

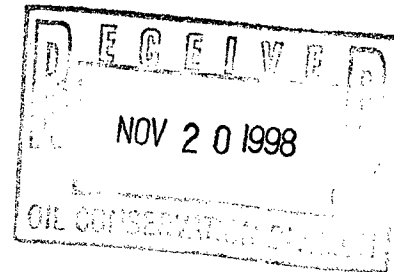


ARCO Permian

600 North Mariefeld
Midland, TX 79701-4373
P.O. Box 1610
Midland, TX 79702-1610
Telephone 915-688-5570
Facsimile 915-688-5956
Email ecasbee@mail.arco.com

Elizabeth A. Casbeer
Regulatory/Compliance Analyst

DHC 12/10/98
2145 ~~2145~~



November 18, 1998

New Mexico Oil Conservation Division
ATTN: David Catanach
2040 S. Pacheco Street
Santa Fe, NM 87505

RE: Application of ARCO Permian
for Downhole Commingling on
Red Lake "3" Federal Well Numbers 1 and 2
Red Lake (QGSA) and NE Red Lake (Glor-Yeso) Fields
Eddy Co., NM

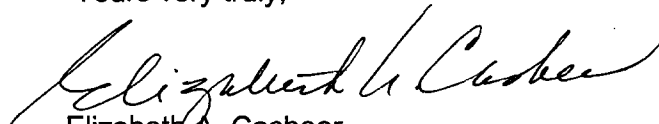
Mr. Catanach:

ARCO Permian respectfully requests administrative approval for downhole commingling on the Red Lake "3" Federal Well Numbers 1 and 2. Attached are the supporting documents for this application.

If you have any questions, please contact me at 915/688-5570. Please send the approved permit to:

ARCO Permian
ATTN: E. A. CASBEER, Room 959-54
P. O. Box 1610
Midland, TX 79702

Yours very truly,


Elizabeth A. Casbeer
Regulatory Compliance Analyst

Attachments

xc: Bureau of Land Management
Carlsbad Resource Area
P. O. Box 1778
Carlsbad, NM 88220
Larry Henson – EUN
Dennis Braaten – 62923/MIO
Donald Knipe – 61323/MIO
Central Files - 041/MIO
R/C Files



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

December 14, 1998

Arco Permian
P.O. Box 1610
Midland, Texas 79702-1610

Ms. Elizabeth A. Casbeer

Re: Application received by the New Mexico Oil Conservation Division ("Division") on November 20, 1998 for administrative approval to downhole commingle the Red Lake-Queen Grayburg San Andres (Oil-51300) and the Northeast Red Lake-Glorieta Yeso (Oil-96836) Pool production in the Red Lake "3" Federal Well No. 1 (API No. 30-015-29801) and the Red Lake "3" Federal Well No. 2 (API No. 30-015-29802) both located in Unit Letter E, Section 3, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico.

Dear Ms. Casbeer:

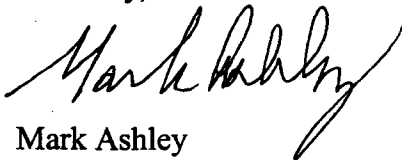
Reference is made to your recent applications for exceptions to Rule 303.A. of the Division Rules and Regulations to permit the downhole commingling of the above described wells from the subject pools.

Pursuant to Division Rule 303.C.(1)(a)(iii), the total water production from all commingled zones shall not exceed twice the oil limit, or 160 BWPD. Since the applications state the daily water production is 202 and 186 BWPD respectively, the applications cannot be approved administratively.

The Division allows for a hearing before a Division appointed examiner for applications that cannot be approved administratively. Please advise if Arco Permian would like to set the above described applications to hearing.

If you have any questions, please contact me at (505) 827-8183.

Sincerely,

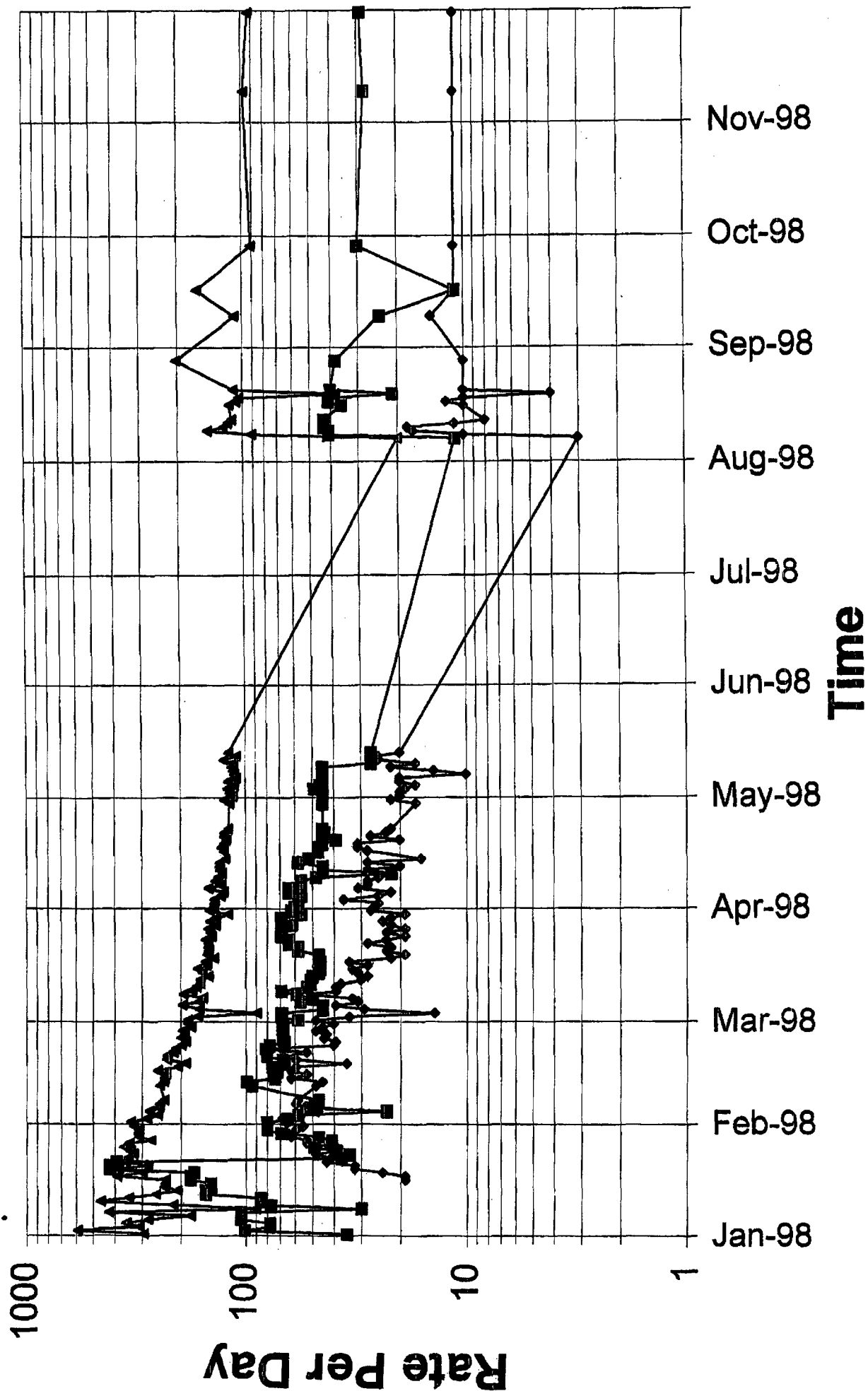


Mark Ashley

cc: Oil Conservation Division - Artesia
U.S. Bureau of Land Management - Carlsbad

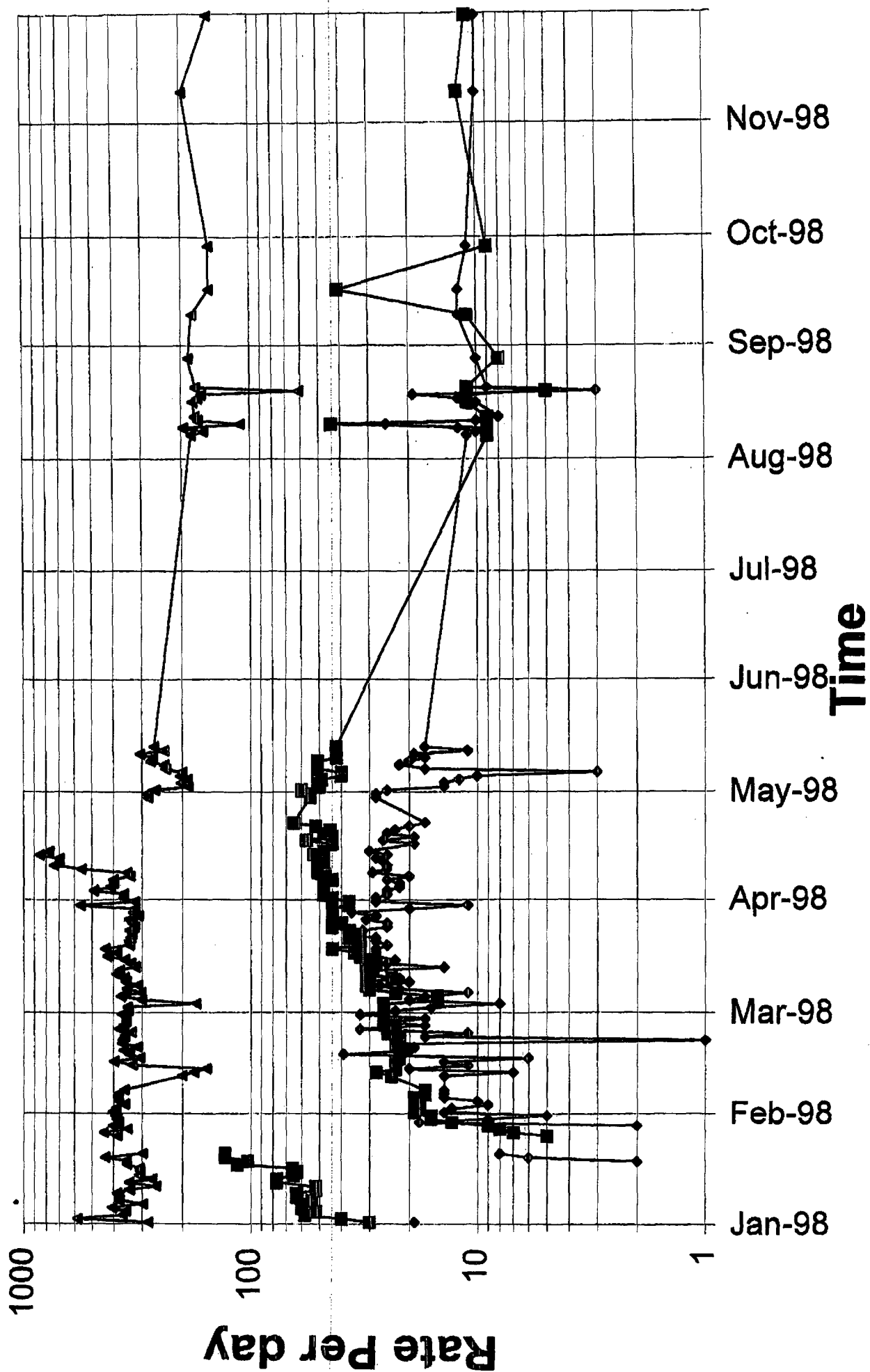
Redlake "3" Federal No.1

—●— OIL —■— MCF —▲— WATER



Redlake "3" Federal No. 2

—◆— OIL —■— MCF —▲— WTR



Red lake "3" Federal Production Tests								
DATE	WELL	OIL	MCF	WATER	WELL	OIL	MCF	WTR
12/5/98	#1	11	29	93	#2	10	11	151
11/14/98	#1	11	28	98	#2	10	12	196
10/3/98	#1	11	30	91	#2	11	9	151
9/21/98	#1	11	11	162	#2	12	41	151
9/14/98	#1	14	24	108	#2	12	11	179
9/2/98	#1	10	38	202	#2	10	8	186
8/25/98	#1	10	40	110	#2	9	11	173
8/24/98	#1	4	21	38	#2	3	5	61
8/23/98	#1	10	41	104	#2	19	11	163
8/22/98	#1	12	41	107	#2	12	11	169
8/21/98	#1	10	36	115	#2	10	11	178
8/17/98	#1	8	43	112	#2	8	9	174
8/16/98	#1	11	43	117	#2	10	9	169
8/15/98	#1	18	43	123	#2	25	44	110
8/14/98	#1	17	41	145	#2	12	9	196
8/13/98	#1	10	41	91	#2	10	9	160
8/12/98	#1	3	11	20	#2	11	9	181
5/18/98	#1	20	27	119	#2	17	42	265
5/17/98	#1	25	27	110	#2	11	42	240
5/16/98	#1	25	27	126	#2	19	42	306
5/15/98	#1	17	27	113	#2	17	42	270
5/14/98	#1	22	45	115	#2	20	51	275
5/13/98	#1	14	45	113	#2	22	51	240
5/12/98	#1	10	45	112	#2	17	51	236
5/11/98	#1	20	45	110	#2	3	40	200
5/10/98	#1	20	45	120	#2	10	40	204
5/9/98	#1	17	46	112	#2	12	49	190
5/8/98	#1	19	49	121	#2	14	51	203
5/7/98	#1	20	45	118	#2	14	50	188
5/6/98	#1	20	45	114	#2	25	60	263
5/5/98	#1	22	45	125	#2	28	55	287
5/4/98	#1	17	45	118	#2	28	55	282
4/27/98	#1	22	45	120	#2	17	65	n/a
4/26/98	#1	23	44	125	#2	20	52	n/a
4/25/98	#1	27	45	126	#2	23	45	n/a
4/24/98	#1	20	39	122	#2	25	48	n/a
4/23/98	#1	31	45	126	#2	19	44	n/a
4/22/98	#1	31	47	129	#2	26	57	n/a
4/21/98	#1	28	47	126	#2	19	44	n/a
4/19/98	#1	16	52	124	#2	30	48	776
4/18/98	#1	28	58	132	#2	25	53	850
4/17/98	#1	20	45	132	#2	28	48	697
4/16/98	#1	28	45	131	#2	26	48	697
4/15/98	#1	22	22	128	#2	25	51	736
4/14/98	#1	25	48	134	#2	25	51	555
4/13/98	#1	28	56	138	#2	29	51	349
4/12/98	#1	28	56	130	#2	20	47	338

Red lake "3" Federal Production Tests								
DATE	WELL	OIL	MCF	WATER	WELL	OIL	MCF	WTR
4/11/98	#1	31	64	148	#2	25	44	400
4/10/98	#1	22	64	126	#2	22	48	399
4/9/98	#1	25	56	130	#2	22	48	413
4/8/98	#1	36	58	139	#2	25	48	491
4/7/98	#1	25	58	139	#2	25	48	361
4/6/98	#1	26	60	140	#2	28	44	360
4/5/98	#1	27	62	147	#2	28	37	322
4/4/98	#1	19	56	120	#2	11	37	560
4/3/98	#1	22	69	137	#2	20	44	322
4/2/98	#1	24	69	146	#2	36	44	328
4/1/98	#1	22	62	138	#2	28	44	311
3/31/98	#1	19	69	149	#2	31	44	342
3/30/98	#1	23	69	146	#2	25	40	330
3/29/98	#1	19	69	144	#2	25	44	323
3/28/98	#1	23	64	153	#2	32	37	340
3/27/98	#1	28	64	149	#2	36	33	331
3/26/98	#1	22	58	149	#2	28	37	336
3/25/98	#1	23	58	148	#2	28	33	342
3/24/98	#1	19	47	150	#2	25	33	341
3/23/98	#1	22	47	140	#2	28	44	436
3/22/98	#1	34	46	153	#2	28	35	387
3/21/98	#1	28	46	151	#2	28	33	425
3/20/98	#1	33	46	166	#2	23	30	357
3/19/98	#1	31	47	158	#2	25	28	336
3/18/98	#1	28	50	148	#2	14	29	321
3/17/98	#1	30	51	162	#2	31	31	375
3/16/98	#1	37	51	162	#2	31	31	388
3/15/98	#1	39	53	169	#2	22	24	358
3/14/98	#1	39	69	177	#2	20	30	353
3/13/98	#1	51	59	194	#2	27	31	313
3/12/98	#1	33	50	158	#2	22	30	350
3/11/98	#1	31	57	164	#2	11	23	302
3/10/98	#1	39	45	196	#2	17	15	370
3/9/98	#1	29	45	164	#2	20	15	301
3/8/98	#1	14	69	89	#2	8	26	174
3/7/98	#1	34	69	166	#2	16	26	348
3/6/98	#1	48	58	185	#2	23	26	344
3/5/98	#1	40	68	185	#2	33	26	368
3/4/98	#1	45	68	179	#2	17	26	352
3/3/98	#1	48	68	195	#2	25	26	351
3/2/98	#1	43	68	191	#2	17	23	360
3/1/98	#1	44	68	198	#2	33	23	377
2/28/98	#1	39	67	189	#2	11	25	334
2/27/98	#1	40	78	197	#2	17	22	357
2/26/98	#1	76	81	210	#2	1	22	365
2/25/98	#1	53	80	216	#2	23	23	368
2/24/98	#1	67	80	230	#2	19	22	315
2/23/98	#1	59	68	231	#2	20	22	361

Red lake "3" Federal Production Tests								
DATE	WELL	OIL	MCF	WATER	WELL	OIL	MCF	WTR
2/22/98	#1	35	67	190	#2	39	22	341
2/21/98	#1	59	76	206	#2	6	22	306
2/20/98	#1	62	72	254	#2	14	23	398
2/19/98	#1	53	75	233	#2	11	23	331
2/18/98	#1	62	74	237	#2	20	23	157
2/17/98	#1	45	99	238	#2	7	28	178
2/16/98	#1	48	94	249	#2	14	24	201
2/12/98	#1	58	47	237	#2	14	17	358
2/11/98	#1	59	49	249	#2	14	17	380
2/10/98	#1	54	51	250	#2	14	19	381
2/9/98	#1	47	23	276	#2	10	18	379
2/8/98	#1	56	58	253	#2	9	19	358
2/7/98	#1	68	65	285	#2	13	18	390
2/6/98	#1	65	80	337	#2	14	19	403
2/5/98	#1	55	80	327	#2	5	16	393
2/4/98	#1	59	80	310	#2	9	16	387
2/3/98	#1	64	69	312	#2	18	13	380
2/2/98	#1	62	47	310	#2	2	9	401
2/1/98	#1	53	41	272	#2	0	8	347
1/31/98	#1	53	41	343	#2	0	7	442
1/30/98	#1	39	49	361	#2	0	5	385
1/29/98	#1	39	39	339	#2	Part		
1/28/98	#1	48	34	327	#2	Part		
1/27/98	#1	41	37	346	#2	Part		
1/26/98	#1	43	391	356	#2	Part		
1/25/98	#1	32	418	282	#2	8	130	299
1/24/98	#1	32	418	382	#2	6	130	435
1/23/98	#1	24	174	297	#2	2	103	350
1/22/98	#1	19	180	388	#2	0	115	350
1/21/98	#1	19	180	233	#2	0	66	308
1/20/98	#1	0	145	235	#2	0	63	306
1/19/98	#1	0	145	237	#2	0	65	309
1/18/98	#1	0	154	207	#2	0	77	271
1/17/98	#1	0	154	260	#2	0	77	341
1/16/98	#1	0	86	343	#2	0	52	260
1/15/98	#1	0	86	462	#2	0	52	340
1/14/98	#1	0	77	217	#2	0	63	387
1/13/98	#1	0	30	90	#2	0	63	380
1/12/98	#1	0	105	422	#2	0	54	377
1/11/98	#1	0	105	180	#2	0	60	298
1/10/98	#1	0	105	281	#2	0	60	406
1/9/98	#1	0	78	353	#2	0	52	353
1/8/98	#1	0	78	308	#2	0	58	365
1/7/98	#1	0	101	588	#2	0	40	582
1/6/98	#1	0	35	294	#2	19	30	282

ARCO PERMIAN
P. O. BOX 1610
Midland, Texas 79702-1610



FAX

Date December 23, 1998

Number of pages including cover sheet 6

To:

Mark Ashley

NMOCD

2040 S. Pacheco Street

Santa Fe, New Mexico

Phone (505) 827-8183

Fax Phone (505) 827-1389

CC: _____

From:

Donald L. Knipe

ARCO Permian

P. O. Box 1610

Midland, Texas 79707

Phone (915) 688-5316

Fax Phone (915) 688-5246

REMARKS:

☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please comment

Ref: Application for Downhole Commingling

Red Lake "3" Federal No. 1 & 2

Per your conversation with Mr. Gary Smallwood, O/A Engineer, ARCO Permian on December 22, 1998 I have attached a table of the production tests on the Red Lake "3" Federal No. 1 & 2. The last production test on the Reference wells was on December 05, 1998 as follows:

Red Lake "3" Federal No. 1 11 BOPD, 29 MCFGPD, 93 BWPD

Red Lake "3" Federal No. 2 10 BOPD, 11 MCFGPD, 151 BWPD

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

811 South First St., Artesia, NM 88210-2835

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1693

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429Form C-107-A
New 3-12-96

APPROVAL PROCESS:

☐ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Operator Arco Permian Address E 3-T185-R27E Eddy
Red Lake "3" Fed 1 E 3-T185-R27E Eddy
Lease Well No. Unit Ltr. - Sec - Twp - Rge County
OGRID NO. 000990 Property Code 30-015-29801 Spacing Unit Lease Types: (check 1 or more)
Federal ☒ State ☐ (and/or) Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Red Lake (QGSA) (51300)		NE Red Lake (Glor-yeso) (96876)
2. Top and Bottom of Pay Section (Perforations)	to be perforated: 1811-2274		3044-3592
3. Type of production (Oil or Gas)	Oil		Oil
4. Method of Production (Flowing or Artificial Lift)	Art. Lift		Art. Lift
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	(Current) 70 Producing after perfs & put on pump b. (Original)	a. b.	a. 75 b.
6. Oil Gravity (° API) or Gas BTU Content	40-42%		42%
7. Producing or Shut-In?	Awaiting perfs		Producing
Production Marginal? (yes or no)	Expected in 3 to 6 months		yes
* If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data	Date: Rates: NA	Date: Rates:	Date: Rates: NA
* If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates: NA	Date: Rates:	Date: 9-2-98 Rates: 10 BOPD, 38MCFD 202 BOPD
8. Fixed Percentage Allocation Formula - % for each zone	Oil: 70 % Gas: 70 %	Oil: % Gas: %	Oil: 30 % Gas: 30 %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? ☒ Yes ☐ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☐ Yes ☐ No
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No

11. Will cross-flow occur? ☐ Yes ☒ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☐ Yes ☐ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No

13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). _____

16. ATTACHMENTS:

- * C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- * Production curve for each zone for at least one year. (If not available, attach explanation.)
- * For zones with no production history, estimated production rates and supporting data.
- * Data to support allocation method or formula.
- * Notification list of all offset operators.
- * Notification list of working, overriding, and royalty interests for uncommon interest cases.
- * Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Elizabeth A. Casbeer TITLE Regulatory/Compliance Analyst DATE 11-18-98

TYPE OR PRINT NAME Elizabeth A. Casbeer TELEPHONE NO. (915) 688-5570

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III

1000 Rio Brazos Rd., Artesia, NM 87410

DISTRICT IV

P.O. Box 2088, Santa Fe, NM 87504-2088

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised February 10, 1994
Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-29801	Pool Code 96210	Pool Name UNDESIGNATED EMPIRE (YESO)
Property Code	Property Name RED LAKE "3" FEDERAL	Well Number 1
OGRID No. 000990	Operator Name ARCO PERMIAN	Elevation 3554

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	3	18 S	27 E		1650	NORTH	330	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

LOT 4 38.58 AC.	LOT 3 38.87 AC.	LOT 2 39.17 AC.	LOT 1 39.46 AC.	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief. <i>Elizabeth A. Casbeer</i> Signature ELIZABETH A. CASBEER Printed Name REG/COMP ANALYST Title 7-10-97 Date
NAD 27 NME Y=647019.10 N X=518424.39 E				
SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. JUNE 24, 1997 Date Surveyed				JLP Signature & Seal Professional Surveyor RONALD EIDSON 6-27-97 P.O. Num. 97-1058 Certificate No. JOHN E. WEST, 678 RONALD EIDSON, 3239 G. EIDSON, 12641
LOT 4 38.58 AC. LOT 3 38.87 AC. LOT 2 39.17 AC. LOT 1 39.46 AC.				

WELLBORE SCHEMATIC

ARCO PERMIAN RED LAKE 3 FEDERAL NO. 1

1650' FNL & 330' FWL (E)
Sec. 3, T-18-S, R-27-E,
Eddy County, NM
API: 30-015-029801
Spudded: 11/05/97
Completed: 12/09/97

Surface Casing 8 5/8" 24#
Cmt'd w/355 sx, Circ.
Shoe @ 1115'

KB: 3562' GL: 3554'

Production Casing 5-1/2" 15.5#
Cement w/650 sx, Shoe @ 3645'
Cement Circulated to Surface

Perforations (1SPF)

3044', 3078'; 3107', 3134', 3143', 3162',
3176', 3186', 3226', 3241', 3250', 3270',
3292', 3348', 3412', 3426', 3442', 3474',
3484', 3508', 3540', 3546', 3574', 3586', 3592'

TD @ 3645'

UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

(See other in-
structions on
reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other _____		3. ADDRESS AND TELEPHONE NO. P.O. Box 1610, Midland, TX 79702 915-688-5570		9. API WELL NO. 30-015-29801	
b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR ☐ Other _____		4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1650'FNL, 330'FWL At top prod. interval reported below		10. FIELD AND POOL, OR WILDCAT UNDESIGNATED EMPIRE (YESO)	
2. NAME OF OPERATOR ARCO Permian		14. PERMIT NO.		12. COUNTY OR PARISH EDDY	
		DATE ISSUED 8/18/97		13. STATE NM	
15. DATE SPUDDED 11/5/97		16. DATE T.D. REACHED 11/12/97		17. DATE COMPL. (Ready to prod.) 12/9/97	
18. ELEVATIONS (OF, RKB, RT, GR, ETC.)* 3554		19. ELEV. CASINGHEAD			
20. TOTAL DEPTH, MD & TVD 3645		21. PLUG, BACK T.D., MD & TVD 3594		22. IF MULTIPLE COMPL., HOW MANY*	
23. INTERVALS DRILLED BY →		ROTARY TOOLS X		CABLE TOOLS	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)* 3044-3592		25. WAS DIRECTIONAL SURVEY MADE N			
26. TYPE ELECTRIC AND OTHER LOGS RUN GR-ACL		27. WAS WELL CORED N			

CASING RECORD (Report all strings set in well)					
CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8-5/8	24	1115	11	CIRC	NA
5-1/2	15.5	3645	7-7/8	CIRC	NA

LINER RECORD				TUBING RECORD			
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2-7/8	3578	

31. PERFORATION RECORD (Interval, size and number) 3044-3592 (1 SPF)	32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
	DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
	3044-3592	ACID W/35280 GAL 20%: 5040 GAL
		15%:

33.* PRODUCTION							
DATE FIRST PRODUCTION 1/6/98		PRODUCTION METHOD (Flowing, gas lift, pumping - size and type of pump) FLOWING				WELL STATUS (Producing or shut-in) PRODUCING	
DATE OF TEST 1/21/98	HOURS TESTED 24	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL - BBL 19	GAS - MCP. 18	WATER - BBL 233	GAS - OIL RATIO 947
FLOW. TUBING PRESS. 52	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL - BBL	GAS - MCP.	WATER - BBL	OIL GRAVITY - API (CORR.) 42.4	
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) SOLD						TEST WITNESSED BY	

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED

Elizabeth A. Cashee

TITLE REGULATORY COMPLIANCE

DATE

2/9/98

*(See Instructions and Spaces for Additional Data on Reverse Side)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof, cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
PREMIER SD	1480	1518	SANDSTONE
SAN ANDRES	1798	2277	DOLomite
YESO	3074	3592	DOLomite

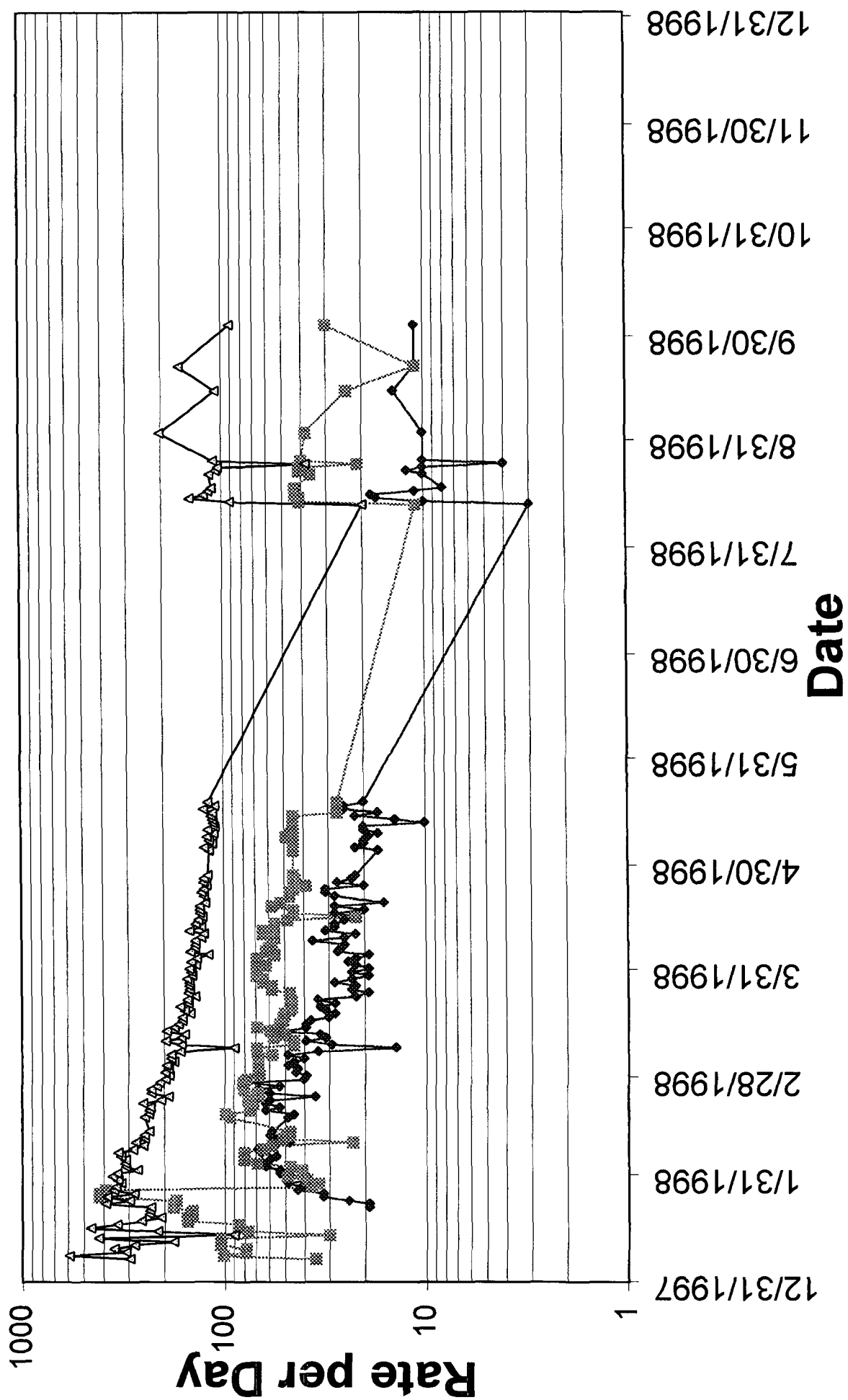
38.

GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
BOWERS	662	
QUEEN	850	
GRAYBURG	1232	
PREMIER SD	1480	
SAN ANDRES	1518	
GLORIETA	2900	
YESO	3074	

Redlake 3 Federal #1 (Yeso)

—●— OIL ····· MCF —△— WATER



Redlake "3" Federal No. 1

Allocation Formula

Formation	Net Pay Determination	Feet of Pay	% of Total
Redlake (QGSA)	Net Pay > 6%	90	0.70
NE Redlake (Glor- Yeso)	Net Pay > 6%	39	0.30
Summary		129	

Log data is attached. Because rate data is not yet available for the San Andres Zone, we believe net pay is an acceptable means to allocate production.

3 #1

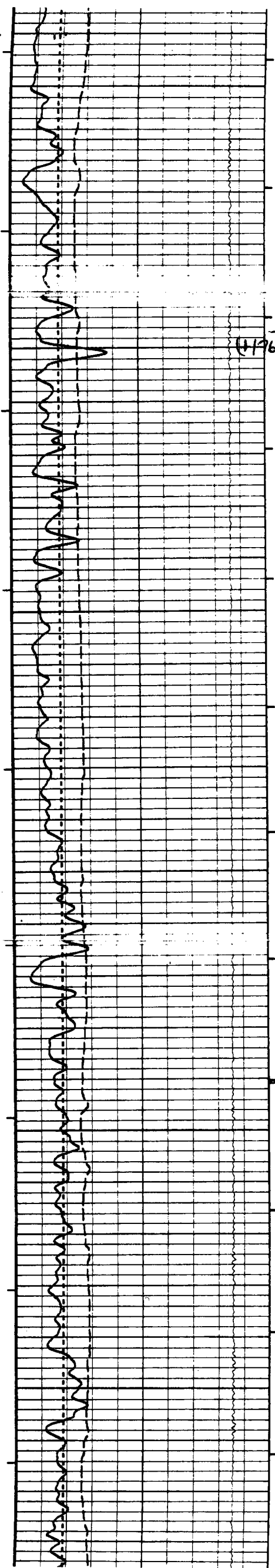
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w/ recom parts



COMPENSATED PHOTO DENSITY COMPENSATED NEURTON SPECTRAL GAMMA LOG

LOCATION 1650' FNL & 330' FVL PRVNC/CO. EDDY FIELD WILDCAT WELL: RED LAKE "3" FED. NO. 1 COMPANY: ARCO PERMIAN	COMPANY ARCO PERMIAN WELL RED LAKE "3" FED. NO. 1 FIELD WILDCAT PROVINCE/COUNTY EDDY COUNTRY/STATE U.S.A. /NEW MEXICO PERMIT NUMBER 30-015- 29801 29801			
	LOCATION 1650' FNL & 330' FVL SEC. 3. T-18S. R-27E			OTHER SERVICES DLL/MLL
	LSD	SEC	TWP	RGE
		3	18S	27E
PERMANENT DATUM GROUND LEVEL . ELEVATION 3554 FT. LOC MEASURED FROM K.B. 8 FT. ABOVE PERMANENT DATUM DRILLING MEASURED FROM K.B.				ELEVATIONS: KB 3562 FT. DF 3561 FT. CL 3554 FT.
DATE	13-NOV-97			
RUN NUMBER	ONE			
DEPTH-DRILLER	3645 FT.			39' net pay $\geq 6\%$
DEPTH-LOGGER	3641 FT.			
FIRST READING	3639 FT.			2' net $\geq 6\%$
LAST READING	100 FT.			
CASING-DRILLER	1115 FT.			
CASING-LOGGER	1114 FT.			SA 15' net
BIT SIZE	7 7/8 INCH			
HOLE FLUID TYPE	SALT GEL			
DENS./VISC.	9.3	20		
PH/FLUID LOSS	10			
SAMPLE SOURCE	FLOW LINE			
RM @ MEAS TEMP	.07 @ 50 F.			
RMF @ MEAS TEMP	.07 @ 50 F.			
RMC @ MEAS TEMP				
SOURCE: RMF/RMC	CALC			Feb 98 aug ~ 50 BOPD + 250W
RM @ BHT	.038 @ 88 F.			
TIME SINCE CIRC	5 HOURS			
MAX REC TEMP	88 DEG. F.			SA 15' B + 2044
EQUIPMENT/BASE	V-1031	MDD		GLST 2900 + 662
RECORDED BY	BARNETT			
WITNESSED BY	MR. PEARCY			



1750

SA Porc

(11964)800

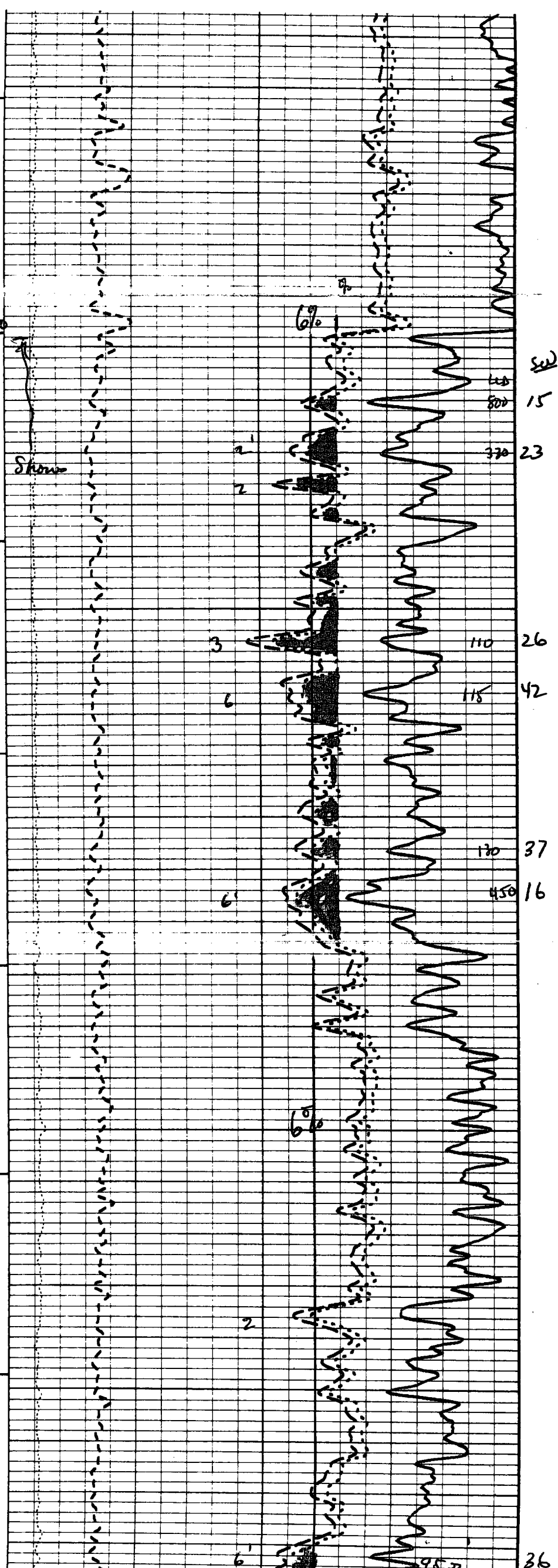
Show

1850

1900

1950

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15

23

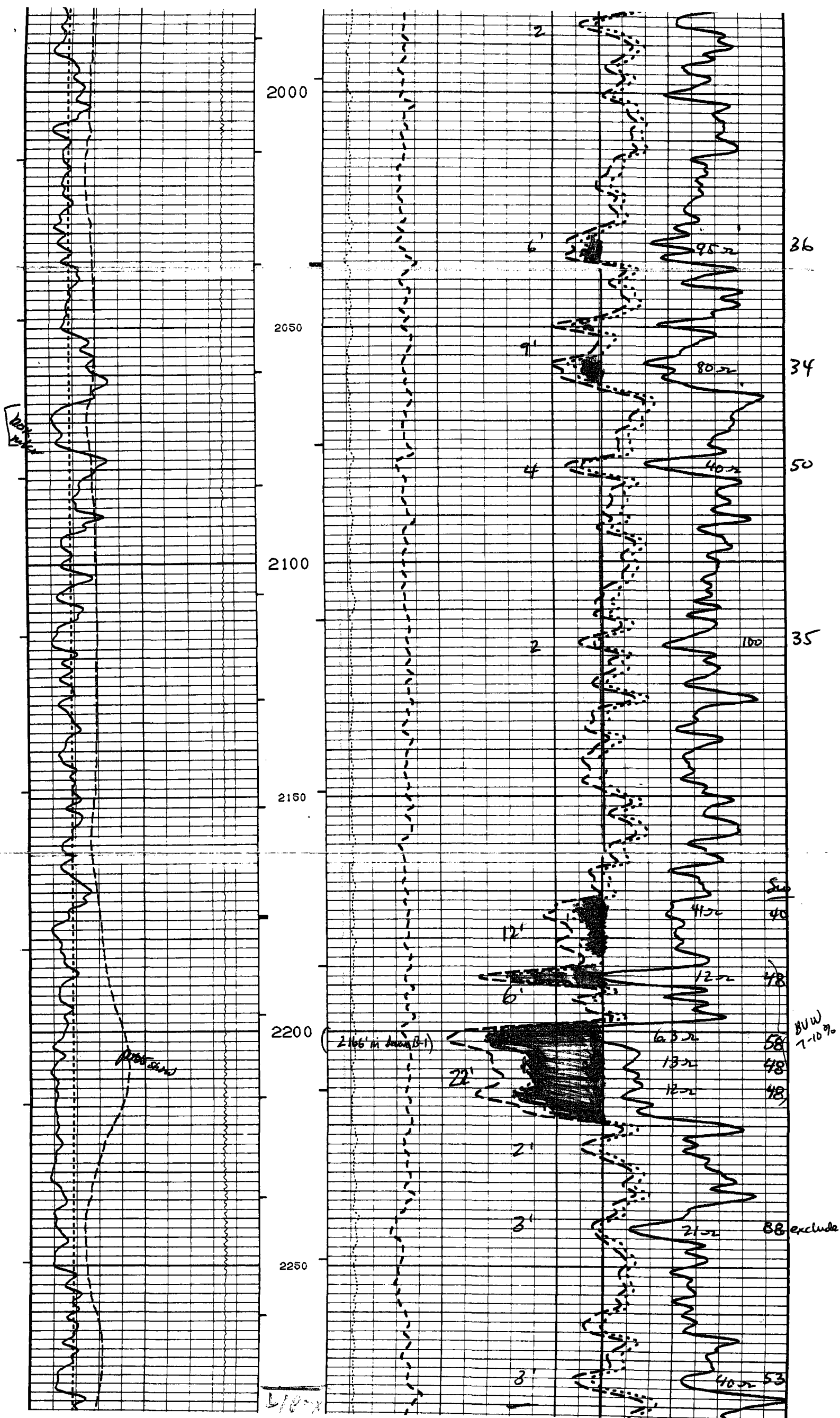
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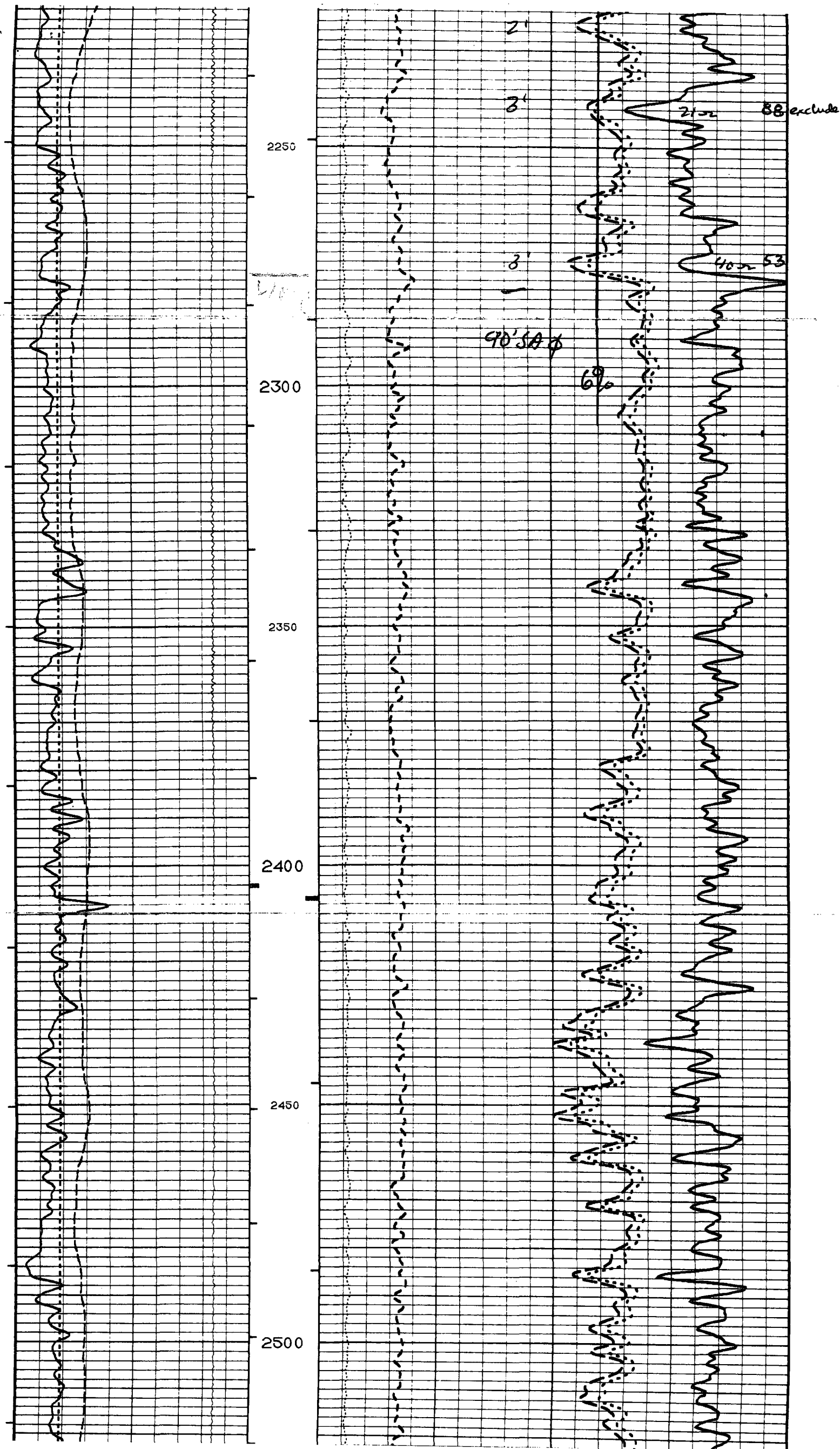
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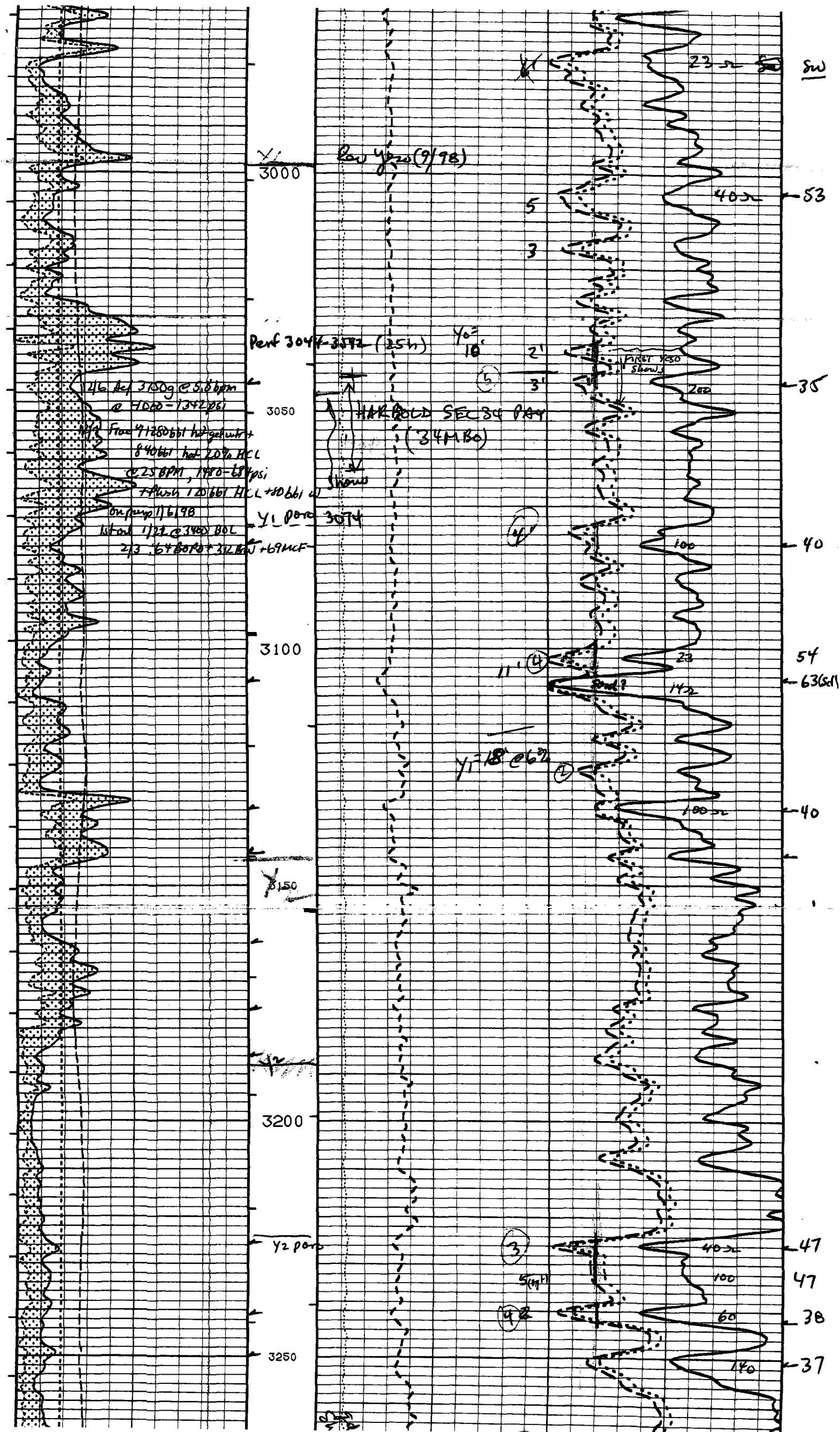
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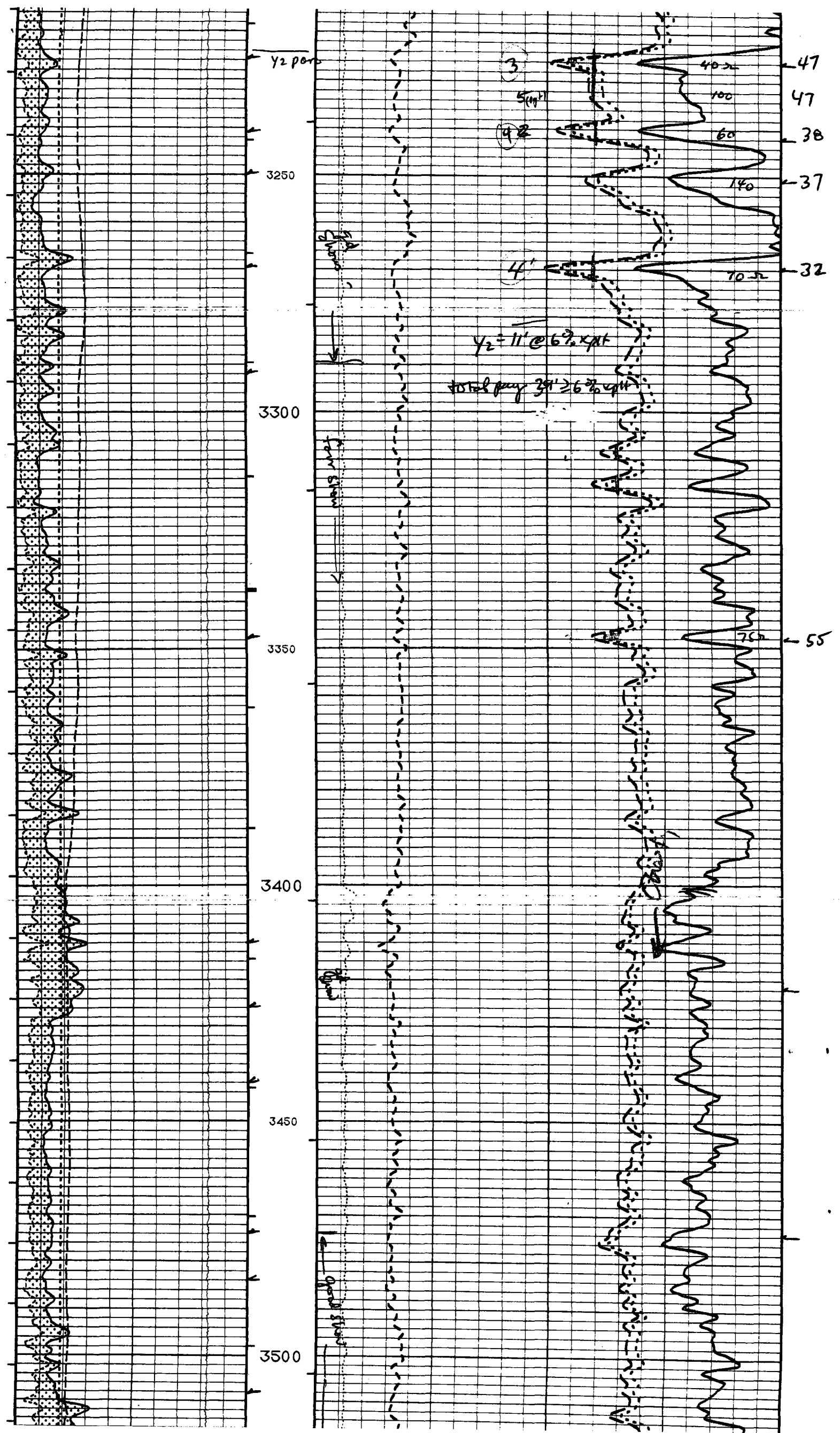
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36











Laboratory Services, Inc.

1331 Tasker Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

SULFUR IN CRUDE OIL

ARCO Permian
Attention: Mr. Rolland Taylor
P. O. Box 1089
Eunice, New Mexico 88231

Jan 27, 1998

	Sulfur	API Gravity @ 60° F	Specific Gravity @ 60° F
Red Lake "3" #1 (YESO)	0.3826 wt. %	42.4	0.9137
Red Lake "3" #2 (YESO)	0.3323 wt. %	41.9	0.8160

Thank You,
Rolland Perry

YESO Oil Samples

**Laboratory Services, Inc.**

1331 Tasker Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

SULFUR IN CRUDE OIL

ARCO Permian
Attention: Mr. Roland Taylor
P. O. Box 1069
Eunice, New Mexico 88231

Jul 28, 1998

Sample Date: 7/27/98 2:00 PM

	Sulfur	API Gravity @ 60° F	Specific Gravity @ 60° F
→ West Red Lake 4 Fed. #1 San Andres	0.4943 wt. %	41.8	0.8165
West Red Lake 4 Fed. #2 Yeso	0.3687 wt. %	40.0	0.8251
→ Lago Rosa 4 Fed. #4 San Andres	0.4794 wt. %	40.2	0.8241
Lago Rosa 4 Fed. #5 Yeso	0.4332 wt. %	40.2	0.8241

Thank You,
Rolland Perry

Offset San Andres Oil Samples



Combined YESO & San Andres Offset Waters

(Scaling tendency decreases with mixing of San Andres)

Analysis: 22382

Water Analysis Report from Baker Petrolite

Summary of Mixing Waters		
Sample Number	051873	106619
Company	ARCO PERMIAN	ARCO
Lease	REDLAKE	LAGO ROSA 4
Well	WELL #1	FED #4
Sample Location	WELLHEAD	WELLHEAD
Anions (mg/L)		
Chloride	122,233	39,939
Bicarbonate	1,039	1,000
Carbonate	0.00	0.00
Sulfate	3,611	4,596
Phosphate	0.00	0.00
Borate	0.00	0.00
Silicate	0.00	0.00
Cations (mg/L)		
Sodium	53,950	25,340
Magnesium	6,934	276
Calcium	11,969	2,150
Strontium	58.0	21.0
Barium	0.40	0.20
Iron	35.0	1.00
Potassium	899	229
Aluminum	0.00	0.00
Chromium	0.00	0.00
Copper	0.00	0.00
Lead	0.00	0.00
Manganese	0.00	0.00
Nickel	0.00	0.00
Anion/Cation Ratio	1.00	1.00
TDS (mg/L)	200,729	73,553
Density (g/cm)	1.13	1.05
Sampling Date	1/6/98	7/23/98
Account Manager		DON BLACKSTOCK
Analyst	DON BLACKSTOCK	SHEILA DEARMAN
Analysis Date		7/29/98
pH at time of sampling		5.90
pH at time of analysis	6.37	
pH used in Calculations	6.37	5.90

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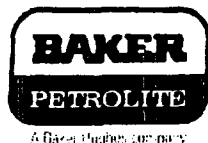
Water Analysis Report from Petrolite Corporation

REDLAKE
WELL #1
WELLHEAD

Summary		Analysis: 51873					
Anion/Cation Ratio	1.00	Anions	mg/L	meq/L	Cations	mg/L	meq/L
		Chloride	122,233	3,448	Sodium	53,950	2,347
TDS (mg/L or g/m³)	200,729	Bicarbonate	1,039	17.0	Magnesium	6,934	571
Density (g/cm³ or tonne/m³)	1.127	Carbonate	0.00	0.00	Calcium	11,969	597
		Sulfate	3,611	75.2	Strontium	58.0	1.32
Chemical Treatment		Phosphate	N/A	N/A	Barium	0.40	0.01
Sample Condition		Borate	N/A	N/A	Iron	35.0	1.25
		Silicate	N/A	N/A	Potassium	899	23.0
Sampling Date	1/6/98				Aluminum	N/A	N/A
Sampled by		Hydrogen Sulfide			Chromium	N/A	N/A
Submitted by	DON BLACKSTOCK				Copper	N/A	N/A
		pH at time of sampling			Lead	N/A	N/A
Analysis Date	1/15/98	pH at time of analysis		6.37	Manganese	N/A	N/A
Sample analysis number	51873	pH used in Calculations		6.37	Nickel	N/A	N/A

Pressure (psi)		Temp.	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
CO ₂	Total	°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
2.71	0.00	80	1.13	151	0.50	1,335	0.52	1,080	-0.14		0.79	0.18
3.34	0.00	100	1.22	161	0.44	1,235	0.52	1,085	-0.16		0.61	0.16
4.00	0.00	120	1.31	170	0.39	1,144	0.55	1,117	-0.17		0.44	0.14
4.66	0.00	140	1.39	179	0.35	1,063	0.61	1,169	-0.16		0.30	0.11

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



Offset San Andres Water

Water Analysis Report by Baker Petrolite

ARCO
LAGO ROSA 4
FED #4
WELLHEAD

Account Manager
DON BLACKSTOCK

Summary		Analysis of Sample 106619 @ 75°F					
Sampling Date	7/23/98	Anions	<i>mg/l</i>	<i>meq/l</i>	Cations	<i>mg/l</i>	<i>meq/l</i>
Analysis Date	7/29/98	Chloride	39939	1127	Sodium	25340	1102
Analyst	HEILA DEARMAN	Bicarbonate	1000	16.4	Magnesium	276	22.7
		Carbonate	0.00	0.00	Calcium	2150	107
TDS (mg/l or g/m ³)	73552.6	Sulfate	4596	95.7	Strontium	21.0	0.48
Density (g/cm ³ or tonne/m ³)	1.046	Phosphate	N/A	N/A	Barium	0.20	0.00
Anion/Cation Ratio	1.00	Borate	N/A	N/A	Iron	1.00	0.04
		Silicate	N/A	N/A	Potassium	229	5.86
Carbon Dioxide	0 PPM				Aluminum	N/A	N/A
Oxygen		Hydrogen Sulfide		100 PPM	Chromium	N/A	N/A
					Copper	N/A	N/A
		pH at time of sampling		5.90	Lead	N/A	N/A
		pH at time of analysis			Manganese	N/A	N/A
		pH used in Calculations		5.90	Nickel	N/A	N/A

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl										
Temp.	Gauge Press.	Calcite CaCO3		Gypsum CaSO4.2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4		CO2 Press.
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0.	-0.12		0.11	387	0.08	212	-0.13		0.98	0.10	10.6
100	0.	-0.00		0.07	251	0.10	276	-0.14		0.80	0.10	13.4
120	0.	0.12	28.2	0.04	148	0.15	399	-0.14		0.65	0.09	16.4
140	0.	0.24	56.5	0.02	76.3	0.22	561	-0.13		0.52	0.08	19.5

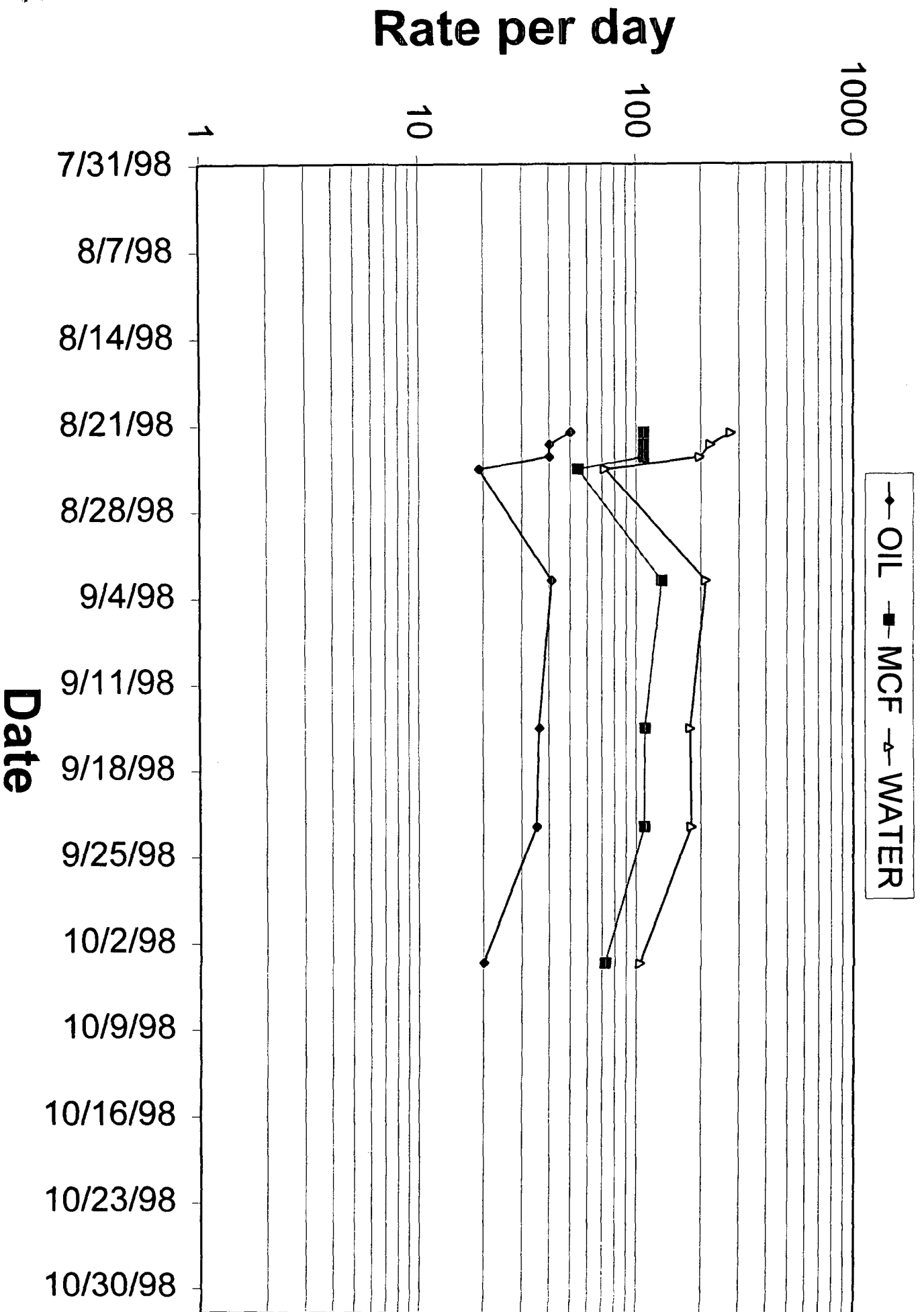
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

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: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET

Offset San Andres Rate Plat
Vermillion "3" Federal No. 4 (San Andres)



ARCO Permian
Downhole Commingling
Red Lake "3" Federal Well No. 1
API: 30-015-29801
1650' FNL & 330' FWL (E)
Section 3, 18-S, 27-E
Eddy County, New Mexico

Surface Owners for Unit E (Lot 5):

Bureau of Land Management
Carlsbad Resource Area
P. O. Box 1778
Carlsbad, NM 88220

Bogle, Ltd.
P. O. Box 460
Dexter, NM 88230-0460

Offset Operators:

Altura Energy, Ltd.
Attn: Mr. Jerry D. West
P.O. Box 4294
Houston, TX 77210-4294

Devon Energy Corp.
Attn: Mr. Ken Gray
20 North Broadway #1500
Oklahoma City, OK 73102

Ben J. Forston, John L. Marion, & Ann B. Windfohr, Trustees of the
Ann Valliant Burnett Windfohr Trust
c/o Burnett Companies
801 Cherry Street, Suite 1500
Fort Worth, TX 76102

Ann W. Sowell & Edward R. Hudson, Jr., Trustees of the
Anne Burnett Tandy Testamentary Trust
1500 Interfirst Tower
801 Cherry Street
Fort Worth, TX 76102

Robert H. Ziegler, Jr.
P. O. Box 8621
Ketchikan, AK 99901

Ann Z. Bradford
1036 Bell Street
Edmonds, WA 98020

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

Sec. 4					LOT 4 38.58 AC.	LOT 3 38.87 AC.	LOT 2 39.17 AC.	LOT 1 39.46 AC.
LOT 8 39.92 AC.	LOT 7 39.37 AC.	LOT 6 37.70 AC.	LOT 5 37.73 AC.	ARCO Altura Devon Altura 2005 #1 99°0' 3564.9' 3561.3' 3568.1' #2 3569.5'				
LOT 9 38.93 AC.	LOT 10 38.43 AC.	LOT 11 37.23 AC.	LOT 12 37.28 AC.	Altura Windfohr Trust Tandy Trust Ziegler Bradford Altura Windfohr Trust Tandy Trust Ziegler Bradford Devon Altura NAD 27 NME Y=646665.16 N X=519088.56 E				
LOT 16 38.85 AC.	LOT 15 38.64 AC.	LOT 14 37.82 AC.	LOT 13 37.61 AC.					
LOT 17 38.64 AC.	LOT 18 38.43 AC.	LOT 19 38.01 AC.	LOT 20 37.80 AC.					

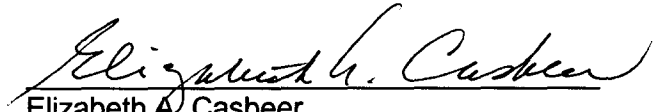
Devon
Altura
NAD 27 NME
Y=646665.16 N
X=519088.56 E

STATE OF TEXAS

COUNTY OF MIDLAND

BEFORE ME, the undersigned authority on this day personally appeared Elizabeth A. Casbeer, an Regulatory Compliance Analyst with **ARCO Permian**, who being by me duly sworn, deposes and states that the persons listed on the foregoing attached list have been sent a copy on November 18, 1998, of the New Mexico Oil Conservation Division Form C-107 entitled, "Application For Downhole Commingling" for the Red Lake "3" Federal Well Numbers 1 and 2, located in Section 3, T18S, R27E, Eddy County New Mexico.

ARCO Permian


Elizabeth A. Casbeer

SUBSCRIBED AND SWORN TO before me on November 18, 1998, to certify which witness my hand and seal of office.


NOTARY PUBLIC, STATE OF TEXAS

