	Εχχάη Corp	John D Knox #12	Ğsa	10	990' FSL, 1652' FEL	8/24 /64	6020	00 01 02 03	5890-5896 5890-5944 2779-3306 5890-5896	7-5/8* 4-1/2*	1353 6020	460 525
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Water Analysis Report from Petrolite Corporation

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Note 1: When assessing the seventy of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO2 Pressure is absolute pressure. Yotal Pressure is gauge pressure.

Adkins-Knox Waterflood Project

New Mexico EOR Tax Incentive Application

Geologic Summary

See Form C-108, Item VIII.

Project summary

The proposed Adkins-Knox Waterflood Project consists of the drilling of two water injection wells, one on the A. J. Adkins lease and the other on the J. D. Knox lease, both operated by Exxon, in order to form two contiguous inverted (i. e., injector-centered) "five-spot" patterns; given this arrangement, the injectors will support a total of six producers. All injection will occur in the Blinebry Formation at an average depth of 5800' and an average thickness of 200'. The two injectors will be served from a single facility located on the Knox lease.

Of the intended six producers, three are currently producing from the Blinebry, one is temporarily abandoned (also completed in the Blinebry), and two are currently producing from the Eunice gas zone, having previously produced from the Blinebry. The one TA'd well and the two plugged-back producers will be returned to Blinebry production as soon as response is seen in those wells currently producing.

Make-up water for the purpose of reservoir fill-up will be obtained from either Chevron's Eunice Monument South Unit, or from Rice Engineering, depending on economic viability and reservoir compatibility. Peak make-up water usage of approximately 4000 BWPD will occur in the first year of the project in order to achieve fill-up as soon as possible, and will subsequently diminish to approximately 300 BWPD in the fourth year.

We anticipate a project life of approximately 15 years, with total produced reserves of 500 KBO. Project implementation will incur capital investments of approximately \$1M.

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A. J. Adkins Well No. 11 Lea County, New Mexico Copies of NMOCD Form C-108 were sent to the following by Certified Mail on November 12, 1996.

Surface Owner

Milard Deck c/o Nations Bank Texas 1777 NE Loop 410, Suite 1250 San Antonio, TX 78217

Offset Operators

Arco Permian P. O. Box 1610 Midland, TX 79702

Conoco Inc. 10 Desta Drive West Midland, TX 79705

Texaco E&P P. O. Box 3109 Midland, TX 79702 David H. Arrington Oil & Gas, Inc. 214 West Texas, Suite 400 Midland, TX 79701

Devon Energy Corporation 20 North Broadway Suite 1500 Oklahoma City, OK 73102

Texas Crude Inc. P. O. Box 56586 Houston, TX 77256-6586

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Chevron, U.S.A. Incorporated P. O. Box 1150 Midland, TX 79702

Oryx Energy P. O. Box 2880 Dallas, TX 75221

Exxon Corp.

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Sciena Q. Nunez Regulatory Compliance - Permits

		EXXON ENV & REG	Ø 019
11/12/9 Energ	96 TUE 17:38 FAX 6199 IV AND MINERALS DEPARTMENT	OIL CONSERVATION DIVISION ACITY Officer actual actual BTATE UNID DIVICE INJURIE	FORM C-100 Revised 7-1-81
APPLICA	TION FOR AUTHORIZATION TO INJ	DECT	ase 11665
I.	Purpose: Secondary Reco Application qualifies for	overy C Pressure Maintenance) r administrative approval? []yes	Disnoaal 🔲 Storage
11.	Operator: Exxon Compan		
	Address: P. O. Box 16	00	
	Contect party: Selena Nu	nez Phone:	(915) 688-7899
111.	Well data: Complete the dat proposed for any	a required on the reverse side of ection. Additional sheets may be	this form for each well attached if necessary.
IV.	Is this an expansion of an e If yes, give the Division or	existing project? 🛄 yes 🗶 der number authorizing the project	ng t
۷.	injection well with a one-ha) all wells and leases within two (alf mile radius circle drawn around the well's area of review.	biles of any proposed d each proposed injection
* VI.	 penetrate the proposed inject well's type, construction, constructi, construction, construction, construction, construction, const	on all wells of public record with tion zone. Such data shall includ date drilled, location, depth, reco well illustrating all plugging data	de a description of each
VII-	Attach data on the proposed	operation, including:	
	 Whether the system i 3. Proposed average and 4. Sources and an approtection is for 5. If injection is for at or within one withe disposal zone 	A maximum daily rate and volume of a open or closed; a maximum injection pressure; apriate analysis of injection fluid sation if other than reinjected pro disposal purposes into a zone not bile of the proposed well, attach a formation water (may be measured o as, nearby wells, etc.).	d and compatibility with oduced water; and productive of oil or gas a chemical analysis of
• ¥I II.	detail, geological name, thi bottom of all underground so total diasolved solids conce	al data on the imjestion-some inclu cknass, and depth. Give the geolo purces of drinking water (aquifers intrations of 10,000 mg/1 or less) by such source known to be immediat	ogic name, and depth to containing waters with overlying the groupsed
IX.	Describe the proposed stimul	ation program, if any.	
• x.	Attach approoriate logging e with the Division they need	nd test data on the well. (If we. Not be resubmitted.)	ll logs have been filed
• XI.	Attach a chemical analysis c available and producing) wit locution of wells and dates	of fresh water from two or more fro thin one mile of any injection or o samples were taken.	esh water wells (if disposal well showing
XII.	exemined available geologic	ls must make an aff:rmstive statem and engineering of-a and find no m metion between the lisposal zone m	evidence of doan faults
XIII.	Applicants must complete the	"Proof of Natice" section on the	reverse side of this form.
XIV.	Certification		
	I hereby certify that the hr to the best of my knowledge	•	
	Name: <u>Selena Nunez</u>		Office Assistant
	Signature: <u>Cloud</u>	Null Date: 1	1/12/96
submi	né information required under Itted, it need not be duplicat ne earlier submittal.	Sections VI, VIII. V, and XI above ted and resubmitted. Please show	the date and EXHIBIT
<u> 11510</u>		The to State Co with the same to a	

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DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropridistrict office.

FORM C-108 Side Z

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 tobular and schematic form and shall include:
 - 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, sucks of coment 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 Sheats 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 name of the next higher and next lower oil or gas zone in the area of the well, if any.
- XIV. PRODE OF NOTICE

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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 internated parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 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 film by checkions or requests for hearing of administrative applications within 15 down the data this application was mailed to them.

SUPPLEMENT TO APPLICATION FOR AUTHORIZATION TO INJECT J. D. KNOX #13

VII. Proposed Operations

- 1. During the first year of the project we intend to inject an average of 1600 BWPD (maximum 2500 BWPD) in order to reach fill-up quickly; the injection rate is anticipated to drop to an average of 1300 BWPD in the second year, 800 BWPD in the third, and 400 BWPD in the fourth and subsequent years. Total injection over the life of the project is estimated at 3500 KBW.
- 2. The planned injection system is a closed system.
- 3. Average injection pressure is expected to be approximately 800 psi, and maximum pressure will not exceed 1200 psi (0.2 psi/ft at a depth of 6000' to the bottom perforation).
- 4. In addition to re-injecting our produced water, we intend to use make-up water from Chevron's Eunice Monument South Unit waterflood. Water compatibility tests were performed to determine scaling tendencies between produced water from the Blinebry and the San Andres source (see attachment). Although the tests indicated a tendency for barite to precipitate, the amount will be very small. This minor precipitation, should it occur, can be remediated by standard acid stimulation techniques.
- 5. Not applicable.
- VIII. The reservoir into which water will be injected occurs in the Blinebry Formation, a Permian carbonate encountered at a depth of approximately 5800 feet on the subject lease. The Blinebry reservoir interval is approximately 200 feet in thickness, and is composed predominantly of dolomite with average porosities of 10-15% and average permeabilities of 1-10 md.

The only underground source of drinking water in the vicinity is the Ogalalla Formation, a Tertiary unit consisting of caliche, sand and gravel which extends from the surface to a depth of approximately 200'.

IX. The planned completion program for the injection well includes the perforating approximately 100 net feet, acidizing the perfs, and applying a small proppant fracture (~20K gallons of fluid and ~50K pounds of sand) for the purpose of stimulating the near-wellbore region.

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- X. As the well has not yet been drilled no logs are available. We intend to run a basic suite of open-hole logs which will be forwarded to the state upon completion of the well. We will not conduct any production tests, as the sole purpose of the well is water injection.
- XI. Analyses are being obtained and will be submitted at the hearing.
- XII. There are no indications of open faults or other hydrological connections between the proposed injection interval and the shallower fresh water zones.

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WELLS WITHIN 1/2 MILE RADIUS OF PROPOSED ADKINS/KNOX (BLBY) INJECTORS LEA CO, NEW MEXICO

	OPERATOR		ST	SEC #	FOOTAGE	DATE	DEPTH		COMPLETION (PERFS)	C30	DEPTH (FT)	CMT (SX)
21-5, 9-36-6	3											
30025-20007	Sun Oli	J A Akaris #8	Off	э	890' FSL, 2289' FEL	6/17/63	6300	00	5859-6092	8-5/8"	1296	600
								01	6859-6184	4-1/2*	6300	650
0025-26069	Qryx Energy	J A Akana #10	Gas	3	660' FSL, 1650' FWL	11/1 /78	6319	00	5874-8259	8-5/8*	1304	600
								01	2083-3060	6-1/2 "	6300	1450
0025-30099	Sun Exploration	J A Akons #16	Dil	Э	928 FSL, 1960' FWL	2/ 3/88	70 0 0	00	6590-6913	13-3/8*	1363	1425
										6-5/9" 5-1/2"	4900 7000	1850
0025-20186	Еххол Согр	John D Knex #9	Ōn	10	330' FNL, 990' FEL	10/28/63	6220	00	6875-5893	7-5/84	1331	450
				•			VLLD	01	5875-0059	4-1/2"	6200	500
								02	5225-5308	• •••=	0200	
0025-20282	Еххол Согр	Blinebry OE Com No 1 #1	Oil	10	330' FNL, 2310' FWL	7/26/\$3	6180	00	5906-5916	7-5/8"	1 347	450
								01	5906-6 110	4-1/2"	6180	500
0025-20305	Exxon Com	John D Knox #11	TA	10	2310' FSL, 330' FEL	11/23/63	6225	00	5812-5945	7-6/9*	1320	575
					×					4-1/2*	8225	500
10025-20331	Exxon Corp	John D Knox #10	Ol	10	1650' FNL, 1752' FEL	10/31/63	6230	00	5887-6949	7-5/8"	1323	700
								01	E871-6090	4-1/2"	6230	500
0025-20700	Exxon Corp	A J Adkins #8	ÐI	10	2310' FSL, 2260' FWL	8/13/64	6050	00	5881-5687	7-5/8*	1364	625
								00	6849-5887	4-1/2	6050	600
									5905-5887			
0025-20701	Excen Corp	A J Adkina #9	51	10	1850' FNL, 990' FWL	10/26/84	5960	00	5832-59 26	7-5/8"	1363	450
										4-1/2*	508Q	600
0025-20708	Exxon Corp	John D Knax #12	Ges	10	990' FSL, 1652' FEL	6/24/84	6020	00	6890-5896	7-5/8*	1363	450
								01 02	5890- 5944 2778-3306	4-1/2*	6020	525
								02	2778-3308 5890-5898			
0025-20591	Atlantic Richflaid	State L #6	ON I	11	1850' FNL, 330' FWL	11/16/64	6200	00	5760-5864	8-6/8°	1313	660
										5-1/2*	6109	473

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11/12/98 TUE 17:40 FAX 6199

EXXON ENV & REG

Sent by: TRETOLITE LAB 9155637942

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Water Analysis Report from Petrolite Corporation

	Mixes at 100°F and 0 psi Predictions of Saturation Index and Amount of Scale in Ib/1000bbl											
Mix Waters		Calcite CO2 CaCO3			Gypsum CaSO4.2H2D		Anhydrite CaSO4		stite :04	Bar BaS	·	
16196	16197	jaq	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
0%	100%	7.64	0.48	127	-0.20		-0.20		N/A		1.28	0.28
10%	90%	7.19	0.59	149	-0.09		-0.08		N/A		1.05	0.24
20%	80%	6.69	0.63	144	-0.04	[-0.03		N/A		0.88	0.20
30%	70%	6.14	0.83	132	-0.01	1	0.01	25	N/A		0.73	0.16
40%	60%	5.54	0.63	117	0.02	47	0.04	82	N/A	1	0.59	0.12
50%	50%	4.90	0.62	101	0.04	94	0.07	125	N/A		0.45	0.09
60%	40%	4.21	0.60	85	0.06	128	0.09	167	N/A		0.29	0.05
70%	30%	3.48	0.5 8	69	0.07	154	0.11	181	N/A		0.12	0 02
80%	20%	2.71	0.58	55	0. 08	173	0.12	199	N/A		-0.10	
90%	10%	1.69	0.55	42	0.09	186	0.14	212	N/A	1	-0.45	
100%	0%	1.03	0.60	31	D.10	196	0,15	222	N/A	1	N/A	

Note 1: When assessing the severity of the scale problem, both the saturation index (Si) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3' CO2 Pressure is absolute pressure. Yotal Pressure is gauge prossure.

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Adkins-Knox Waterflood Project

New Mexico EOR Tax Incentive Application

Geologic Summary

See Form C-108, Item VIII.

Project summary

The proposed Adkins-Knox Waterflood Project consists of the drilling of two water injection wells, one on the A. J. Adkins lease and the other on the J. D. Knox lease, both operated by Exxon, in order to form two contiguous inverted (i. e., injector-centered) "five-spot" patterns; given this arrangement, the injectors will support a total of six producers. All injection will occur in the Blinebry Formation at an average depth of 5800' and an average thickness of 200'. The two injectors will be served from a single facility located on the Knox lease.

Of the intended six producers, three are currently producing from the Blinebry, one is temporarily abandoned (also completed in the Blinebry), and two are currently producing from the Eunice gas zone, having previously produced from the Blinebry. The one TA'd well and the two plugged-back producers will be returned to Blinebry production as soon as response is seen in those wells currently producing.

Make-up water for the purpose of reservoir fill-up will be obtained from either Chevron's Eunice Monument South Unit, or from Rice Engineering, depending on economic viability and reservoir compatibility. Peak make-up water usage of approximately 4000 BWPD will occur in the first year of the project in order to achieve fill-up as soon as possible, and will subsequently diminish to approximately 300 BWPD in the fourth year.

We anticipate a project life of approximately 15 years, with total produced reserves of 500 KBO. Project implementation will incur capital investments of approximately \$1M.

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J. D. Knox Well No. 13 Lea County, New Mexico

Copies of NMOCD Form C-108 were sent to the following by Certified Mail on November 12, 1996.

Surface Owner

Milard Deck c/o Nations Bank Texas 1777 NE Loop 410, Suite 1250 San Antonio, TX 78217

Offset Operators

Arco Permian P. O. Box 1610 Midland, TX 79702

Conoco Inc. 10 Desta Drive West Midland, TX 79705

Texaco E&P P. O. Box 3109 Midland, TX 79702 David H. Arrington Oil & Gas, Inc. 214 West Texas, Suite 400 Midland, TX 79701

Devon Energy Corporation 20 North Broadway Suite 1500 Oklahoma City, OK 73102

Texas Crude Inc. P. O. Box 56586 Houston, TX 77256-6586 Chevron, U.S.A. Incorporated P. O. Box 1150 Midland, TX 79702

Oryx Energy P. O. Box 2880 Dallas, TX 75221

Exxon Corp.

Selena Q. Nunez Regulatory Compliance - Permits