Imperial-American Management Company

82

DHC-82

Rec Apr. 19

March 23, 1971

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.

Re: Request for Exception to Rule 303-A
Down-Hole Commingling - per Rule 303-C
Rosa Lee Federal Lease, Well No. 1
Drinkard and Wantz Abo Pools
Lea County, New Mexico

Gentlemen:

Imperial-American Management Company respectfully requests administrative approval under the provisions of Order No. R-3845 to commingle, in the well bore, oil production from the Drinkard Pool and the Wantz Abo Pool which are dually completed in our Rosa Lee Federal, Well No. 1, located in Unit F, Section 19, T-21-S, R-38-E, Lea County, New Mexico.

On initial tests, it was determined that the Drinkard zone was too weak to justify the expense of a pump unit, engine, and rod string. An Otis Permatrieve Packer was set @ 7150 (below the Drinkard and above the Abo) and the Wantz Abo zone was put on pump. The Drinkard zone was left open in the annulus but production equipment was not run for it. A permit for dual completion was never requested for this well.

We believe that this well qualifies for administrative approval of downhole commingling under the provisions of Rule 303-C. Both zones are classified as oil zones. The deepest perforation in the lower zone is at 7473' in this well. We attach Form C-116 showing the latest production test from the Wantz Abo and the last test information available from the Drinkard zone before it was isolated. These tests indicate the production rates for both oil and water fall within the limits specified by Rule 303-C. We also attach a copy of our production decline curve for the Wantz Abo Pool. The Wantz Abo is presently being artificially lifted with a rod pump. The Drinkard was tested on pump before being isolated. Therefore, a rod pump will be utilized after commingling.

Since the Drinkard zone has not been producing, we can not obtain a water sample from that zone; however, we have had water samples collected from a nearby well producing from these zones and had these samples checked for compatibility by

507 Midland Savings Building - Midland, Texas 79701 - 915-684-8241
Cable Address - IMPAM

Re: Request for Exception to Rule 303-A
Down-Hole Commingling - per Rule 303-C
Rosa Lee Federal Lease, Well No. 1
Drinkard and Wantz Abo Pools
Lea County, New Mexico

Baroid. Copies of these offset well water reports are attached. The reports indicate there will not be an instability problem caused by mixing water from the Drinkard and Wantz Abo Pools.

We also attach a data sheet on which we have indicated our estimates of the current bottom hole pressures of these zones and a calculation showing that the commingled production will not have less value than the individual streams sold separately.

Ownership of the production from both zones is common as to royalty, overriding royalty, and working interests.

This lease is on Federal land. Copies of this application are being submitted to the United States Geological Survey and to the offset operators shown on the attached list.

Very truly yours,

IMPERIAL-AMERICAN MANAGEMENT COMPANY

Darol K. Ramey

DKR:lb
Attachments

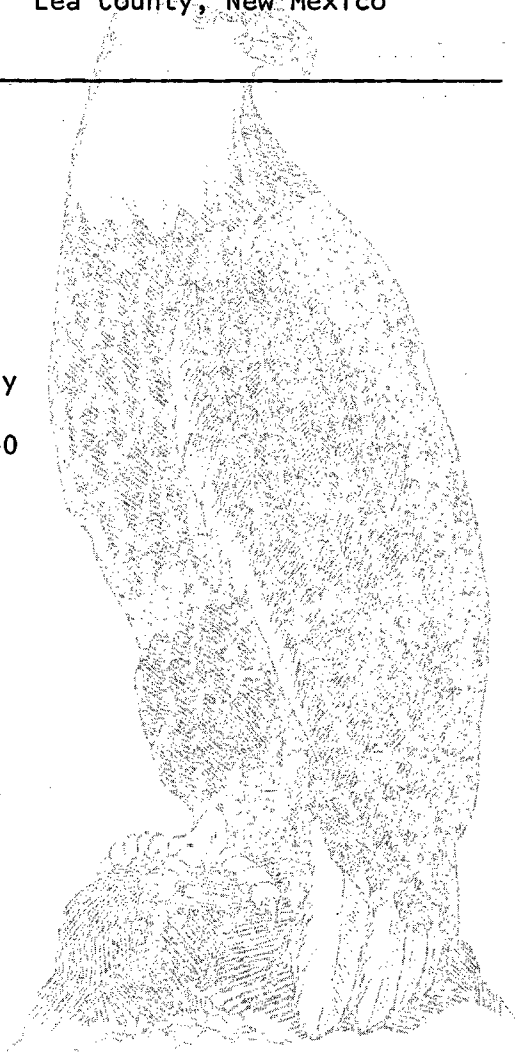
507 Midland Savings Building - Midland, Texas 79701 - 915-684-8241
Cable Address - IMPAM

LIST OF OFFSET OPERATORS

Imperial-American Management Company
Rosa Lee Federal Lease
Lea County, New Mexico

Gulf Oil Co. - U.S.
P. O. Box 1938
Roswell, New Mexico

Continental Oil Company
P. O. Box 460
Hobbs, New Mexico 88240



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NEW MEXICO OIL CONSERVATION COMMISSION

GAS – OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
Imperial-American Management Co.	*See Below	Lea

Address	TYPE OF TEST – (X)	Scheduled ☐	Completion ☐	Special ☒
507 Midland Savings Bldg., Midland, Texas 79701				

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT./BBL.
DRINKARD POOL																
Rosa Lee Federal	1	F	19	21	38	5-10-69	P	Open	25	--	24	36	38.5	4	12.6	3150
Last test available prior to zone being shut in.																
WANTZ ABO POOL																
Rosa Lee Federal	1	F	19	21	38	3-17-71	P	Open	25	39	24	10	39.5	15	20.5	1367
*SPECIAL TEST - REQUEST FOR DOWN-HOLE COMMINGLING																

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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

Darol K Ramey
(Signature)

Division Manager
(Title)

March 23, 1971
(Date)

Wantz Abo Fld.

Rosa Lee Federal #1-F

Production BOPM

10,000

1,000

100

50%/Year Decline

DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC. MAR. JUN. SEP. DEC.

19_69	19_70	19_71	19_72	19_73	1974	19_75	19_76	19_77	19_78

BAROID DIVISION
NATIONAL LEAD COMPANY
PETROLEUM INDUSTRY CHEMICALS

WATER ANALYSIS TEST REPORT

SHEET NUMBER

COMPANY: Imperial American Management Co

DATE: 9-9-70

FIELD: Eunice

COUNTY OR PARISH: Lea

STATE: New Mexico

LEASE OR UNIT: Gulf's Sarkey

WELL(S) NAME OR NO.: 1

WATER SOURCE (FORMATION): Abo

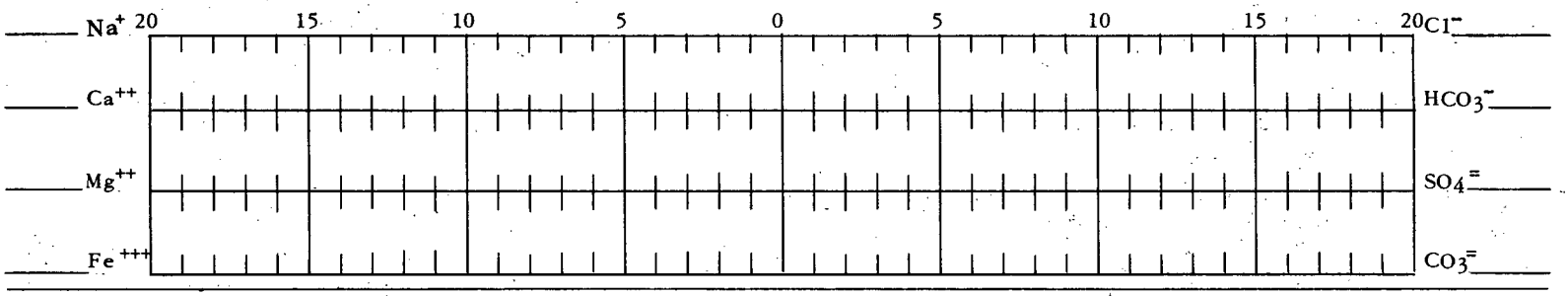
DEPTH, FT.	BHT, F	SAMPLE SOURCE	TEMP, F	WATER, BBL/DAY	OIL, BBL/DAY	GAS, MMCF/DAY
		Well Head				

TYPE OF OIL:

API GRAVITY: o

TYPE OF WATER: [X] PRODUCED WATER [ ] INJECTION WATER OTHER _____

WATER ANALYSIS PATTERN
(NUMBER BESIDE ION SYMBOL INDICATES me/l * SCALE UNIT)



DISSOLVED SOLIDS

CATIONS	me/l *	mg/l *
Total Hardness	952	
Sodium, Na^+ (calc.)	2613	60129
Calcium, Ca^{++}	690	13800
Magnesium, Mg^{++}	262	3196
Iron (Total), Fe^{+++}	2.5	55
ANIONS		
Chloride, Cl^-	3540	126000
Sulfate, $SO_4^=$	20	950
Carbonate, $CO_3^=$	.5	15
Bicarbonate, HCO_3^-	6.8	415
Hydroxyl, OH^-		
Sulfide, $S^=$		NT
Phosphate-Meta, PO_3^-		
Phosphate-Ortho, $PO_4^{\equiv}$		

DISSOLVED GASES

Hydrogen Sulfide, H_2S		mg/l *
Carbon Dioxide, CO_2		mg/l *
Oxygen, O_2		mg/l *

PHYSICAL PROPERTIES

pH	7.4	
Eh (Redox Potential)		MV
Specific Gravity		
Turbidity, JTU Units		
Total Dissolved Solids (Calc.)		mg/l *
Stability Index @ ____ F		
@ ____ F		
$CaSO_4$ Solubility @ ____ F		mg/l *
@ ____ F		mg/l *
Max. $CaSO_4$ Possible (Calc.)		mg/l *
Max. $BaSO_4$ Possible (Calc.)		mg/l *
Residual Hydrocarbons		ppm(Vol/Vol)

SUSPENDED SOLIDS (QUALITATIVE)

Iron Sulfide [ ] Iron Oxide [ ] Calcium Carbonate [ ] Acid Insoluble [ ]

REMARKS AND RECOMMENDATIONS:

* NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

PIC ENGINEER	DIST. NO.	ADDRESS	OFFICE PHONE	HOME PHONE
Cliff G. Gardner	21	Eunice, New Mexico	393-8622	394-2421
TESTED BY	**DATE**	**DISTRIBUTION**		
Cliff G. Gardner	9-9-70	[ ] CUSTOMER [ ] AREA OR [ ] DISTRICT OFFICE [ ] PIC ENGINEER OR [ ] PIC LAB [ ] PIC SALES SUPERVISOR		

FORM #BR-2149A

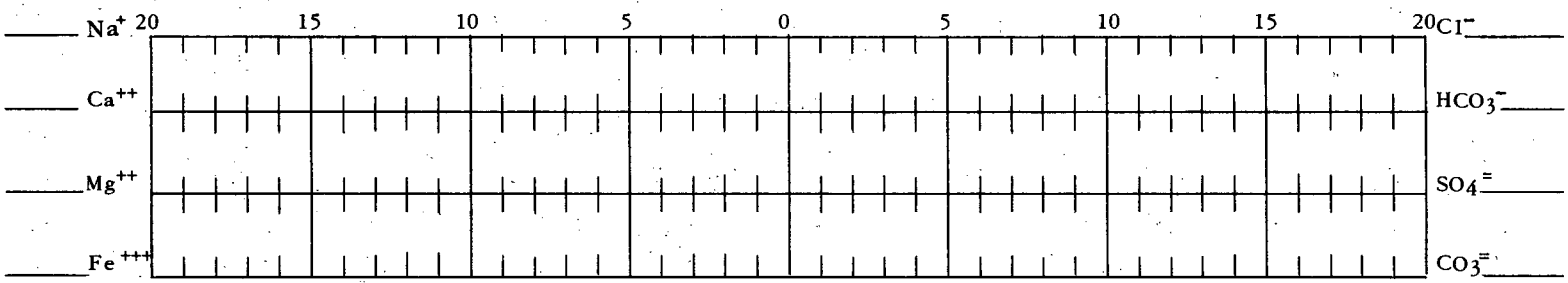
BAROID DIVISION
NATIONAL LEAD COMPANY
PETROLEUM INDUSTRY CHEMICALS

WATER ANALYSIS TEST REPORT

SHEET NUMBER

COMPANY: Imperial American Management Co					DATE: 9-9-70
FIELD: Eunice			COUNTY OR PARISH: Lea		STATE: New Mexico
LEASE OR UNIT: Gulf's Sarkey	WELL(S) NAME OR NO.: 2		WATER SOURCE (FORMATION): Drinkard		
DEPTH, FT.	BHT, F	SAMPLE SOURCE: Well Head	TEMP, F	WATER, BBL/DAY	OIL, BBL/DAY	GAS, MMCF/DAY
TYPE OF OIL	API GRAVITY: °	TYPE OF WATER: [X] PRODUCED WATER [ ] INJECTION WATER OTHER				

WATER ANALYSIS PATTERN
(NUMBER BESIDE ION SYMBOL INDICATES me/l* SCALE UNIT)



DISSOLVED SOLIDS

CATIONS	me/l*	mg/l*
Total Hardness	866	
Sodium, Na^+ (calc.)	2725	62675
Calcium, Ca^{++}	614	12280
Magnesium, Mg^{++}	252	3074
Iron (Total), Fe^{+++}	5.0	100
ANIONS		
Chloride, Cl^-	3570	127,000
Sulfate, $SO_4^=$	18	875
Carbonate, $CO_3^=$	NT	
Bicarbonate, HCO_3^-	7.5	457
Hydroxyl, OH^-		
Sulfide, $S^=$		NT
Phosphate-Meta, PO_3^-		
Phosphate-Ortho, $PO_4^{\equiv}$		

DISSOLVED GASES

Hydrogen Sulfide, H_2S		mg/l*
Carbon Dioxide, CO_2		mg/l*
Oxygen, O_2		mg/l*

PHYSICAL PROPERTIES

pH	7.1	
Eh (Redox Potential)		MV
Specific Gravity		
Turbidity, JTU Units		
Total Dissolved Solids (Calc.)		mg/l*
Stability Index @ F		
@ F		
$CaSO_4$ Solubility @ F		mg/l*
@ F		mg/l*
Max. $CaSO_4$ Possible (Calc.)		mg/l*
Max. $BaSO_4$ Possible (Calc.)		mg/l*
Residual Hydrocarbons		ppm(Vol/Vol)

SUSPENDED SOLIDS (QUALITATIVE)

Iron Sulfide [ ] Iron Oxide [ ] Calcium Carbonate [ ] Acid Insoluble [ ]

REMARKS AND RECOMMENDATIONS:

A sample of the water from the Abo formation, from the well head, was not available, but using water from the Abo of well #1 indicates that comingling will not present a problem.

* NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

PIC ENGINEER	DIST. NO.	ADDRESS	OFFICE PHONE	HOME PHONE
Cliff G. Gardner	21	Eunice, New Mexico	393-8622	394-2421

TESTED BY	DATE	DISTRIBUTION
Cliff G. Gardner	9-9-70	[ ] CUSTOMER [X] PIC ENGINEER OR [ ] PIC LAB [ ] AREA OR [ ] DISTRICT OFFICE [X] PIC SALES SUPERVISOR

FORM #BR-2149A

DATA SHEET

Request for Down-Hole Commingling
Imperial-American Management Co.
Rosa Lee Federal No. 1

I. Estimated Bottom Hole Pressure

A. Drinkard Pool Completion

This zone has not been producing in this well. Offset wells have exhibited performance which we believe indicates the following:

Estimated Operating BHP - 200 psi
Estimated Static BHP - 600 psi

B. Wantz Abo Pool Completion

Lower zone, cannot obtain fluid levels.
Pressure is low enough to limit pump efficiency to 25%.

Estimated Operating BHP - 300 psi
Estimated Static BHP - 800 psi

II. Value of Commingled Production

Oil from the Wantz Abo is being sold to The Permian Corporation; the commingled production will also be sold to them. The price is based on Atlantic Richfield's posting for West Texas-New Mexico intermediate grade crude, with a top price of $3.56/bbl. for 40 deg. API and a 2¢/degree price differential for each degree below 40 degree API.

The Drinkard zone oil normally is 38.5 deg. API with a price of $3.52/bbl. The Wantz Abo oil is normally 39.5 deg. API with a price of $3.54/bbl. At the test rates of production the gravity of the mixture should be at least 39.0 deg. API and receive a price of $3.54/bbl.

Drinkard	- Avg. Price $3.52/bbl. x 4 BOPD equals	$14.00/day
Wantz Abo	- Avg. Price $3.54/bbl. x 15 BOPD equals	53.10/day
		$67.18/day
Mixture	- Avg. Price $3.54/bbl. x 19 BOPD equals	$67.26/day

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DATA SHEET - continued

Request for Down-Hole Commingling
Imperial-American Management Co.
Rosa Lee Federal No. 1

No loss in value of product should result from commingling this production in the well bore.

Darol K. Ramey

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