STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. Box 2088
SANTA FE, NEW MEXICO
87501

ADMINISTRATIVE ORDER

NFL 25

INFILL DRILLING FINDINGS PURSUANT TO
SECTION 271.305(b) OF THE FEDERAL ENERGY REGULATORY
COMMISSION REGULATIONS, NATURAL GAS POLICY ACT OF 1978
AND OIL CONSERVATION DIVISION ORDER NO. R-6013-A

I.

Operator AMERADA HESS CORP. Well Name and No. State LM "T" Well No. 10

Location: Unit H Sec. 36 Twp. 23S Rng. 36E Cty. Lea County

II.

THE DIVISION FINDS:

(1) That Section 271.305(b) of the Federal Energy Regulatory Commission Regulations promulgated pursuant to the Natural Gas Policy Act of 1978 provides that, in order for an infill well to qualify as a new onshore production well under Section 103 of said Act, the Division must find that the infill well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within that unit.

(2) That by Order No. R-6013-A, dated February 8, 1980, the Division established an administrative procedure whereby the Division Director and the Division Examiners are empowered to act for the Division and find that an infill well is necessary.

(3) That the well for which a finding is sought is completed in the Jalmat Gas Pool, and the standard spacing unit in said pool is 640 acres.

(4) That a 160-acre proration unit comprising the NE/4 of Sec. 36, Twp. 23S, Rng. 36E, is currently dedicated to ~~the~~ said State LM "T" Well No. 10 ~~located in Unit of said Section~~.

(5) That this proration unit is ( ) standard ( ) nonstandard; if nonstandard, said unit was previously approved by Order No. NSP-1193.

(6) That said proration unit is not being effectively and efficiently drained by the existing well(s) on the unit. (said well being plugged and abandoned 9/15/80).

(7) That the drilling and completion of the well for which a finding is sought should result in the production of an additional 0.736 B MCF of gas from the proration unit which would not otherwise be recovered.

(8) That all the requirements of Order No. R-6013-A have been complied with, and that the well for which a finding is sought is necessary to effectively and efficiently drain a portion of the reservoir covered by said proration unit which cannot be so drained by any existing well within the unit.

(9) That in order to permit effective and efficient drainage of said proration unit, the subject application should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant is hereby authorized to drill the well described in Section I above as an infill well on the existing proration unit described in Section II(4) above. The authorization for infill drilling granted by this order is necessary to permit the drainage of a portion of the reservoir covered by said proration unit which cannot be effectively and efficiently drained by any existing well thereon.

(2) That 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 this 13th day of March, 1981.

DIVISION DIRECTOR ____ EXAMINER ____

OIL CONSERVATION DIVISION
P. O. Box 2088
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(2) That by Order No. R-6013-A, dated February 8, 1980, the Division established an administrative procedure whereby the Division Director and the Division Examiners are empowered to act for the Division and find that an infill well is necessary.

(3) That the well for which a finding is sought is to be completed in the Jalmat Gas Pool, and the standard spacing unit in said pool is 640 acres.

(4) That a 160-acre proration unit comprising the NE/4 of Sec. 36, Twp. 23-S, Rng. 36 E, is currently dedicated to ~~the~~ said State LM "T" Well No 10 ~~located in Unit~~ ~~of said section~~.

(5) That this proration unit is ( ) standard (X) nonstandard; if nonstandard, said unit was previously approved by Order No. NSP 1193.

(6) That said proration unit is not being effectively and efficiently drained by the existing well(s) on the unit (said well being Plugged and abandoned 9/15/80).

(7) That the drilling and completion of the well for which a finding is sought should result in the production of an additional 0.736 B MCF of gas from the proration unit which would not otherwise be recovered.

(8) That all the requirements of Order No. R-6013-A have been complied with, and that the well for which a finding is sought is necessary to effectively and efficiently drain a portion of the reservoir covered by said proration unit which cannot be so drained by any existing well within the unit.

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IT IS THEREFORE ORDERED:

(1) That the applicant is hereby authorized to drill the well described in Section I above as an infill well on the existing proration unit described in Section II(4) above. The authorization for infill drilling granted by this order is necessary to permit the drainage of a portion of the reservoir covered by said proration unit which cannot be effectively and efficiently drained by any existing well thereon.

(2) That 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 this _____ day of _____, 19_____.

DIVISION DIRECTOR ___ EXAMINER _____

AMERADA HESS CORPORATION

P.O. Box 840
SEMINOLE, TEXAS 79360
915-758-6700

March 10, 1981

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

Re: Request for Administrative
NGPA Infill Well Finding,
State LM "T" Well No. 10
Jalmat Gas Pool, Lea County
New Mexico

Attention: Mr. R. L. Stamets
Technical Support Chief

Gentlemen:

The Amerada Hess Corporation respectfully requests that an administrative finding be made under the Oil Conservation Division Order R-6013 that the drilling of the AHC State LM "T" Well No. 10 infill well was necessary to effectively and efficiently drain a portion of the Jalmat Gas Pool covered by a proration unit which cannot be drained by any existing well within the unit.

The following data is submitted to comply with the filing requirements of the order:

1. (Rule 5) A copy of the approved Form C-101 for the infill well and Form C-102 showing the proration unit dedicated to the infill well is attached.
2. (Rule 6) The standard proration unit size for the Jalmat Gas Pool is 640 acres as designated by Order R-521, dated August 12, 1954 suceeded by Order R-1670.
3. (Rule 7) The non-standard proration unit dedicated to the subject well was approved by Administrative Order NSP-1193 dated May 26, 1980. NE/4 Sec 36
4. (Rule 8) There are two wells drilled on this proration unit that have been completed in the Jalmat Gas Pool. The pertinent data for the original well, State LM "T" No. 5, is set out in Exhibit No. 2.
5. (Rule 9) Geological and reservoir information presented in support of a finding as to the necessity for an infill well includes:

a. Full completion detail on Well No. 10 including pay thickness, water saturation, pressure, etc. Exhibit No. 3
b. Volumetric calculation of the reserves under the 160 acre tract at this time based upon completion data from Well No. 10. Exhibit No. 4.
c. A demonstration of what may reasonably be expected to be recovered from Well No. 10. Exhibit No. 5

6. (Rule 11) All operators of proration units offsetting the unit for which this infill finding is sought have been notified of this application by certified mail.

Sincerely yours,

William A. Merrick
Operations Engineer

WAM/eh

XC - M M Freeman
Alg. Jez
Prod P&C
MC Black
D Lawson

1-7-80

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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101
Revised 1-1-65

5A. Indicate Type of Lease: STATE [X] FEE [ ]

5. State Oil & Gas Lease No.: B 1431

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well: OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. Unit Agreement Name:

8. Farm or Lease Name: State LM "T"

2. Name of Operator: Amerada Hess Corporation

9. Well No.: 10

3. Address of Operator: Drawer "D", Monument, New Mexico

10. Field and Pool, or Wildcat: Jalmat

4. Location of Well: UNIT LETTER H LOCATED 1860 FEET FROM THE North LINE AND 780 FEET FROM THE East LINE OF SEC. 36 TWP. 23 S RGE. 36 E NMPM

12. County: Lea

19. Proposed Depth: 3540

19A. Formation: Yates-7 Rivers

20. Rotary or C.T.: Rotary

21. Elevations (Show whether DF, RT, etc.): 3319.5 G.L.

21A. Kind & Status Plug. Bond: Blanket

21B. Drilling Contractor: Cactus

22. Approx. Date Work will start: Jan 1980

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12 1/4	8 5/8	32#	300'	200	Circulate
7 7/8	5 1/2	15#	3540'	800	Circulate

Drill 12 1/4" surface and set 8 5/8 casing, circulate cement. Drill out with 7 7/8 bit to 3540, run logs and set 5 1/2" casing, circulate cement. Complete in the Yate-7 Rivers.

Blowout Equipment, consists of 10" Cameron Type "F" Series 900 Dbl. Hyd. w/Payne closing Unit, Gas separator and de-gasser complete w/Auto.Choke. All BOP equipment will be checked periodically by a Cactus Drilling Company driller and Amerada Hess well site drilling supervisor.

Gas dedicated to purchaser.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

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

Signed [signature] Title District Engineer Date 12-26-79

(This space for State Use)

APPROVED BY [signature] TITLE SUPERVISOR DISTRICT [illegible] DATE JAN 3 1980

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

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SANTA FE

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
AMERADA HESS CORP.	State-LMT	10

Unit Letter	Section	Township	Range	County
H	36	23 South	36 East	Lea

Actual Footage Location of Well: 1860 feet from the north line and 780 feet from the east line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3319.5			Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

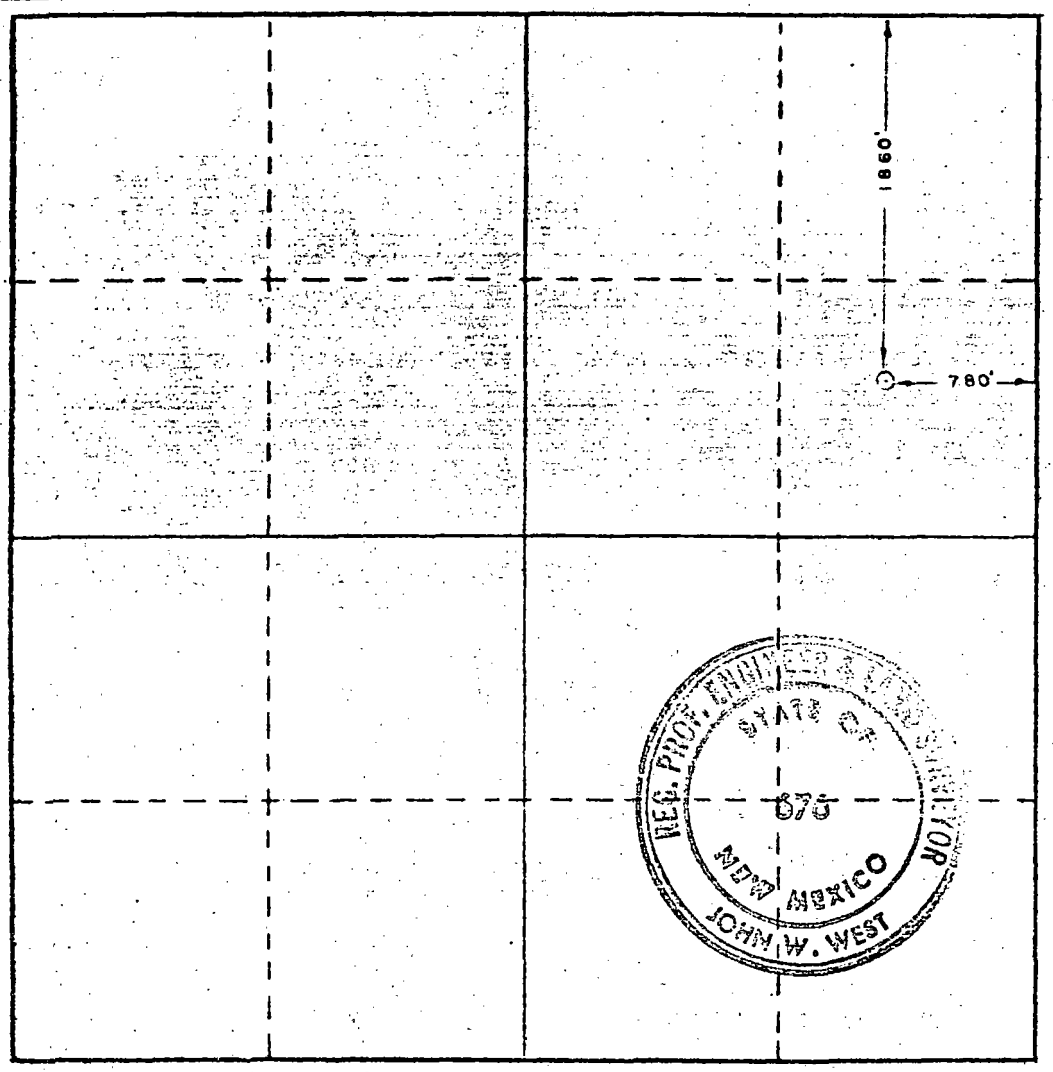
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

Name

Position

Company

Date

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 knowledge and belief.

Date Surveyed
Dec. 8, 1979

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W. West 676
Ronald J. Eidson 3239

Exhibit No. 2

State LM "T" Well No. 5
Jalmat Gas Pool
660' FNL & 660' FEL, Sec. 36, T23S, R36E
Lea County, New Mexico

Well History

Elevation: 3327'

Spud Date: March 30, 1949

Completion Dates: April 20, 1949 (Langlie Mattix Queen)
February 4, 1954 (Jalmat)

Abandonment Date: September 14, 1980 (Jalmat)

Casing: Surface: 8-5/8" 32# smls @ 307' cemented with 1755 sx.
Production: 5-1/2" 15.5# smls @ 3485' cemented with 500 sx.

Tubing: 2-3/8" IPC set in Model "D" pkr. @ 3430'.

Perforations: Open hole, 3485' - 3600' (Langlie Mattix Queen)
Perforations: 2835'-60, 2995'-3100', 3150'-75, 3235'-60', 3300' -20', 3400'-20', with 4 shots per foot.

Jalmat Zone Initial Test:

Absolute open flow February 9, 1954.
2,800 MCF/D 236 psi tubing pressure

Jalmat Zone Workover History:

8/14/59 - Sand oil frac Jalmat perfs. After frac test 77 B.O., 2039 MCF, GOR 26,333.

6/12/60 - Began producing as oil-oil dual, classified as Jalmat oil well.

1/06/66 - Well reclassified as gas well temporarily abandoned well.

4/12/78 - Blanked off Langlie Mattix injection and jetted tubing with nitrogen. Jalmat zone unable to flow to pipeline.

9/15/80 - Squeezed Jalmat perfs.

Production: Cumulative oil - 6900 BBLS.
Cumulative gas - .6205 BCF

Present Status:
Single injection well in Langlie Mattix, operated by Getty Oil Company as Myers Langlie Mattix #63.

Exhibit No. 3

State LM "T" Well No. 10
Jalmat Gas Pool
1860' FNL & 780' FEL, Sec. 36, T23S, R36E
Lea County, New Mexico

Completion Summary

Elevation: 3320 G.L., 3329 D.F., 3330 K.B.

Total Depth: 3305'

Casing: Surface: 8-5/8" 24# K-55 @ 339', 325 sx cement, cement circulated.

Production: 5-1/2" 17# various grades @ 2915' 1000 sx cement, cement circulated.

Tubing: 1-1/2" tubing set open ended at 3298.

Producing Interval: Open hole; 2915' to 3305', 390' air drilled open hole, no stimulation.

Logging Program: Open hole producing interval.
Schlumberger FDC w/Gamma Ray
SNP, IFS, Temperature
Log.

Log Analysis:
Gross interval 390'
Net producible pay (Ø greater than 6%0); 179 feet
Average porosity; 14.4%
Average water saturation; 48%

Production Tests: Drilling gas gauges.
3272', 1,629 MCF/D @ 55 psi
3305', 1,629 MCF/D @ 55 psi

Northern Natural Gas 4 Point Test:
Final flow rate 478 MCF/D FTP 80 psi
CITP 162 psi, CICP 167 psi.

Initial gas sales 492 MCF/D FTP 58 psi

Exhibit #4

State LM "T" No. 10
Jalmat Gas Pool

Volumetric Reserves
160 Acres

$$N = \frac{43560\ A\ h\ \emptyset\ (1 - S_W)\ (P_i)\ 35.35\ (R.F.)\ B.C.F.}{T_i\ (Z_i)\ (1 \times 10^9)}$$

N	=	Gas in Place in B.C.F.	
A	=	Acreage	160
h	=	Net Pay	179'
$\emptyset$	=	Porosity (average)	14.4%
S_W	=	Water saturation	48%
P_i	=	Initial Pressure	167 psi
R.F.	=	Recovery factor	90%
T_i	=	Initial temperature	545° R
Z_i	=	Gas compressibility	.985

43560 & 35.35 numerical constants

$$N = \frac{43560\ (160)\ (179)\ (.144)\ (1-.48)\ (167)\ (35.35)\ (.9)}{(545)\ (.985)\ (1 \times 10^9)}$$

N = .925 BCF Gas in Place

State LM "T" No. 10
Jalmat Gas Pool

Anticipated Recovery

The anticipated recovery has been calculated using the time-rate curves of several adjacent wells in the Jalmat Pool (Exhibits 5a, 5b, 5c, 5d, and 5e). A decline rate was calculated for each well using the following formula;

$$a = \frac{\left[-\ln\left(\frac{Q_i}{Q_t}\right)\right]}{T}$$

a = monthly decline rate
Q_i = rate at beginning of period
Q_t = rate at end of period
a = monthly decline rate for area

The following rates were calculated. (Refer to Exhibits 5a, 5b, 5c, 5d, 5e.)

Amerada Hess State LM "T" No. 2	.0173
ARCO, John P. Combest, No. 1	.0195
Cities Service, State Q, No. 1	.0153
Conoco, Lynn B. 25, No. 2	.0118
Average decline rate for area	.0159

The State LM "T" No. 10 had an initial rate of 12000 MCF/Mo. Applying this to the equation:

$$N = \frac{Q_i - Q_a}{a}$$

N = Cummulative gas production
Q_i = Initial production rate MCF/Mo.
Q_a = Abandonment rate MCF/mo.
a = Monthly decline rate for area.

We calculate the following recovery:

$$N = \frac{(12{,}000 - 300)}{.0159}$$

$$N = .736 \text{ BCF}$$

The material balance method (P/Z vs cummulative production) was not applied to this well. The reason for not applying the material balance is that the original well on this acreage did not have aquedate pressure data.