STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

#### CIL CONSERVATION CIVISION FUEL CALL BILL AND FUEL CALL BILLION FUEL OF HER CALLER

FORM C-108 Reviews 7-1-81

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APPLICA	TION FOR AUTHORIZATION TO INJECT
t.	Purpose: A Secondary Recovery Pressure Haintenance Disnosol Storage Application qualifies for administrative approval? yesna
11.	Operator: Exxon Company, U.S.A.
	Address: P. O. Box 1600
	Contact party: Selena Nunez Phane: (915) 688-7899
111.	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.
IV.	Is this an expansion of an existing project?  yes
۷.	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.
• 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.
VII.	Attach data on the proposed operation, including:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and</li> <li>If injection is for disposal purposes into a zone not productive of all 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.).</li> </ol>
• <b>VIII</b> .	Attach appropriate geological data on the injection-some including appropriate lithologic detail, geological 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 source known to be immediately underlying the injection interval.
Ix-	Describe the proposed stimulation program, if any.
• X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
• XI.	Attach a chemical analysis of fresh water from two or more freeh water wells (if avai)able and producing) within one mile of any injection or disposal well snowing location of wells and dates samples were taken.
XII.	Applicants for discosal wells must make an afformative statement that they have examined available geologic and engineering corpland find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification
• If th	I hereby certify that the information submittee with this application is true and correct to the best of my knowledge and usilef. Name: <u>Selena Nunez</u> Signature: <u>Selena Nunez</u> oate: <u>11/12/96</u> Title Sr. office Assistant Date: <u>11/12/96</u>
submi of th OISTR	tted. it need ont be duplicated end rr e esrlier supmittal. TOUTION: Original and and and copy to ball Case No. 11665
d \$ = > 0	Hrg. Date: December 5, 1996

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; Well No.; location by Section, Township, and Ronge; and Footage location within the section.
  - (2) Each casing string used with its size, setting depth, sacks of coment used, hale size, top of coment, and now such top was determined.
  - (3) A description of the tubing to be used including its size, lining motorial, 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 dats for each well.

- 8. 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 sust be submitted. 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 retes 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, Sents Fo, New Mexico 87501 within 15 days.

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

Z

## 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. see CXLibi+1
- 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.

- Will be Submitted to NMOCD of for a relachy filed. 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.
  - Analyses are being obtained and will be submitted at the hearing. XI.
  - There are no indications of open faults or other hydrological connections XII. between the proposed injection interval and the shallower fresh water zones.

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ir no, for what purpose was the well originally prilled?

5. Give the depth to and name of any overlying end/or underlying oil or gas zones (pools) in this eres.

Grayburg - oil - 3800'

Eumont (Yates, Seven River, Queen) - gas - 2800'

#### WELLS WITHIN 1/2 MILE RACIUS OF PROPOSED ADMINISTRINGX (BLIFY) RULECTORS LEA CO. NEW MEDICO

			-			DATE		<b>.</b>	COMPLETION		DEPTH	CMT
API #	OPERATUR	WELL NAME	ল	SEC /	FOOTAGE	DRILLED	DEPTH		(PENPS)	C50	(FT)	1570
T-21-5, #38-8	]											
20075-20007	Sun (18	.t & Akana JA	02	1	890' FSL 2288' FEL	8/17/63	6300	00	5658-6092	8-5/8"	1296	500
700x1-40001				-				01	5859-8184	4-1/2"	6390	850
30025-25069	Gryx Energy	J A Alterna #10	Gas	3	460' PSL, 1650' FWL	11/1/78	6318	00	587 <b>4-6</b> 259	8-5/8*	1304	600
	••••							01	2983-3050	5-1/2*	6300	1450
30025-30099	Sun Exploration	J Å Åkans #10	Ca	з	928 FSL, 1980' FWL	2/3/88	7000	00	8550-8813	13-3/8"	1363	1425
										0-6/8"	4900	1650
										2-114-	/000	1270
30025-20166	Exton Corp	John D Knox #3	01	10	330' FNL, 990' FEL	10/25/63	6120	00	5875-6493	7-6/8"	1331	450
		,						01	5875-0069	4-1/2"	6200	500
								92	0223-9308			
30025-20262	Exxon Corp	Blinsbry Oil Com No 1 #1	Ċ.	10	330" FNL 2310" FWL	7/25/53	6190	00	5906-5918	7-5/8*	1347	450
								01	5506-6110	4-1/2"	6180	500
30025-20306	Exxon Corg	John D Knex #11	TA	10	2310' FSL, 330' FEL	11/23/63	6225	00	5812-6945	7-5/8*	1328	575
										4-1/2"	8225	500
30025-20331	Exam Corp	John D Knex #10	0#	10	1650' FNL, 1752' FEL	10/31/63	8230	00	5887-5949	7-5/8*	1323	700
								01	5871-6090	4-1/2*	6230	500
30025.20200	Exxen Com	A J Adida JB	Oli	10	2310' FSL 2280' FWL	B/13/64	6050	00	5881-5887	7-6/8*	1364	625
								00	5849-5687	4-1/2"	6050	600
									5805-6887			
30025-20701	Excent Coro	A J Adkins #9	SI	10	1650' FNL, 990' FWL	10/25/54	5960	ç0	5832-5926	7-6/ <b>8*</b>	1363	450
										4-1/2"	5960	600
30025-20708	Extran Corm	John D Koox #12	ĜM	10	990' FSL, 1652' FEL	5/24/64	6020	00	5590-5894	7-5/8"	1353	450
								01	5580-5944	4-1/2°	6020	525
								02	2778-3308			
								03	5890-5886			
30025-20591	Atlantic Richfield	State L #6	CM	11	1850' FNL, 330' FWL	13/15/84	6200	00	5760-5884	8-5/8*	1313	560
										5-1/2*	6799	473

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# Water Analysis Report from Petrolite Corporation

		Pred	ictions	of Satur	ation In	dex and	Amount	of Scal	e in 1b/10	DOODDI		
			Cai	cite	Gype	sum	Anhy	drite	Cele	stite	Bai	ite
Mix W	laters	CO2	CaC	:03	Ca804	.2H2O	ÇaS	iO4	Sr8	04	Bas	104
16196	18197	pei	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. <b>09</b>		-0.08		N/A	1	1.05	0.24
20%	80%	8.89	0.63	144	-0.04		-0,03		N/A		0.88	0.20
30%	70%	6.14	0.63	132	-0.01		0.01	25	N/A		0.73	D.16
40%	60%	5.54	0.63	117	0.02	47	0.04	82	N/A		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	157	NA		0.29	0.05
70%	30%	3.48	0.58	69	0.07	154	0.11	181	N/A		0.12	0.02
80%	20%	2.71	0.56	55	0.06	173	0.12	199	N/A		-0.10	
90%	10%	1.89	0.55	42	0.09	186	D.14	212	N/A		-0.45	
100%	0%	1.03	0.50	31	0.10	196	0.15	Z22	NA		N/A	

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

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

Note 3: CO2 Pressure is absolute pressure. Total 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

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 ١

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

Exxon Corp.

Selena Q. Nunez Regulatory Compliance - Permits

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

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APPLICA	TION FOR AUTHORIZATION	TO INJECT	
I.	Purpose: Application qualifi	y Recovery Pressure Maintenanc es for administrative approval?	e [] Disnosal [] Storage ] yes [] no
11.	Operator: _ Exxon Co	ompany, U.S.A.	
	Address: P. O. Bo	<b>5x 1600</b>	
	Contect party: Seler	na Nunez Ph	ane: (915) 688-7899
111.	Well datu: Complete t proposed f	he data required on the reverse sid or injection. Additional sheets wa	e of this form for each well y be attached if necessary.
IV.	Is this an expansion a If ves, give the Divis	f an existing project?  yes ion order number authorizing the pr	X na oject
۷.	Attach a map that iden injection well with a well. This circle ide	tifies all wells and leases within one-half mile radius circle drawn a ntifies the well's area of review.	two miles of any proposed found each proposed injection
VI.	Attach a tabulation of penetrate the proposed well's type, construct a schematic of any plu	deta on all wells of public record i injection zone. Such data shall i ion, date drilled, location, depth, igged well illustrating all plugging	within the area of review which ncluds a description of each record of completion, and detail.
VII.	Attach data on the pro	posed operation, including:	
	<ol> <li>Proposed avera</li> <li>Whether the sy</li> <li>Proposed avera</li> <li>Sources and an the receivin</li> <li>If injection i at or within the disposal literature,</li> </ol>	ge and maximum daily rate and volum atem is open or closed; ge and maximum injection pressure; appropriate analysis of injection of formation if other than reinjecte s for disposal purposes into a zone one mile of the proposed well, att zone formation water (may be measu studies, nearby wells, etc.).	e of fluida to be injected; fluid and compatibility with d produced water; and not productive of ail or gas ach a chemical analysis of red or inferred from existing
¥III.	Attach appropriate geo detail, geological nam bottom of all undergro total diasolved solids injection zone as well injection interval.	elogical data on the <del>injection-a</del> one me, thicknass, and depth. Give the mund sources of drinking water (aqui a concentrations of 10,000 mg/l or 1 as any such source known to be imm	including appropriate lithologic geologic name, and depth to fers containing waters with ess) overlying the proposed ediately underlying the
12.	Describe the proposed	stimulation program, if mny.	
x.	Attach appropriate log with the Division they	ging and test data on the well. (I , need not be resubmitted.)	f well logs have been filed
XI.	Attach a chemical anal available and producin location of walls and	ysis of fresh water from two or mor ng) within one mile of any injection dates samples were taken.	e fresh water wells (if or disposal well shawing
XII.	Applicants for discose exemined available geo or any other hydrologa source of drinking wat	el wells must make an affirmative at plogic and engineering d'-a and find to connection between the disposal z ter.	etament that they have no evidence of open faults one and any underground
XIII.	Applicants must comple	ete the "Proof of Natice" section on	the reverse side of this form.
XIV.	Cartification		
	I hereby certify that to the best of my know	the information submitted with this	application is true and correct
	Name: <u>Selena Nune</u>	Z Title	Sr. Office Assistant
	Signature:	ualluez Date	

If the information required under Sections VI, VIII. 1, and XI above has been by submitted, it need not be duplicated and resubmitted. Please show the date and of the earlier submittal.

DISIRIDUTION: Original and one copy to Santz Fe with one conv to the approarts district office.

See EXHIBIT

ALL ASSAULT

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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 shell include:
  - Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
  - (2) Each coming string used with its size, setting depth, sucks 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 material, and setting depth.
  - (4) The name, model, and setting doubt 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 itema 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.
- KIV. PROOF 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 sile 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 epplicant;
- (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. O. Box 2008, 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 over inclines or requests for hearing of administrative applications within 15 devention fre fits this application was a mailed to them.

## SUPPLEMENT TO APPLICATION FOR AUTHORIZATION TO INJECT J. D. KNOX #12 14

#### 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. see exhibit 1
- 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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will be submitted to NANOCD, if not already filed

- 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.

Exxon Company, U.S.A.	J. D. Knox		
OPERAIOR	LEASE T-	21-5 P=36-R	
WELL NO. FOOTAGE LOCATION	SECTION I	WNSHIP RANGE	- ( Addiel
			- Actaal
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B cmt-11 red	Size <u>5-1/2</u>	emented with	i 1 <b>%.</b>
	TOC feet de	termined by	
B-L prinker jeta 7750	Hole size 7-7/8		
	Total depth 6200'		
Blinetry	Injection interval		
R perfr		000 fest	
7%9 hole \$ 500	(performted or open-hole, ind	icate which)	
(mar)			
5/2 500 TD 6200'			
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#### WELLE WITHIN 1/2 MILE RADIUS OF PROPOSED ADKINE/KNOX (BLBY) FUECTORS LEA CO. NEW MEXICO

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· · · · · · · · · · · · · · · · · · ·						DATE			COMPLETION		DEFTH	CNIT
API	OPERATOR	WELL NAME	51	SEC #	FOOTAGE	DRILLED	DEFTH		(PERFS)	C50	(FT)	(500)
T-21-5,9-30-4	3											
10016-30007	San 08	J & Akuna #6	0	3	890' FSL 2289' FEL	6/17/63	6300	ða.	5859-0092	L.5/8"	1296	500
30000-00007				-				Q1	5859-6184	4-1/2*	6300	850
30025-26068	Oryx Energy	J A Akara #10	Ges	3	680" FSL 1650" FWL	11/1/78	6310	00	5874-8259	8-5/8*	1304	600
								01	2983-3060	5-1/2*	8200	1450
30025-30059	Sun Exploration	J.A Akans #16	0i	3	928 FSL, 1960' FWL	2/3/88	7000	00	6590-8913	13-3/8*	1363	1425
										8-5/8"	4900	1650
										5-1/2"	7000	1270
30025-20166	Exxon Corp	John D Knex #9	<b>CH</b>	10	330' FNL 990' FEL	10/29/83	6220	00	5875-5893	7-5/8*	1331	460
								Ô1	5875-8069	4-1/2"	8200	500
		•						02	5226-530			
30025-20282	Еккол Согр	Senabry OE Com No 1 #1	Oil	- 10	330' FNL, 2310' FWL	7/26/83	6180	00	5906-5916	7-5/6*	1347	450
								61	5806-6110	<b>4-1/2</b> *	6150	500
30025-20305	Exxon Corp	John O Knox #11	TA	10	2310' FSL, 330' FEL	11/23/63	6125	00	6812-5945	7-6/8*	1328	575
										4-1/2"	6225	500
30025-20331	Exxon Corp	John D Knox #10	ON	10	1650' FNL, 1752' FEL	10/31/63	6230	00	5887-6949	7-5/8*	1323	700
								01	5871-6090	4-1/2*	6230	500
30025-20700	Exxon Corp	A J Adkins #8	່ວາ	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
									5005-5887			
30025-20701	Excesh Corp	A J Adkins #9	51	10	1650' FNL, 990' FWL	10/26/84	5960	00	5832-5928	7-6/8°	1353	450
										4-1/2*	5960	600
30025-20706	Extran Corp	John D Knax #12	Ges	10	880" FSL, 1652" FEL	6/24/84	6020	00	5890-5896	7-5/8°	1362	450
	,							01	5890-5944	4-1/2".	6020	528
								02	2778-3305			
								03	5690-5898			
30025-20691	Atlantic Richfield	State L #6	. 07	11	1850' FNL, 330' FWL	11/15/64	6200	00	5750-5964	8-5/8°	1313	660
										5-1/2	6199	473

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## Water Analysis Report from Petrolite Corporation

		Pred	ictions	of Satur	ation In	dex and /	nd 0 pai A <i>mour</i> n	of Scale	in Ib/1	000661				
Mix W	aters	CO2	Calcite CaCO3		Calcite 02 CaCO3		Gypsum CaSO4.2H2O		Anhydrite CaSO4		Celestite Sr804		Bai Bas	
16196	16197	psi	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	1	-0.08		NA	[	1.05	0.24		
20%	80%	8.69	0.83	144	-0.04		-0.03	1	N/A		0.88	0.20		
30%	70%	6.14	0.63	132	-0.01	Į.	0.01	25	NA	1	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	1	0.45	0.09		
60%	40%	4.21	0.60	85	0.06	128	0.08	167	N/A	1	0.29	0.05		
70%	30%	3.48	0.58	69	0.07	154	0.11	181	N/A	1	0 12	0.00		
80%	20%	2.71	0.58	55	0.08	173	0.12	199	N/A		-0.10	0.02		
90%	10%	1.89	0.55	42	0.09	186	0.14	212	N/A		-0.45			
100%	0%	1.03	0.80	31	0.10	196	0.15	222	N/A		N/A			

Note 1: When assessing the seventy of the scale problem, both the saturation index (\$1) 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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## 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

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

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 ł