BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
CASE NO. 3
OIL CONSERVATION DIVISION
CASE NO. 8629-8630
RAY WESTALL CASES NOS. 8629 AND 8630

EXHIBIT NO. __

	OPERATOR	ORDER NO.	DATE	DESCRIPTION
(1)	V.S. Welch	R-3670	2/04/69	NW/4 & N/2 SW/4 Sec. 27, T18S, R31E
(2)	Texaco	R-3686	2/28/69	Sec. 32, T19S, R32E
(3)	L.C. Squires	R-3725	4/16/69	Secs. 2, 3, 9, 10, 11, T20S, R32E, and Secs. 7, 17, 18, 19, 20, T20S, R33E
(4)	Amoco	R-3771	5/28/69	Units D, E, and P, Sec. 27, T18S, R31E
(5)	Tenneco	R-3775	6/10/69	SW/4 NW/4 Sec. 19, T19S, R32E
(6)	V.S. Welch	R-3778	6/10/69	NE/4 Sec. 28, T18S, R31E
(7)	Amoco	R-3788	7/07/69	Secs. 28 & 33, T19S, R32E
(8)	Mask, Jennings, Keohane & Westall	R-3800	7/15/69	E/2 NW/4 and NE/4 Sec. 2, T19S, R31E
(9)	Union of California	R-3813	8/14/69	NE/4 Sec. 31, T18S, R31E
(10)	Gulf	R-3909	1/14/70	Sec. 22, T18S, R31E
(11)	Keohane & Westall	R-4015	8/21/70	Lot 4 and SW/4 NW/4 Sec. 2, T19S, R31E
(12)	D.C. Collier	R-4016	8/25/70	Units A, C, E, G, I, K, M, Sec. 30, T19S, R31E
(13)	Great Plains Land Co.	R-4165	7/28/71	NW/4 NW/4 Sec. 31, T18S, R31E
(14)	LaRue & Muncy	R-5245-A	1/25/77	Units F and G Sec. 33, T18S, R30E
(15)	H.E. Yates	R-5246-A	1/25/77	Units A, B, G, H, J, Sec. 32, T18S, R30E
(16)	H & S Oil Co.	R-5247-A	8/24/76	Unit C Sec. 33, T18S, R30E

(17)	Gene Snow	R-5248-A	8/24/76	Unit L Sec. 32, T18S, R30E
(18)	Marbob Energy Corp.	R-5249-A	8/24/76	Unit E Sec. 28, Units G and H, Sec. 29, T18S, R30E
(19)	Petroleum Development Corp.	R-5355	1/25/77	Unit I Sec. 16, T19S, R32E
(20)	Joe Don Cook	R-5472	6/21/77	Unit J Sec. 2, T19S, R31E
(21)	Flag-Redfern Oil Co.	R-6083	8/16/79	SW/4 Sec. 2, T19S, R31E
(22)	Amoco Production Co.	R-6134	10/10/79	Secs. 27, 34, and 35, T18S, R31E
(23)	Westall, Mask and Jennings	R-6279	3/11/80	SW/4 Sec. 23, S/2 Sec. 24, N/2 Sec. 25, E/2 E/2 and NW/4 Sec. 26, S/2 SW/4 and W/2 SE/4 Sec. 27, and N/2 NW/4 and SW/4 NW/4 Sec. 34, T18S, R31E
(24)	Flag-Redfern Oil Co.	R-6324	4/24/80	SE/4 SE/4 Sec. 3, T19S, R31E
(25)	Cavalcade Oil Corp.	R-6661	4/30/81	N/2 SW/4 Sec. 33, T18S, R30S

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4400
Order No. R-4016

APPLICATION OF DAVID C. COLLIER
FOR AN EXCEPTION TO ORDER NO. R-3221,
AS AMENDED, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:30 a.m. on August 19, 1970, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 25th day of August, 1970, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, David C. Collier, is the owner and operator of the Southern Federal Lease in Units A, C, E, G, I, K, and M of Section 30, Township 19 South, Range 31 East, NMPM, North Hackberry Yates-Seven Rivers Pool, Eddy County, New Mexico.

(3) That Order (3) of Commission Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place or in any manner which would constitute a hazard to any fresh water supplies and said disposal has not previously been prohibited.

(4) That the aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh water supplies designated by the State Engineer through disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(5) That the State Engineer has designated, pursuant to Section 65-3-11 (15), N.M.S.A., 1953 Compilation, all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(6) That the applicant seeks an exception to the provisions of the aforesaid Order (3) to permit the disposal of salt water produced by applicant's wells located on its Southern Federal Lease in Units A, C, E, G, I, K, and M of said Section 30 in an unlined surface pit located in said Unit A.

(7) That there appears to be no shallow fresh water in the vicinity of the subject pit for which a present or reasonably foreseeable beneficial use is or will be made that would be impaired by contamination from the subject pit.

(8) That the applicant should be permitted to dispose of water produced by applicant's wells located on the above-described lease in an unlined surface pit located in said Unit A.

IT IS THEREFORE ORDERED:

(1) That the applicant, David C. Collier, is hereby granted an exception to Order (3) of Commission Order No. R-3221, as amended, to dispose of water produced in conjunction with the production of oil or gas, or both, by its wells located on its Southern Federal Lease in Units A, C, E, G, I, K, and M of Section 30, Township 19 South, Range 31 East, NMPM, North Hackberry Yates-Seven Rivers Pool, Eddy County, New Mexico, in an unlined surface pit located in said Unit A.

(2) That the Secretary-Director of the Commission may by administrative order rescind such authority whenever it

reasonably appears to the Secretary-Director that such rescision would serve to protect fresh water supplies from contamination.

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

LOCATION SEC.	T.	R.	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	NIT-RATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	(CA+MG)/ (NA+K)	SPECIFIC CONDUCT-ANCE (UMHOS AT 25C)	SPECIFIC CONDUCT-ANCE CALC (UMHOS AT 18C)	RESIS-TIVITY MEAS. (OHM-M) AT DEG.C	RESIS-TIVITY CALC. (OHM-M AT 18C)	PH	RELIA-BILITY OF QW DATA
31	19	31	-	96,000.			1.109	-	-	174,000.	-	-	-		NREP
31	19	31	-	97,000.			1.109	-	-	174,000.	-	-	-		NREP
31	19	31	-	120,000.			1.130	-	-	199,000.	-	-	-		NREP
			-	-			-	-	-	-	-	-	-		MRCN
31	19	31	-	-			1.115	-	-	-	-	-	-		MRCN
31	19	31	-	-			1.116	-	-	-	-	-	-		MRCN
31	19	31	-	-			1.115	-	-	-	-	-	-		MRCN
31	19	31	-	-			1.115	-	-	-	-	-	-		MRCN
31	19	31	-	-			1.116	-	-	-	-	-	-		MRCN
31	19	31	-	-			1.112	-	-	-	-	-	-		MRCN
19	20	28	[illegible]	11,000.			1.016	22,000. *	.339	-	28,300.	-	.354	8.0	
5	21	27	-	17,000.			1.021	-	-	43,800.	-	-	-	6.3	QSTN
			-	-			-	-	-	-	-	-	-		ACID
5	21	27	-	18,000.			1.024	29,000. *	.777	-	39,500.	.310 24.0	.253	5.4	
5	21	27	HV	15,000.			1.018	-	-	39,900.	-	-	-		QSTN
5	21	27	HV	14,000.			1.018	-	-	39,300.	-	-	-		QSTN
5	21	27	HV	14,000.			1.020	-	-	39,500.	-	-	-		ACID
5	21	27	HV	14,000.			1.016	-	-	38,800.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	38,700.	-	-	-		
5	21	27	HV	14,000.			1.020	-	-	39,500.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	38,800.	-	-	-		
5	21	27	HV	14,000.			1.018	-	-	39,600.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	39,600.	-	-	-		
5	21	27	HV	14,000.			1.018	-	-	39,000.	-	-	-		
5	21	27	HV	14,000.			1.016	28,000. *	.298	38,800.	35,000.	-	.286	6.9	
5	21	27	HV	14,000.			1.016	-	-	39,600.	-	-	-		
5	21	27	HV	14,000.			1.018	-	-	39,800.	-	-	-		
5	21	27	HV	14,000.			1.020	-	-	39,800.	-	-	-		
5	21	27	HV	14,000.			1.016	28,000. *	.284	39,200.	35,100.	-	.285	6.9	
5	21	27	HV	14,000.			1.018	-	-	39,700.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	39,500.	-	-	-		
5	21	27	HV	14,000.			1.018	-	-	39,800.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	39,800.	-	-	-		
5	21	27	HV	14,000.			1.018	28,000. *	.334	39,500.	35,500.	-	.282	6.4	
5	21	27	HV	15,000.			1.016	29,000. *	.358	40,300.	36,500.	-	.274	6.3	
5	21	27	HV	14,000.			1.016	-	-	39,800.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	39,600.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	39,800.	-	-	-		
5	21	27	HV	13,000.			1.016	27,000. *	.299	-	34,300.	-	.291	7.4	
5	21	27	HV	13,000.			1.016	-	-	39,700.	-	-	-		
5	21	27	HV	14,000.			1.018	-	-	39,800.	-	-	-		
5	21	27	HV	14,000.			1.018	-	-	39,700.	-	-	-		
5	21	27	HV	14,000.			1.016	-	-	39,500.	-	-	-	6.7	
5	21	27	HV	14,000.			1.020	28,000. *	.326	39,200.	35,100.	-	.285	6.4	
3	21	26	-	180.			1.000 *	-	-	1,670.	-	-	-		MRCN
3	21	26	-	180.			1.000 *	-	-	1,690.	-	-	-		MRCN
3	21	26	-	190.			1.000 *	-	-	1,720.	-	-	-		MRCN
3	21	26	-	200.			1.000 *	-	-	1,850.	-	-	-		MRCN
3	21	26	-	210.			1.000 *	-	-	1,810.	-	-	-		MRCN
3	21	26	-	210.			1.000 *	-	-	1,820.	-	-	-		MRCN
3	21	26	-	210.			1.000 *	-	-	1,840.	-	-	-		MRCN
3	21	26	-	220.			1.000 *	-	-	1,890.	-	-	-		MRCN
3	21	26	-	230.			1.000 *	-	-	1,850.	-	-	-		MRCN

OBSERVATION WELL H_2O Analysis. 6

ILLEGIBLE

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

SE LO	LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM	TO	FORMATION	SAMP-LING METHOD	SILICA (SIO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)		BICAR-BONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)
1	31	19	31	12-15-66	3,734-	3,739	453CPRF	BB	-	-	-	-	62,000.	*	-	-
2	31	19	31	12-15-66	3,734-	3,739	453CPRF	BB	-	-	-	-	63,000.	*	-	-
3	31	19	31	12-15-66	3,734-	3,739	453CPRF	BB	-	-	-	-	75,000.	*	-	-
4																
5	31	19	31	10-21-71	1,490-	1,510	453CPRF	SS	-	-	-	-	-		-	-
6	31	19	31	10-21-71	1,510-	1,530	453CPRF	SS	-	-	-	-	-		-	-
7	31	19	31	10-21-71	2,970-	2,990	453CPRF	SS	-	-	-	-	-		-	-
8	31	19	31	10-21-71	2,760-	2,780	453CPRF	SS	-	-	-	-	-		-	-
9	31	19	31	10-21-71	3,260-	3,288	453CPRF	SS	-	-	-	-	-		-	-
10	31	19	31	10-21-71	3,760-	3,780	453CPRF	SS	-	-	-	-	-		-	-
11	19	20	28	06-19-62	866-		453CPRF	BB	-	-	1,000.	560.	6,500.	*	274.	2,700.
12	5	21	27	10-28-66	1,007-	1,170	453CPRF	SB	-	-	-	-	11,000.	*	342.	-
13									-	-	-	-	-		-	-
14	5	21	27	11-01-66	1,007-	1,170	453CPRF	SB	-	-	2,500.	1,300.	6,800.	*	389.	430.
15	5	21	27	12-03-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,500.	*	-	-
16	5	21	27	12-03-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
17	5	21	27	12-03-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,300.	*	-	-
18	5	21	27	12-04-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,800.	*	-	-
19	5	21	27	12-04-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,800.	*	-	-
20	5	21	27	12-04-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
21	5	21	27	12-04-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	-	-
22	5	21	27	12-04-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
23	5	21	27	12-04-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
24	5	21	27	12-04-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	-	-
25	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	1,300.	530.	8,400.	*	596.	3,800.
26	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,000.	*	-	-
27	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
28	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
29	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	1,300.	490.	8,500.	*	588.	3,800.
30	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	-	-
31	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	-	-
32	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
33	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
34	5	21	27	12-05-68	1,007-	1,170	453CPRF	SB	-	-	1,500.	570.	8,300.	*	636.	3,600.
35	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	1,600.	580.	8,300.	*	646.	3,000.
36	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
37	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	-	-
38	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	-	-
39	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	1,300.	520.	8,200.	*	630.	3,900.
40	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,400.	*	-	-
41	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	-	-	9,100.	*	-	-
42	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	-	-
43	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	-	-	8,900.	*	566.	-
44	5	21	27	12-11-68	1,007-	1,170	453CPRF	SB	-	-	1,400.	580.	8,300.	*	626.	3,700.
45	3	21	26	01-29-54	290-	350	453CPRF		-	-	-	-	110.	*	253.	-
46	3	21	26	02-26-54	290-	350	453CPRF		-	-	-	-	120.	*	252.	-
47	3	21	26	09-13-54	290-	350	453CPRF		-	-	-	-	120.	*	259.	-
48	3	21	26	10-19-54	290-	350	453CPRF		-	-	-	-	130.	*	247.	-
49	3	21	26	11-09-54	290-	350	453CPRF		-	-	-	-	140.	*	232.	-
50	3	21	26	12-01-54	290-	350	453CPRF		-	-	-	-	140.	*	247.	-
51	3	21	26	12-16-54	290-	350	453CPRF		-	-	-	-	140.	*	249.	-
52	3	21	26	01-13-55	290-	350	453CPRF		-	-	-	-	140.	*	246.	-
53	3	21	26	03-08-55	290-	350	453CPRF		-	-	-	-	150.	*	250.	-

6

ILLEGIBLE

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

SO NO	LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM	TO	FORMATION	SAMP-LING METHOD	SILICA (SIO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)		BICAR-BONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)
1	8	19	25	10-31-60	3,700-		452YESO	SB	-	0.0	1,800.	410.	2,100.	*	1,240.	2,400.
2	14	24	22	08-00-60	2,000-	2,167	452YESO	DT	-	14.	350.	120.	60.	*	343.	1,100.
3	14	24	22	09-24-60	2,717-	2,747	452YESO	DT	-	79.	120.	110.	680.	*	2,030.	240.
4									-	-	-	-	-		-	-
5	22	24	22	03-19-59	2,787-	2,852	452YESO	DT	-	-	300.	89.	600.	*	719.	1,000.
6	22	24	22	03-26-59	2,685-	2,770	452YESO	SB	-	5.0	140.	45.	400.	*	234.	1,100.
7	27	18	24	10-04-61	-	445	453ARGP	BR	-	-	-	-	19.	*	-	-
8	09	26	24	09-11-52	-	600	453BLCN		-	-	310.	34.	46.		26.	680.
9	09	26	24	07-13-54	-	600	453BLCN		16.	-	360.	31.	19.	*	245.	820.
10	9	24	27	02-28-59	5,250-	5,264	453BRSC		-	-	640.	370.	150.	*	348.	600.
11	9	24	27	02-28-59	5,250-	5,264	453BRSC		-	-	640.	370.	180.	*	353.	610.
12	9	24	27	03-01-59	5,250-	5,264	453BRSC		-	-	640.	370.	130.	*	342.	600.
13	9	24	27	03-01-59	5,250-	5,264	453BRSC		-	-	630.	370.	140.	*	346.	590.
14	9	24	27	03-01-59	5,250-	5,264	453BRSC		-	-	640.	380.	130.	*	352.	590.
15	9	24	27	03-01-59	5,250-	5,264	453BRSC		-	-	600.	350.	180.	*	326.	580.
16	9	24	27	03-02-59	5,250-	5,264	453BRSC		-	-	650.	370.	160.	*	352.	610.
17	9	24	27	03-05-59	3,920-	3,938	453BRSC		-	-	630.	360.	130.	*	332.	610.
18	9	24	27	03-05-59	3,920-	3,938	453BRSC		-	-	640.	360.	140.	*	342.	620.
19	9	24	27	03-05-59	3,920-	3,938	453BRSC		-	-	630.	360.	100.	*	332.	610.
20	9	24	27	03-06-59	3,920-	3,938	453BRSC		-	-	610.	320.	42.	*	326.	650.
21	9	24	27	03-06-59	3,920-	3,938	453BRSC		-	-	620.	310.	130.	*	342.	650.
22	9	24	27	03-06-59	3,920-	3,938	453BRSC		-	-	620.	330.	170.	*	347.	660.
23	9	24	27	03-06-59	3,920-	3,938	453BRSC		-	-	600.	320.	93.	*	337.	650.
24	9	24	27	03-07-59	3,920-	3,938	453BRSC		-	-	630.	360.	110.	*	327.	600.
25	9	24	27	03-13-59	3,920-	3,938	453BRSC		-	-	24,000.	840.	35,000.	*	121.	330.
26	9	24	27	03-13-59	3,920-	3,938	453BRSC		-	-	24,000.	800.	36,000.	*	356.	690.
27	9	24	27	03-13-59	3,920-	3,938	453BRSC		-	-	25,000.	680.	40,000.	*	498.	910.
28	9	24	27	03-14-59	3,920-	3,938	453BRSC		-	-	26,000.	2,900.	40,000.	*	100.	250.
29	9	24	27	03-14-59	3,920-	3,938	453BRSC		-	-	27,000.	2,700.	44,000.	*	122.	260.
30	9	24	27	03-14-59	3,920-	3,938	453BRSC		-	-	30,000.	3,200.	54,000.	*	159.	320.
31	9	24	27	03-17-59	3,920-	3,938	453BRSC		-	-	30,000.	2,400.	54,000.	*	427.	790.
32	9	24	27	03-19-59	2,149-	2,176	453BRSC		-	-	1,800.	440.	23,000.	*	219.	440.
33	9	24	27	03-19-59	2,149	2,176	453BRSC		-	-	1,800.	220.	11,000.	*	637.	1,000.
34	9	24	27	03-19-59	2,149-	2,176	453BRSC		-	-	1,800.	200.	6,600.	*	611.	880.
35	9	24	27	03-28-59	2,163-	2,176	453BRSC		-	-	2,800.	680.	34,000.	*	449.	900.
36	9	24	27	04-11-59	2,149-	2,176	453BRSC		-	-	1,800.	470.	32,000.	*	446.	910.
37	9	24	27	04-12-59	2,149-	2,176	453BRSC		-	-	1,800.	440.	32,000.	*	472.	890.
38	9	24	27	04-20-59	2,140-	2,176	453BRSC		-	-	2,100.	560.	33,000.	*	458.	920.
39	24	24	31	03-24-59	7,135-	7,214	453BRSC	DT	-	TR	3,800.	530.	19,000.	*	-	1,000.
40	24	24	31	06-17-59	-	7,200	453BRSC	WH	-	TR	24,000.	1,800.	72,000.	*	690.	200.
41	18	20	27	09-28-59	-	393	453CKBF	BR	-	-	-	-	220.	*	-	-
42	18	20	27	09-28-59	-	120	453CKBF	BR	-	-	-	-	26.	*	-	-
43	31	19	31	10-21-71	740	760	453CPAQ	SS	-	140.	1,900.	1,800.	70,000.	*	5.	5,300.
44	31	19	31	10-21-71	3,736	3,939	453CPAQ	BR	-	150	1,800.	1,800.	69,000.	*	0.	5,100.
45	31	19	31	10-21-71	3,736	3,939	453CPAQ	BR	-	150	1,800.	1,700.	70,000.	*	20.	5,300.
46	31	19	31	10-21-71	3,736	3,939	453CPAQ	BR	-	130.	1,700.	1,800.	70,000.	*	10.	5,300.
47	31	19	31	10-21-71	3,736	3,939	453CPAQ	BR	-	130.	1,800.	1,700.	70,000.	*	5.	5,100.
48	31	19	31	10-21-71	3,760	3,780	453CPAQ	SS	-	67.	2,000.	1,900.	67,000.	*	649.	5,000.
49	31	19	31	12-12-66	3,736	3,939	453CPRF	SB	-	-	-	-	64,000.	*	-	-
50	31	19	31	12-14-66	3,736	3,939	453CPRF	SB	-	-	-	-	62,000.	*	-	-
51	31	19	31	12-15-66	3,736	3,739	453CPRF	BR	-	-	-	-	78,000.	*	-	-
52	31	19	31	12-15-66	3,736	3,939	453CPRF	SB	-	-	-	-	62,000.	*	-	-
53	31	19	31	12-15-66	3,736	3,739	453CPRF	BR	-	-	-	-	63,000.	*	-	-

ILLEGIBLE

TABLE 4A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY BOTH FORMATION SOURCE AND GEOGRAPHIC LOCATION.

EDDY COUNTY

LOCATION SEC.	T.	R.	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	NIT-RATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)	(CA+MG)/ (NA+K)	SPECIFIC CONDUCT-ANCE (UMHOS AT 25C)	SPECIFIC CONDUCT-ANCE CALC (UMHOS AT 18C)	RESIS-TIVITY MEAS. (OHM-M)	AT DEG.C	RESIS-TIVITY CALC. (OHM-M AT 18C)	PH	RELIA-BILITY OF DW DATA
6	19	33	NV	5,200.			1.005	13,000. *	1.330	-	15,600.	.640	23.0	.641	7.9	NREP
14	23	22	10.	12.			1.002	2,000. *	10.	-	651.	3.530	24.0	15.	7.3	MRCN
19	24	22	430.	220.			1.002	3,000. *	.516	-	2,730.	2.666	25.0	3.669	7.8	QSTN
			-	-				-	-	-	-	-		-		MRCN
5 22	24	22	-	570.			1.006	3,300. *	.852	-	3,430.	-		2.914	8.6	QSTN
15	24	22	0.0	52.			1.008	2,000. *	.618	-	1,640.	4.234	25.0	6.110	7.7	MRCN
27	19	24	-	20.			1.000 *	-	-	1,330.	-	-		-		MRCN
8	25	24	-	64.			1.000 *	1,400. *	9.078	1,500.	429.	-		23.		
20	24	25	-	7.0	2.0	3.0	1.000 *	1,400. *	25.	1,630.	192.	-		52.		
9	24	27	-	1,800.			1.005	3,900. *	9.988	-	4,840.	-		2.066	7.3	NREP
	24	27	-	1,800.			1.006	4,000. *	7.916	-	4,870.	-		2.052	7.2	
8	24	27	-	1,800.			1.005	3,900. *	11.	-	4,780.	-		2.092	7.2	NREP
9	24	27	-	1,800.			1.004	3,800. *	10.	-	4,760.	-		2.102	7.3	
9	24	27	-	1,800.			1.005	3,900. *	11.	-	4,840.	-		2.065	7.3	
9	24	27	-	1,700.			1.003	3,800. *	7.982	-	4,730.	-		2.115	7.2	NREP
	24	27	-	1,800.			1.006	3,900. *	9.177	-	4,890.	-		2.044	7.3	
9	24	27	-	1,700.			1.005	3,800. *	11.	-	4,700.	-		2.129	7.2	
9	24	27	-	1,500.			1.006	3,900. *	10.	-	4,750.	-		2.107	7.2	NREP
9	24	27	-	1,700.			1.005	3,800. *	13.	-	4,600.	-		2.176	7.2	NREP
9	24	27	-	1,400.			1.004	3,400. *	31.	-	3,830.	-		2.611	7.3	NREP
	24	27	-	1,500.			1.005	3,600. *	10.	-	4,260.	-		2.347	7.2	
9	24	27	-	1,600.			1.006	3,800. *	7.848	-	4,560.	-		2.194	7.1	NREP
9	24	27	-	1,500.			1.005	3,500. *	14.	-	4,060.	-		2.462	7.0	NREP
9	24	27	-	1,700.			1.005	3,700. *	13.	-	4,600.	-		2.173	7.1	NREP
9	24	27	-	98,000.			1.116	160,000. *	.811	-	152,000.	-		.066	5.8	NREP
9	24	27	-	100,000.			1.118	160,000. *	.812	-	153,000.	-		.065	6.1	ACID
9	24	27	-	110,000.			1.124	170,000. *	.738	-	160,000.	-		.063	6.2	NREP
9	24	27	-	120,000.			1.139	190,000. *	.885	-	164,000.	-		.061	5.6	NREP
9	24	27	-	120,000.			1.153	200,000. *	.828	-	170,000.	-		.059	6.8	NREP
9	24	27	-	150,000.			1.170	230,000. *	.749	-	184,000.	-		.054	7.5	NREP
9	24	27	-	140,000.			1.166	230,000. *	.732	-	183,000.	-		.054	8.3	NREP
9	24	27	-	39,000.			1.052	65,000. *	.124	-	80,100.	-		.125	9.3	QSTN
9	24	27	-	20,000.			1.027	35,000. *	.229	-	45,000.	-		.22211.		QSTN
9	24	27	-	15,000.			1.019	23,000. *	.371	-	30,700.	-		.32611.		NREP
9	24	27	-	58,000.			1.069	97,000. *	.133	-	110,000.	-		.091	7.4	
9	24	27	-	53,000.			1.063	89,000. *	.092	-	103,000.	-		.097	9.7	
9	24	27	-	54,000.			1.063	90,000. *	.090	-	104,000.	-		.096	9.6	
9	24	27	-	56,000.			1.066	93,000. *	.102	-	107,000.	-		.093	8.8	
24	24	31	TR	29,000.			1.035 *	-	.296	-	-	-		-	7.6	MRCN
29	24	31	-	160,000.			1.180	260,000. *	.431	-	194,000.	.040		.052	7.8	MRCN
10	20	27	-	390.			1.000 *	-	-	3,960.	-	-		-		
13	20	27	-	40.			1.000 *	-	-	2,780.	-	-		-		
31	19	31	0.0	110,000.			1.116	182,000.	.877	-	173,000.	5.000		.058	5.0	NREP
31	19	31	0.0	110,000.			1.116	181,000.	.882	-	172,000.	5.100		.058	4.9	NREP
31	19	31	0.0	110,000.			1.116	180,000.	.876	-	174,000.	5.000		.058	5.6	NREP
31	19	31	0.0	110,000.			1.116	183,000.	.878	-	173,000.	5.000		.058	5.2	NREP
31	19	31	0.0	110,000.			1.118	181,000.	.875	-	173,000.	5.000		.058	5.1	NREP
31	19	31	0.0	110,000.			1.115	179,000.	.887	-	169,000.	5.100		.059	1.1	NREP
31	19	31	-	100,000.			1.112	-	-	179,000.	-	-		-		NREP
31	19	31	-	97,000.			1.109	-	-	174,000.	-	-		-		NREP
31	19	31	-	120,000.			1.134	-	-	197,000.	-	-		-		NREP
31	19	31	-	96,000.			1.100	-	-	175,000.	-	-		-		NREP
31	19	31	-	97,000.			1.109	-	-	175,000.	-	-		-		NREP

ILLEGIBLE

TABLE 3A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY GEOGRAPHIC LOCATION.

EDDY COUNTY

LOCATION SEC.	T.	R.	HYDROGEN SULFIDE (H2S) (MG/L)	CHLORIDE (CL) (MG/L)	FLUORIDE (F) (MG/L	NITRATE (NO3) (MG/L)	DENSITY OF WATER AT 20C (GM/ML)	DISSOLVED SOLIDS (SUM) (MG/L)		(CA+MG)/ (NA+K)	SPECIFIC CONDUCTANCE (UMHOS AT 25C)	SPECIFIC CONDUCTANCE CALC (UMHOS AT 18C)	RESISTIVITY MEAS. (OHM-M)	AT DEG.C	RESISTIVITY CALC. (OHM-M AT 18C)	PH	RELIABILITY OF QW DATA
24	19	30	0.0	41,000.			1.055	70,000.	*	.223	-	83,200.	-		.120		
24	19	30	-	44,000.			1.050	-		-	95,300.	-	-		-		
25	19	30	HV	8,600.			1.010	17,000.	*	.128	-	22,000.	-		.448	9.3	
25	19	30	TR	19,000.			1.056	67,000.	*	.452	-	59,300.	-		.169	8.0	
25	19	30	-	8,700.			1.009	16,000.	*	.097	25,800.	22,300.	-		.448	8.2	
12	19	31	-	31,000.			1.038	53,000.	*	.183	-	66,100.	.145	22.0	.151	6.8	QSTN
			-	-			-	-		-	-	-	-		-		MRCN
12	19	31	-	52,000.			1.062	88,000.	*	.203	-	101,000.	.085	20.0	.099	6.6	MRCN
12	19	31	-	35,000.			1.043	60,000.	*	.672	-	72,500.	-		.138	5.7	MRCN
19	19	31	HV	14,000.			1.018	24,000.	*	.503	-	32,400.	-		.309	8.0	
19	19	31	HV	22,000.			1.030	43,000.	*	.238	-	52,300.	-		.191	8.0	
19	19	31	-	41,000.			1.050	71,000.	*	.245	-	83,400.	-		.120	8.3	
20	19	31	150.	110,000.			1.134	200,000.	*	.103	-	173,000.	-		.058	8.0	
21	19	31	0.0	10,000.			1.005	18,000.	*	4.980	-	24,200.	.420	27.0	.414	6.3	NREP
23	19	31	0.0	81.			1.008	1,900.	*	1.318	-	1,500.	1.850	27.0	6.679	6.9	NREP
23	19	31	0.0	320.			1.008	4,500.	*	.103	-	4,850.	1.350	28.0	2.061	7.3	NREP
			-	-			-	-		-	-	-	-		-		MRCN
23	19	31	-	120,000.			1.140	200,000.	*	.094	-	177,000.	-		.057	4.4	QSTN
23	19	31	-	130,000.			1.142	210,000.	*	.081	-	184,000.	-		.054	5.8	MRCN
24	19	31	-	12,000.			1.014	23,700.		-	33,400.	-	-		-		
24	19	31	-	11,000.			1.005	23,500.		-	33,400.	-	-		-		
29	19	31	-	19,000.			1.032	40,000.	*	.286	-	46,800.	-		.213	7.1	
29	19	31	-	12,000.			1.012	2,400.	*	.186	32,100.	27,900.	-		.358	8.2	LTRS
30	19	31	HV	89,000.			1.098	150,000.	*	.204	-	144,000.	.060	27.0	.070	7.1	
31	19	31	HV	12,000.			1.016	23,000.	*	.184	-	30,000.	-		.334	8.0	
31	19	31	-	100,000.			1.112	-		-	174,000.	-	-		-		NREP
31	19	31	-	97,000.			1.109	-		-	174,000.	-	-		-		NREP
31	19	31	-	120,000.			1.134	-		-	197,000.	-	-		-		NREP
31	19	31	-	96,000.			1.108	-		-	175,000.	-	-		-		NREP
31	19	31	-	97,000.			1.109	-		-	175,000.	-	-		-		NREP
31	19	31	-	96,000.			1.109	-		-	174,000.	-	-		-		NREP
31	19	31	-	97,000.			1.109	-		-	174,000.	-	-		-		NREP
31	19	31	-	120,000.			1.130	-		-	194,000.	-	-		-		NREP
			-	-			-	-		-	-	-	-		-		MRCN
31	19	31	0.0	110,000.			1.110	182,000.	*	.079	-	173,000.	5.000		.058	5.0	NREP
31	19	31	-	-			1.115	-		-	-	-	-		-		MRCN
31	19	31	0.0	110,000.			1.110	181,000.	*	.082	-	172,000.	5.100		.058	4.9	NREP
31	19	31	-	-			1.115	-		-	-	-	-		-		MRCN
31	19	31	0.0	110,000.			1.114	190,000.	*	.076	-	174,000.	5.000		.058	5.0	NREP
31	19	31	-	-			1.115	-		-	-	-	-		-		MRCN
31	19	31	0.0	110,000.			1.114	183,000.	*	.078	-	173,000.	5.000		.058	5.2	NREP
31	19	31	-	-			1.115	-		-	-	-	-		-		MRCN
31	19	31	0.0	110,000.			1.110	181,000.	*	.075	-	173,000.	5.000		.058	5.1	NREP
31	19	31	-	-			1.116	-		-	-	-	-		-		MRCN
31	19	31	0.0	110,000.			1.113	177,000.	*	.087	-	168,000.	5.100		.059	7.1	NREP
31	19	31	-	-			1.112	-		-	-	-	-		-		MRCN
1	20	24	TR	8,900.			1.015	22,000.	*	.091	-	25,800.	.362	24.0	.388	7.9	MRCN
1	20	24	500.	1,300.			1.006	9,100.	*	.454	-	9,000.	1.150	27.0	1.111	7.2	MRCN
1	20	24	-	770.			1.000	-	*	-	8,370.	-	-		-		MRCN
21	20	24	460.	46,000.			1.060	80,000.	*	.221	-	91,500.	.096	23.0	.109	6.8	
11	20	25	-	460.			1.000	-	*	-	3,720.	-	-		-		
12	20	26	-	11,000.			1.016	21,000.	*	.257	-	27,200.	.410	17.0	.368	6.6	
29	20	26	HV	58,000.			1.065	100,000.	*	.115	-	111,000.	-		.090	7.5	

6

ILLEGIBLE

TABLE 3A.--WATER-QUALITY DATA FOR EDDY AND LEA COUNTIES, NEW MEXICO, ARRANGED BY GEOGRAPHIC LOCATION.

EDDY COUNTY

C O	LOCATION SEC.	T.	R.	DATE OF COLLECTION	DEPTH FROM	TO	FORMATION	SAMP-LING METHOD	SILICA (SIO2) (MG/L)	IRON (FE) (MG/L)	CALCIUM (CA) (MG/L)	MAGNESIUM (MG) (MG/L)	SODIUM + POTASSIUM AS NA (MG/L)	BICAR-BONATE + CARBONATE (MG/L)	SULFATE (SO4) (MG/L)
1	24	19	30	02-20-63	-		453YTES	ST	-	0.0	1,200.	2,000.	23,000. *	0.	2,900.
2	24	19	30	02-00-67	-	2,002	453YTES		-	-	-	-	28,000. *	-	-
3	25	19	30	06-19-62	2,054-	2,082	453SVRV	WH	-	-	280.	220.	5,800. *	1,150.	610.
4	25	19	30	06-19-62	1,988-	2,161	453YTES	WH	-	-	1,000.	3,500.	17,000. *	1,300.	25,000.
5	25	19	30	05-00-67	1,937-	1,953	453YTES	ST	-	-	190.	180.	5,800. *	1,850.	59.
6	12	19	31	03-17-62	12,057-	12,095	400PSLV	DT	-	-	1,800.	590.	18,000. *	506.	900.
7									-	-	-	-	-	-	-
8	12	19	31	04-23-62	10,212-	10,226	451WFMP		-	-	4,200.	590.	29,000. *	974.	1,500.
9	12	19	31	04-23-62	11,136-	11,160	404STRN		-	-	6,400.	1,300.	14,000. *	939.	1,600.
0	19	19	31	03-02-62	-		453SVRV	WH	-	-	1,800.	610.	6,400. *	305.	410.
1	19	19	31	06-00-62	2,194-		453SVRV	WH	-	-	1,700.	670.	13,000. *	366.	4,100.
2	19	19	31	07-17-62	-		453SVRV	WH	-	-	2,100.	1,700.	23,000. *	121.	3,100.
3	20	19	31	12-04-59	2,188-	2,228	453YTES	DT	-	0.0	2,500.	2,300.	71,000. *	830.	6,300.
4	21	19	31	10-30-59	-	2,125			-	0.0	760.	3,000.	1,300. *	1,660.	930.
5	23	19	31	07-00-63	11,300-		404STRN	DT	-	0.0	150.	100.	280. *	197.	1,100.
6	23	19	31	07-00-63	11,300-		404STRN	DT	-	TR	73.	29.	1,300. *	369.	2,400.
7									-	-	-	-	-	-	-
8	23	19	31	08-19-63		-12,100	402MRRN		-	-	1,700.	2,600.	73,000. *	0.	4,400.
9	23	19	31	08-27-63	11,174-	11,507	404STRN	ST	-	-	3,400.	1,300.	79,000. *	597.	3,700.
0	24	19	31	02-00-67	-	2,635	453YTES		-	-	-	-	7,500. *	-	-
1	24	19	31	02-00-67	-	2,635	453YTES		-	-	-	-	7,400. *	-	-
2	29	19	31	08-03-60			453YTES	PO	-	-	690.	1,400.	12,000. *	242.	5,800.
3	29	19	31	09-00-67	2,161-	2,181	453YTES	TR	-	-	320.	490.	7,860. *	1,740.	760.
4	30	19	31	06-28-61			453GRBG		-	TR	4,300.	2,500.	40,000. *	804.	2,400.
5	31	19	31	06-19-62			453YTES	WH	-	-	800.	240.	7,500. *	152.	1,900.
6	31	19	31	12-12-66	3,736-	3,939	453CPRF	SB	-	-	-	-	64,000. *	-	-
7	31	19	31	12-14-66	3,736-	3,939	453CPRF	SB	-	-	-	-	63,000. *	-	-
8	31	19	31	12-15-66	3,736-	3,739	453CPRF	BR	-	-	-	-	78,000. *	-	-
9	31	19	31	12-15-66	3,736-	3,939	453CPRF	SB	-	-	-	-	62,000. *	-	-
0	31	19	31	12-15-66	3,736-	3,739	453CPRF	BR	-	-	-	-	63,000. *	-	-
1	31	19	31	12-15-66	3,736-	3,739	453CPRF	BR	-	-	-	-	62,000. *	-	-
2	31	19	31	12-15-66	3,736-	3,739	453CPRF	BR	-	-	-	-	63,000. *	-	-
3	31	19	31	12-15-66	3,736-	3,739	453CPRF	BR	-	-	-	-	75,000. *	-	-
4									-	-	-	-	-	-	-
5	31	19	31	10-21-71	740-	760	453CPAQ	SS	-	140.	1,900.	1,800.	70,000. *	5.	5,300.
6	31	19	31	10-21-71	740-	760	453CPRF	SS	-	-	-	-	-	-	-
7	31	19	31	10-21-71	3,736-	3,939	453CPAQ	BR	-	150.	1,800.	1,800.	69,000. *	0.	5,100.
8	31	19	31	10-21-71	1,510-	1,730	453CPRF	SS	-	-	-	-	-	-	-
9	31	19	31	10-21-71	3,736-	3,939	453CPAQ	BR	-	150.	1,800.	1,700.	70,000. *	20.	5,300.
0	31	19	31	10-21-71	2,010-	2,030	453CPRF	SS	-	-	-	-	-	-	-
1	31	19	31	10-21-71	3,736-	3,939	453CPAQ	BR	-	130.	1,700.	1,800.	70,000. *	10.	5,300.
2	31	19	31	10-21-71	2,760-	2,780	453CPRF	SS	-	-	-	-	-	-	-
3	31	19	31	10-21-71	3,736-	3,939	453CPAQ	BR	-	130.	1,800.	1,700.	70,000. *	5.	5,100.
4	31	19	31	10-21-71	3,260-	3,280	453CPRF	SS	-	-	-	-	-	-	-
5	31	19	31	10-21-71	3,760-	3,780	453CPAQ	SS	-	67.	2,000.	1,900.	67,000. *	649.	5,000.
6	31	19	31	10-21-71	3,760-	3,780	453CPRF	SS	-	-	-	-	-	-	-
7	1	20	24	03-15-65	5,550-	5,600	451WFMP	DT	-	0.0	280.	170.	7,200. *	3,520.	1,500.
8	1	20	24	03-30-65	7,803-	7,823	406CSCO	DT	-	0.0	480.	190.	2,000. *	1,140.	3,500.
9	1	20	24	09-17-65	7,754-	7,764	405CNYN	FL	-	-	-	-	500. *	-	-
0	21	20	24	06-08-60	4,647-	5,005	452ABO	DT	-	0.0	3,300.	1,000.	26,000. *	965.	2,800.
1	11	20	25	09-22-65	-	102	660VLFL	FL	-	-	-	-	300. *	-	-
2	12	20	26	00-00-65	-		300DVNN	DT	-	-	880.	340.	6,400. *	550.	1,600.
3	29	20	26	12-07-57	2,475-		453SADR		-	0.0	1,700.	1,200.	36,000. *	1,790.	4,800.

6

ILLEGIBLE

GROUND WATER REPORT 3 PLATE 4