HEAFITZ ENERGY MANAGEMENT, INC. <u>MEXICO "P" FEDERAL NO. 1</u> <u>SEC 21-T26S-R35E</u> <u>LEA COUNTY, NEW MEXICO</u>

DISCUSSION OF PRODUCTION:

ATOKA: WHEN HEAFITZ ENERGY MANAGEMENT, INC. PURCHASED THIS PROPERTY FROM TEXACO, INC. IN AUGUST, 1989, THE WELL WAS PRODUCING FROM ATOKA PERFORATIONS AT 15,565 - 15,616 FEET. ATOKA GAS PRODUCTION WAS 200 MCFGPD AT 1600 PSIG FTP. WATER PRODUCTION WAS AVERAGING 15 BWPD WITH SMALL VOLUMES OF CONDENSATE OCCASIONALLY BEING PRODUCED. THIS ORIGINAL SET OF ATOKA PERFORATIONS WAS CEMENT SQUEEZED AND THE ATOKA COM-PLETELY SHUT OFF.

AFTER TESTING AND COMPLETING THE DEVONIAN, THIS ATOKA INTER-VAL WAS REPERFORATED FROM 15,564 - 15,618 FEET. THE INTERVAL WAS ACID FRACED AND TESTED FOR FLOWRATES AS HIGH AS 1.500 MMCFGPD AT 2,500 PSIG FTP. WATER PRODUCTION FROM THE REPER-FORATED ATOKA INTERVAL WAS 20 - 25 BWPD, DURING A SHORT DURATION CLEANUP AND TESTING PERIOD. THIS WATER ANALYZED AS TREATMENT WATER. NO CONDENSATE WAS PRODUCED AFTER REWORK OF THE ATOKA INTERVAL. COMPARISON OF CEMENT BOND LOGS, THE FIRST RUN BEFORE ORIGINAL COMPLETION AND THE SECOND RUN AFTER REWORK, INDICATED THAT THE ATOKA ORIGINALLY HAD BEEN COMMUNICATING WITH MULTIPLE ZONES BEHIND THE 7 5/8" LINER. TOTAL ISOLATION HAS NOW BEEN AFFECTED ON THE ATOKA REPER-FORATED INTERVAL.

ATOKA PRESSURE AND PRODUCTION DATA:

ESTIMATED ORIGINAL BOTTOMHOLE PRESSURE, PSI	12,400
REMAINING BOTTOMHOLE PRESSURE, PSI	7,900
APPARENT DRAWDOWN W/ CUM PRODUCTION, PSI	4,500
CUMULATIVE RECOVERED GAS, BCF (THRU 08/89)	2.500
INITIAL RECOVERABLE GAS, BCF	3.150
APPARENT REMAINING RECOVERABLE GAS, BCF	0.650
DELIVERABILITY AFTER REWORK, MCFGPD	1,250
ESTIMATED FTP AFTER REWORK, PSIG	2,500

NOTE: IT IS APPARENT THAT REMAINING RECOVERABLE RESERVES AT-TRIBUTABLE TO THE ATOKA WILL NOW INCREASE AN INDETERMINATE AMOUNT, AS A RESULT OF HIGHER COMPLETION EFFICIENCIES. THIS WILL BE EVIDENT IN A SHIFT OF P/z PLOT FOR ATOKA ZONE. DEVONIAN: THE MEXICO "P" FEDERAL NO. 1 WELL WAS RE-ENTERED TO REWORK THE EXISTING ATOKA PRODUCING INTERVAL AND TEST THE DEVONIAN-SILURIAN-FUSSELMAN INTERVAL.

AFTER RUNNING AND CEMENTING A 5" PRODUCTION LINER BELOW EX-ISTING 7 5/8" LINER IN THE "P" FEDERAL, THE DEVONIAN WAS PERFORATED FROM 19,214 - 19,225 FEET AND 19,382 - 19,398 FEET. THESE PERFORATED INTERVALS WERE ACID FRACED AND TESTED.

DEVONIAN PRESSURE AND FLOWTEST DATA:

MEASURED BOTTOMHOLE PRESSURE, PSI 8,375

ESTIMATED RECOVERABLE GAS, BCF 2.250

DELIVERABILITY AFTER TEST, MCFGPD1,500ESTIMATED FTP AT DELIVERABILITY, PSIG2,500

BOTTOMHOLE PRESSURE OF 8,375 PSI WAS ESTABLISHED FROM DRILLSTEM TEST AND EXTRAPOLATION TO P*.

VOLUMETRIC CALCULATIONS OF INITIAL-GAS-IN-PLACE INDICATES 10.000+- BCF ATTRIBUTABLE TO THE "P" FEDERAL DEVONIAN. EMPLOYING A 20+ PERCENT RECOVERY FACTOR PROVIDES ESTIMATED RECOVERABLE GAS OF 2.250 BCF.

HEAFITZ ENERGY MANAGEMENT, INC. MEXICO "P" FEDERAL NO. 1 SEC 21-T26S-R35E LEA COUNTY, NEW MEXICO

Pressure Analysis

Denth	Atoka	 Remarks	Dev	Remarks
ft	psi	ACMAL AD	psi	Nemar XB
	 5858	May Shut-in	5846	Max Shut-in
500	5923	nur bilut in	5911	nun onuo m
1000	5989	Assume 0.131 psi/ft	5977	Assume 0.131 psi/ft
1500	6054	gas gradient from	6042	gas gradient from
2000	6120	gas analysis	6108	gas analysis
2500	6185	J	6173	J
3000	6251		6239	
3500	6316		6304	
4000	6382		6370	
4500	6447		6435	
5000	6513		6501	
5500	6578		6566	
6000	6644		6632	
6500	6709		6697	
7000	6775		6763	
7500	6840		6828	
8000	6906		6894	
8500	6971		6959	
9000	7037		7025	
9500	7102		7090	
10000	7168		7156	
10500	7233		7221	
11000	7299		7287	
11500	7364		7352	
12000	7430		7418	
12500	7495		7483	
13000	7561		7549	
13500	7620		7614	
14000	7092		7000	
14500	7757		7911	
15500	7023		7876	
15500	7000	Atoka porfs mid-nt	7888	
16000	7950	Acona peris mia pe	7942	
16500	8019		8007	
17000	8085		8073	
17500	8150		8138	
17818	8192	Atoka check valve	8180	
17983	8213	Trend offer furte	8202	Devonian check valve
18000	8216		8204	
18500	8281		8269	
19000	8347		8335	
19306	8387		8375	Devonian perfs mid-pt
				T I I I I I

HEAFITZ ENERGY MANAGEMENT, INC. MEXICO "P" FEDERAL NO. 1 SECTION 21-T26S-R35E LEA COUNTY, NEW MEXICO

COST COMPARISON DEVONIAN & ATOKA: DUAL -V- COMMINGLED COMPLETION						
Description of Costs:	Dual	Comgld	Diff			
Intangibles:						
Rig plus average daily fixed costs	\$47,250	\$20,250	\$27,000			
Tangibles:						
Tubing:						
17893' 2 7/8", 9.5 #/ft, L80, PH6CB tbg Owners prop.	-	-				
15150' 2 7/8", 9.5 #/ft, L80, PH6CB tbg @\$6/ft	\$90,900		\$90,900			
Downhole Production Equipment:						
RLA, PBR & Seal Assmbly		-				
Pkr & Seal Assmbly (Atoka)	\$45,250	\$34,215	\$11,035			
Surface Production Equipment:						
Dual Flow Tree	\$65,000		\$65,000			
Dual flowlines	\$7,500		\$7,500			
2nd Separator & Dehy	\$25,500		\$25,500			
Installation of 2nd system	\$15,000		\$15,000			
Totals	\$296,400	\$54,465	\$241,935			

STATE OF NEW MEXICO ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 9922 Order No. R-9182

APPLICATION OF HEAFITZ ENERGY MANAGEMENT INC. FOR DOWNHOLE COMMINGLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on May 2, 1990, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this <u> $30 \pm h$ </u> day of May, 1990, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

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

(2) The applicant, Heafitz Energy Management Inc., seeks approval to commingle gas production from the Arena Roja-Pennsylvanian Gas Pool and Wildcat Siluro-Devonian Pool within the wellbore of the Falcon Engineering Company Inc. Mexico "P" Federal Well No. 1 located 1980 feet from the North and West lines (Unit F) of Section 21, Township 26 South, Range 35 East, NMPM, Lea County, New Mexico.

(3) The subject well was originally drilled in 1968, was completed in the Arena Roja-Pennsylvanian Gas Pool in January, 1969, and has produced from said pool to the present time.

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(4) The applicant has recently perforated and tested the Siluro-Devonian formation within the subject well and has encountered commercial gas production from said formation.

(5) Testimony by the applicant indicates that the remaining gas reserves within the Arena Roja-Pennsylvanian Gas Pool do not economically justify the installation of dual production and separation equipment.

(6) The proposed downhole mechanical configuration, according to evidence presented, is such that cross flow between the Atoka and Siluro-Devonian formations should not occur within the subject well thereby assuring that waste or formation damage is precluded.

(7) The subject well is located within the applicant's Tres Amigos Unit Area, approved by Division Order No. R-9021 on October 19, 1989.

(8) No other offset operator or interest owner appeared at the hearing in opposition to the application.

(9) Approval of the proposed downhole commingling will result in the recovery of additional gas reserves from the Arena Roja-Pennsylvanian Gas Pool, thereby preventing waste, and will not violate correlative rights.

(10) The applicant should consult with the supervisor of the Hobbs district office of the Division in order to determine an allocation formula for the allocation of production to each zone in the subject well.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Heafitz Energy Management Inc, is hereby authorized to commingle the Arena Roja-Pennsylvanian Gas Pool and Wildcat Siluro-Devonian Gas Pool production within the wellbore of its Falcon Engineering Company Inc. Mexico "P" Federal Well No. 1 located 1980 feet from the North and West lines (Unit F) of Section 21, Township 26 South, Range 35 East, NMPM, Lea County, New Mexico.

(2) The applicant shall consult with the supervisor of the Hobbs district office of the Division in order to determine an allocation formula for the allocation of production to each zone in the subject well. CASE NO. 9922 Order No. R-9182 Page -3-

(3) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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



STATE OF NEW MEXICO OIL CONSERVATION DIVISION

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WILLIAM J. LEMAY Director