

Eastern Petro Co / Santa Fe
NW/4-SE/4 Sec 29-1wp 20N-R 27E 255
Apache, County

M-J

COUNTY Apache Field Navajo Springs LEASE NO. Santa Fe F^E

WELL NAME Eastern #31 Santa Fe

LOCATION C N/2 SE/4 SEC 29 TWP 20N RANGE 27E FOOTAGE 1650 FSL 1320 FEL

ELEV 5680 GR _____ KB _____ SPUD DATE 10-14-63 STATUS HP*never produced TOTAL _____ COMP. DATE 10-25-63 DEPTH 1049'

5690 GR from USGS 7 1/2 quad per JNC
CONTRACTOR _____

| CASING SIZE | DEPTH | CEMENT | LINER SIZE & DEPTH | DRILLED BY ROTARY |
|--------------|-------------|--------------|--------------------|-------------------|
| <u>7"</u> | <u>90'</u> | <u>12 sx</u> | <u>NA</u> | <u>x</u> |
| <u>2 7/8</u> | <u>1049</u> | <u>30 sx</u> | | |

DRILLED BY CABLE TOOL _____
PRODUCTIVE RESERVOIR _____
INITIAL PRODUCTION shut-in helium well

| FORMATION TOPS | DEPTHS | SOURCE | | REMARKS |
|----------------------|------------|--------|----------|---------|
| | | L.L. | E.L. | |
| <u>Tertiary Sand</u> | <u>0</u> | | <u>X</u> | |
| <u>Chinle</u> | <u>210</u> | | | |
| <u>Shinarump</u> | <u>730</u> | | | |
| <u>Moenkopi</u> | <u>816</u> | | | |
| <u>Coconino</u> | <u>992</u> | | | |

| ELECTRIC LOGS | PERFORATED INTERVALS | PROD. INTERVALS | SAMPLE LOG |
|------------------------------------|---------------------------|-----------------|---------------------------------|
| <u>Induction & Cement Bond</u> | <u>1036-1037/993-1006</u> | <u>992-1018</u> | <u>SAMPLE DESCRP. Bu. Mines</u> |
| | | | <u>SAMPLE NO. 1251*</u> |
| | | | <u>CORE ANALYSIS x</u> |
| | | | <u>DSTs</u> |
| | | | <u>*Tucson 1683</u> |

| REMARKS | APP. TO PLUG |
|---------|------------------------|
| | <u>x</u> |
| | <u>PLUGGING REP. x</u> |
| | <u>COMP. REPORT x</u> |

WATER WELL ACCEPTED BY _____

BOND CO. U. S. Fidelity & Guaranty Co. BOND NO. 27716-13-3983-65

BOND AMT. \$ 25,000 CANCELLED 6-28-78 DATE _____ ORGANIZATION REPORT 9-17-63

FILING RECEIPT 9354 LOC. PLAT 10-18-63 WELL BOOK x PLAT BOOK x

API NO. _____ DATE ISSUED 10-18-63 DEDICATION All

PERMIT NUMBER 255

Incomplete

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well Work-Over Deepen Plug Back Same Reservoir Different Reservoir Oil Gas Dry

DESCRIPTION OF WELL AND LEASE

| | | | | | | | |
|---|------------------------------------|---|--|--------------------------------------|-------------------------------------|-----------------------------|--------------|
| Operator Eastern Petroleum Company | | Address Box 291, Carmi, Illinois | | | | | |
| Lease Name Eastern-Santa Fe Fee | | Well Number 31 | Field & Reservoir Navajo Springs Area | | | | |
| Location 1330' from E.L.; 1650' from S.L. of | | Sec.—TWP-Range or Block & Survey SE Sec. 29-20N-27E | | | | | |
| County Apache | Permit number 255 | Date Issued 10-18-63 | Previous permit number -- | Date Issued -- | | | |
| Date spudded 10-14-63 | Date total depth reached 1049 | Date completed, ready to produce 10-25-63 | Elevation (DF, RKB, RT or Gr.) 5680 G.I. | Elevation of casing hd. flange -- | feet | | |
| Total depth 1049 | P.B.T.D. | Single, dual or triple completion? Single | If this is a dual or triple completion, furnish separate report for each completion. | | | | |
| Producing interval (s) for this completion 992 - 1018 | | Rotary tools used (Interval) Entire | | Cable tools used (Interval) -- | | | |
| Was this well directionally drilled? No | Was directional survey made? No | Was copy of directional survey filed? -- | Date filed -- | | | | |
| Type of electrical or other logs run (check logs filed with the commission) Schlumberger induction & cement bond log | | | | Date filed | | | |
| CASING RECORD | | | | | | | |
| Casing (report all strings set in well—conductor, surface, intermediate, producing, etc.) | | | | | | | |
| Purpose | Size hole drilled | Size casing set | Weight (lb./ft.) | Depth set | Sacks cement | Amt. pulled | |
| Long string | 4 3/4 | 2 7/8" | | 1049 | 30 | -- | |
| Surface | | 7" | | 90 | 12 | -- | |
| TUBING RECORD | | | LINER RECORD | | | | |
| Size | Depth set | Packer set at | Size | Top | Bottom | Sacks cement | Screen (ft.) |
| in. | ft. | ft. | in. | ft. | ft. | | |
| PERFORATION RECORD | | | ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD | | | | |
| Number per ft. | Size & type | Depth Interval | Am't. & kind of material used | | Depth Interval | | |
| 4 | 3 1/8 | 1036-1037 | | | | | |
| if | crack jet | 992-1006 | | | | | |
| INITIAL PRODUCTION | | | | | | | |
| Date of first production | | Producing method (Indicate if flowing, gas lift or pumping—If pumping, show size & type of pump:) | | | | | |
| Date of test 10-23-63 | Hrs. tested 4 | Choke size 1" | Oil prod. during test bbls. | Gas prod. during test -146 MCF | Water prod. during test No bbls. | Oil gravity * API (Corr) | |
| Tubing pressure | Casing pressure | Cal'ated rate of Production per 24 hrs. | Oil bbls. | Gas MCF | Water bbls. | Gas-oil ratio | |
| Disposition of gas (state whether vented, used for fuel or sold): | | | | | | | |

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Secretary of the Eastern Petroleum Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

April 6, 1964
Date

J. N. Edwards
Signature

STATE OF ARIZONA OIL & GAS
CONSERVATION COMMISSION
Well Completion or Recompletion Report and Well Log
Form No. P-7
File two copies
Authorized by Order No. 4-8-64
Effective April 8, 1964

255

DETAIL OF FORMATIONS PENETRATED

| Formation | Top | Bottom | Description* |
|---------------|-----|--------|--------------|
| Tertiary Sand | 0 | 210 | |
| Chinle | 210 | 730 | |
| Shinarump | 730 | 816 | |
| Moenkoepi | 816 | 992 | |
| Coconino | 992 | 1049 | |



* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:

Attach drillers log or other acceptable log of well.

This Well Completion or Recompletion report and well log shall be filed with the State of Arizona Oil & Gas Conservation Commission not later than thirty days after project completion.

PLUGGING RECORD

| | | | |
|--|---|---|---|
| Operator Eastern Petroleum Company | | Address Box 291, Carmi, Illinois 62821 | |
| Federal, State, or Indian Lease Number, or lessor's name if fee lease. Santa Fe | | Well No. 31 | Field & Reservoir Navajo Springs Coconino Sand Unit |
| Location of Well 1330 FEL; 1650 FSL | | Sec-Twp-Rge or Block & Survey 29-20N-27E | County Apache |
| Application to drill this well was filed in name of Eastern Petroleum Company | Has this well ever produced oil or gas No | Character of well at completion (initial production): Oil (bbls/day) - Gas (MCF/day) 146 Dry? - | |
| Date plugged: 10/12/77 | Total depth 1049 | Amount well producing when plugged: Oil (bbls/day) - Gas (MCF/day) TSTM Water (bbls/day) - | |
| Name of each formation containing oil or gas. Indicate which formation open to well-bore at time of plugging | Fluid content of each formation | Depth interval of each formation | Size, kind & depth of plugs used. Indicate zones squeeze cemented, giving amount cement |
| Coconino | Water | 1036-1037 | Plug top to bottom |
| | | 992-1006 | with 7 bbls cement slurry |

CASING RECORD

| Size pipe | Put in well (ft.) | Pulled out (ft.) | Left in well (ft.) | Give depth and method of parting casing (shot, ripped, etc.) | Packers and shoes |
|---------------|-------------------|------------------|--------------------|--|-------------------|
| 7" | 90 | None | 90 | - | - |
| 2-7/8" | 1049 | None | 1049 | - | - |
| | | | | | |
| | | | | | |

Was well filled with mud-laden fluid, according to regulations? Indicate deepest formation containing fresh water.

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

| Name | Address | Direction from this well: |
|-------------------------|------------------------|---------------------------|
| Spurlock Ranches | Navajo, Arizona | Land Owner |
| | | |

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

Use reverse side for additional detail.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Secretary of the Eastern Petroleum Company (company) and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date 11/1/77 Signature J. H. Edwards

COPY

Permit No. 255

Form No. 10

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Plugging Record
File One Copy

APPLICATION TO ABANDON AND PLUG

FIELD Navajo Springs Coconino Sand Unit
OPERATOR Eastern Petroleum Company ADDRESS Box 291, Carmi, Illinois 62821
Federal, State, or Indian Lease Number Santa Fe WELL NO. 31
or Lessor's Name if Fee Lease
LOCATION 1330' FEL; 1650' FSL Section 29-20N-27E, Apache County
TYPE OF WELL Gas-Helium TOTAL DEPTH 1049
(Oil, Gas or Dry Hole)
ALLOWABLE (If Assigned)
LAST PRODUCTION TEST OIL -- (Bbls.) WATER -- (Bbls.)
GAS 146 (MCF) DATE OF TEST 10/23/63
PRODUCING HORIZON Coconino PRODUCING FROM 992 TO 1006

1. COMPLETE CASING RECORD.

7" @ 90' w/12 sks.
2 7/8" @ 1049' w/30 sks.

2. FULL DETAILS OF PROPOSED PLAN OF WORK

Plug top to bottom w/cement slurry

DATE COMMENCING OPERATIONS 10/12/77
NAME OF PERSON DOING WORK Petroleum Consultants ADDRESS Denver, Colorado

Signature
Secretary
Title
P. O. Box 291, Carmi, Illinois 62821
Address
Date November 1, 1977

Date Approved
STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Abandon and Plug
File Two Copies
Form No. 9

COPY

#255



255

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**OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION
TO TRANSPORT OIL OR GAS FROM LEASE**

| | | |
|--|--|------------------------------|
| Federal, State or Indian Lease Number, or lessor's name if fee lease Santa Fe fee & State | Field Navajo Springs | Reservoir Coconino |
| Survey or Sec-Twp-Rge Navajo Springs Unit | County Apache | State Arizona |
| Operator Eastern Petroleum Company | | |
| ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO: | | |
| Street Box 291 | City Carmi | State Illinois |
| Above named operator authorizes (name of transporter) Kerr-McGee Oil Industries, Inc. | | |
| Transporter's street address Kerr-McGee Building | City Oklahoma City | State Oklahoma |
| Field address Navajo, Arizona | | |
| Oil, condensate, gas well gas, casinghead gas | | |
| To transport: 100 | % of the gas from the Navajo Springs Unit | XXXXXXXXXX |
| OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS: | | |
| Name of gatherer | % transported | Product transported |
| | | |
| | | |
| | | |
| Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change. Certificate is to allow for the hookup of an additional well to the Kerr-McGee transmission line. Effective September 7, 1965. | | |

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

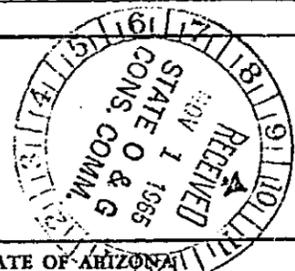
CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Secretary of the Eastern Petroleum Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date October 27, 1965 Signature J. Edwards

Date approved: Nov 1, 1965

By: John Bonmister

Permit No. Navajo Springs Unit



STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to
Transport Oil or Gas from Lease
File Two Copies

4 205

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator Eastern Petroleum Company
 2. Oil WELL GAS WELL OTHER (Specify) _____
 3. Well Name Santa Fe #31
 Location C N/2 SE/4
 Sec. 29 Twp. 20N Rgn. 27E County Apache Arizona.
 4. Federal, State or Indian Lease Number, or lessor's name if fee lease
Santa Fe Pacific Railroad Co. fee
 5. Field or Pool Name Navajo Springs Unit
 6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

| | | | |
|--|---|--|---|
| NOTICE OF INTENTION TO: | | SUBSEQUENT REPORT OF: | |
| TEST WATER SHUT-OFF <input type="checkbox"/> | PULL OR ALTER CASING <input type="checkbox"/> | WATER SHUT-OFF <input type="checkbox"/> | MONTHLY PROGRESS <input type="checkbox"/> |
| FRACTURE TREAT <input type="checkbox"/> | DIRECTIONAL DRILL <input type="checkbox"/> | FRACTURE TREATMENT <input type="checkbox"/> | REPAIRING WELL <input type="checkbox"/> |
| SHOOT OR ACIDIZE <input type="checkbox"/> | PERFORATE CASING <input type="checkbox"/> | SHOOTING OR ACIDIZING <input type="checkbox"/> | ALTERING CASING <input type="checkbox"/> |
| REPAIR WELL <input type="checkbox"/> | CHANGE PLANS <input type="checkbox"/> | (OTHER) <u>Shut-in</u> | ABANDONMENT <input type="checkbox"/> |
| (OTHER) _____ | | | <input checked="" type="checkbox"/> |

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

This well is part of Navajo Springs Unit and production from this well is not required to maintain monthly allowable take.

RECEIVED
 MAR 15 1974
 O & G CONSV. COMMISSION

8. I hereby certify that the foregoing is true and correct.
 Signed [Signature] Title Secretary Date March 12, 1974

STATE OF ARIZONA
 OIL & GAS CONSERVATION COMMISSION
 Sundry Notices and Reports On Wells
 File True Copies
 Form No. 25

Permit No. 255
 1 - State of Arizona ✓
 1 - File

NAVAJO SPRINGS AREA WELLS EASTERN PETROLEUM COMPANY - OPERATOR

| PERMIT NUMBER | WELL NAME | LOCATION | TOTAL DEPTH | FORMATION | INTERVAL PERFORATED | COMPLETION DATE | INITIAL POTENTIAL MCFD | 12-31-73 CUMULATIVE PROD. (MCF) | DATE OF LAST PROD. | PROD. CSG. DEPTH & SIZE | HOLE SIZE | NO. CEMENT SACKS USED | ESTIMATED TOP OF CEMENT | OPERATORS EST. OF CSG. RECOVERABLE | REMARKS |
|---------------|--------------------------|------------------|------------------|-----------|-----------------------------------|-----------------|----------------------------|---------------------------------|--------------------|-------------------------|-----------|-----------------------|----------------------------|------------------------------------|---------------------|
| ✓ 110 | Crest Santa Fe #2 | NE/SW 33-20N-27E | 1140 PBT 1105 | Coconino | 1062-72 | 6-24-60 | 12.75 | Never Prod. | | 2 7/8" @ 1107 | 4 3/4" | 50 | | | |
| ✓ 184 | Eastern Santa Fe #13 | NE/SW 31-20N-27E | 980 | Coconino | Open Hole | 6-25-62 | 6290 | 1,400,623 | | 4 1/2" @ 967 | 6 1/4" | 50 | | | Navajo Springs |
| ✓ 204 | Crest Santa Fe #7 | SE/NE 6-19N-27E | 1060 | Coconino | 1042-52 | 9-11-62 | 185 | Never Prod. | | 2 7/8" @ 1060 | 4 3/4" | 25 | | | |
| ✓ 206 | Eastern Santa Fe #14 | SE/NW 5-19N-27E | 1100 1361 | Coconino | 1026-56 | 10-16-62 | 300 | 47,594 | Oct. 1973 | 4 1/2" @ 1100 | 6 3/4" | 100 | | | East Navajo Springs |
| ✓ 234* | Ancon Santa Fe Fee #21 | SE/NW 31-20N-28E | PBT 1330 | Shinarump | 1173-94+ | 9-13-63 | 3.0 | 22,005 | Sept. 1972 | 2 7/8" @ 1330 | 4 3/4" | 5 | 730 | 1300 | Shinarump Pool |
| ✓ 236 | Santa Fe Fee #17 | SW/NW 4-19N-27E | 1057 | Coconino | 1037-57 | 6-17-63 | 250 | 56,948 | Dec. 1973 | 4 1/2" @ 1057 | 6 1/4" | 65 | | | |
| ✓ 235 | Kerr-McGee Barfoot #1 | NE/SW 32-20N-27E | 1057 | Coconino | 986-1005 | 7-30-63 | 1160 | 225,555 | | 4 1/2" @ 1076 | 6 3/4" | 100 | | | Navajo Springs |
| ✓ 255 | Santa Fe Fee #31 | NW/SE 29-20N-27E | 1049 | Coconino | 992-1006 | 10-25-63 | 590 | Never Prod. | | 2 7/8" @ 1049 | 4 3/4" | 50 | | | Navajo Springs |
| ✓ 255 | Santa Fe Fee #32 | NE/SW 28-20N-27E | 1133 | Coconino | 1096-1100 | 11-24-63 | 95 | Never Prod. | | 2 7/8" @ 1123 | 6 1/4" | 25 | | | Navajo Springs |
| ✓ 255 | Santa Fe Fee #35 | NE/SW 27-20N-27E | 1072 | Coconino | Open Hole | 5-11-64 | 1570 | 27,411 | Oct. 1972 | 4 1/2" @ 1067 | 6 1/4" | 65 | | | Navajo Springs |
| ✓ 255 | Reece #2 Fee | SW/NE 1-19N-26E | 1067 | Coconino | 1012-16 | 3-0-66 | 250-260 Est. | Never Prod. | | 2 7/8" @ 1053 | 4 3/4" | 100 | | | Navajo Springs |
| ✓ 271 | Crest Santa Fe #1 | SE/SE 25-20N-27E | 1225 PBT 1140 | Shinarump | 1046-1110 | 11-20-65 | 51 | 34,421 | Dec. 1972 | 4 1/2" @ 1171 | 6 1/4" | 70 | | | Navajo Springs |
| ✓ 336* | Santa Fe Fee #24 | SE/NW 24-20N-27E | 1340 PBT 1173 | Shinarump | 1145-73 | 9-30-71 | Negligible | Never Prod. | | 2 7/8" @ 1303 | 4 3/4" | 200 | Enough cement to circulate | 1000 | Navajo Springs |
| ✓ 537* | Santa Fe Fee #21-1A | NW/NW 31-20N-28E | 1232 | Coconino | Open Hole | 6-15-70 | 470 | 3,229 | Oct. 1972 | 4 1/2" @ 1215 | 6 1/4" | 100 | 65 | 1075 | Navajo Springs |
| ✓ 560* | Kiva Santa Fe Fee #1 | NE/SW 13-20N-28E | 1230 PBT 1150 | Shinarump | 1040-56 | 12-09-71 | No Gas Reported | Never Prod. | | 4 1/2" @ 1172 | 6 1/4" | 100 | 24 | 1075 | Navajo Springs |
| ✓ 565* | Santa Fe #6X-1 | SE/NW 25-20N-28E | 1251 PBT 1174 | Shinarump | 1126-60 | 1-06-72 | No Gas Reported | Never Prod. | | 4 1/2" @ 1265 | 6 1/4" | 100 | 700 | 1175 | Navajo Springs |
| ✓ 565* | Santa Fe Fee Sanders #2 | NE/SW 15-21N-28E | 516 | Coconino | 406-420 | 5-20-72 | TSM | Never Prod. | | 4 1/2" @ 516 | 6 1/4" | 70 | 115 | 1075 | Navajo Springs |
| ✓ 575* | Szar State #1 | NW/SW 36-20N-27E | 1215 | Shinarump | 1154-62 | 4-25-72 | Well on Vacuum During Test | Never Prod. | | 4 1/2" @ 1215 | 6 1/4" | 100 | 65 | 1075 | Navajo Springs |
| ✓ 584* | Santa Fe Fee Dreck #1 | SE/SW 25-20N-27E | 1266 | Shinarump | | 6-21-72 | Not Tested | Never Prod. | | 4 1/2" @ 285 | 6 1/4" | 65 | Circulated Surface | None | Navajo Springs |
| ✓ 592* | Indian Allotted Merde #1 | SW/SW 30-20N-28E | 1200 | Shinarump | 1062-93 | 5-17-72 | 156 | 991 | Oct. 1972 | 4 1/2" @ 1200 | 6 1/4" | 100 | Bottom 726" | 1075 | Navajo Springs |
| ✓ 596* | Indian Allotted Merde #2 | SW/SE 30-20N-28E | 1303 PBT 1215 | Shinarump | Completion Report Never Submitted | | | Never Prod. | | 2 7/8" @ 1167 | 4 3/4" | No Report | | 1175 | Navajo Springs |
| ✓ 599* | Kiva Santa Fe Fee #2 | NE/SW 24-20N-28E | 1230 | Coconino | 1155-1215 | 11-12-72 | TSM | Never Prod. | | 4 1/2" @ 1215 | 6 1/4" | 60 | 57 | 1075 | Navajo Springs |
| ✓ 600* | Santa Fe Fee Beacon #1 | NW/SE 29-20N-29E | 1265 | Coconino | No Perfs. Reported | 3-25-72 | No Test Reported | Never Prod. | | 4 1/2" @ 1265 | 6 1/4" | 55 | 515 | 1175 | Navajo Springs |
| ✓ 601* | Santa Fe Fee #1-11 | SE/SE 11-20N-28E | 1075 | Coconino | Open Hole | 11-10-72 | TSM | Never Prod. | | 4 1/2" @ 1055 | 6 1/4" | 65 | 710 | 1075 | Navajo Springs |

* Applications to plug have been approved.

Cement bond log indicates bottom of cement at 726'

From Application to Plug

NAVAJO SPRINGS AREA WELLS EASTERN PETROLEUM COMPANY - OPERATOR

| TOTAL DEPTH | FORMATION | INTERVAL PERFORATED | COMPLETION DATE | INITIAL POTENTIAL MCFD | 12-31-73 CUMULATIVE PROD. (MCF) | DATE OF LAST PROD. | PROD. CSG. DEPTH & SIZE | HOLE SIZE | NO. CEMENT SACKS USED | ESTIMATED TOP OF CEMENT | OPERATORS EST. OF CSG. RECOVERABLE | REMARKS |
|-------------|-----------|---------------------|-----------------------------------|----------------------------|---------------------------------|--------------------|-------------------------|-----------|-----------------------|----------------------------|------------------------------------|---|
| 1140 | PBTD 1105 | Coconino | 1062-72 | 6-24-60 | 12.75 | Never Prod. | 2 7/8" @ 1107 | 4 3/4" | 50 | | | |
| 980 | Coconino | Open Hole | 6-25-62 | 6290 | 1,400,623 | | 4 1/2" @ 967 | 6 1/4" | 50 | | | Navajo Springs Unit |
| 1060 | Coconino | 1042-52 | 9-11-62 | 185 | Never Prod. | | 2 7/8" @ 1060 | 4 3/4" | 28 | | | |
| 1100 | Coconino | 1026-56 | 10-16-62 | 300 | 47,594 | Oct. 1973 | 4 1/2" @ 1100 | 6 3/4" | 100 | | | |
| 1361 | PBTD 1330 | Shinarump | 1173-94+ | 9-13-63 | 3.0 | Sept. 1972 | 2 7/8" @ 1330 | 4 3/4" | 85 | 730 | 1300 | East Navajo Springs Shinarump Pool |
| 1057 | Coconino | 1037-57 | 6-17-63 | 250 | 56,948 | Dec. 1973 | 4 1/2" @ 1057 | 6 1/4" | 65 | | | |
| 1057 | Coconino | 996-1008 | 7-30-63 | 1160 | 225,555 | | 4 1/2" @ 1076 | 6 3/4" | 140 | | | Navajo Springs Unit |
| 1049 | Coconino | 992-1006 | 10-25-63 | 590 | Never Prod. | | 2 7/8" @ 1049 | 4 3/4" | 90 | | | (Remedial work on this well between 10/25/63 & test date) (work not reported.) |
| 1133 | Coconino | 1090-1100 | 11-24-63 | 95 | Never Prod. | | 2 7/8" @ 1133 | 6 1/4" | 75 | | | |
| 1072 | Coconino | Open Hole | 5-11-64 | 1270 | 27,431 | Oct. 1973 | 4 1/2" @ 1062 | 6 1/4" | 65 | | | |
| 1067 | Coconino | 1012-16 | 3-0-66 | 250-200 Est. | Never Prod. | | 2 7/8" @ 1053 | 4 3/4" | 160 | | | |
| 1225 | PBTD 1140 | Shinarump | 1046-1110 | 11-20-65 | 51 | Dec. 1973 | 4 1/2" @ 1171 | 6 1/4" | 70 | | | Originally completed in Lower East Navajo Springs Shinarump Pool |
| 1340 | PBTD 1173 | Shinarump | 1145-73 | 9-30-71 | Negligible | Never Prod. | 2 7/8" @ 1303 | 4 3/4" | 220 | Enough cement to circulate | 1290 | |
| 1232 | Coconino | Open Hole | 9-15-70 | 470 | 5,299 | Oct. 1972 | 4 1/2" @ 1215 | 6 1/4" | 100 | 65 | 1075 | |
| 1230 | PBTD 1150 | Shinarump | 1046-56 | 12-09-71 | No Gas Reported | Never Prod. | 4 1/2" @ 1172 | 6 1/4" | 100 | 65 | 1075 | |
| 1251 | PBTD 1174 | Shinarump | 1126-60 | 1-06-72 | No Gas Reported | Never Prod. | 4 1/2" @ 1265 | 6 1/4" | 100 | 720 | 1125 | |
| 516 | Coconino | 406-420 | 4-20-72 | TSM | Never Prod. | | 4 1/2" @ 516 | 6 1/4" | 75 | 116 | 410 | |
| 1215 | Shinarump | 1154-62 | 4-25-72 | Well On Vacuum During Test | Never Prod. | | 4 1/2" @ 1215 | 6 1/4" | 100 | 65 | 1075 | East Navajo Springs Shinarump Pool |
| 1266 | Shinarump | | 6-21-72 | Not Tested | Never Prod. | | 5" @ 1266 | 5 3/4" | 65 | Circulated Surface | None | This well erroneously reported plugged. |
| 1200 | Shinarump | 1062-93 | 6-17-72 | 156 | 991 | Oct. 1972 | 4 1/2" @ 1200 | 6 1/4" | 100 | Bottom 726' | 1060 | Hole in case of 726' |
| 13-3 | PBTD 1215 | Shinarump | Completion Report Never Submitted | | Never Prod. | | 2 7/8" @ 1197*** | 4 3/4" | No Report | | 1150 | This well flowing water between 10/25/63 & 1/5/64. |
| 1250 | Coconino | 1155-1218 | 11-12-72 | TSM | Never Prod. | | 4 1/2" @ 1215 | 6 1/4" | 60 | 577 | 1072 | |
| 1265 | Coconino | No Perfs. Reported | 2-23-72 | No Test Reported | Never Prod. | | 4 1/2" @ 1265 | 6 1/4" | 55 | 815 | 1125 | |
| 1075 | Coconino | Open Hole | 11-10-72 | TSM | Never Prod. | | 4 1/2" @ 1055 | 6 1/4" | 65 | 710 | 1005 | |



10/4/73
Pinal County

CO/Santa Fe 27E

ent at 726'

ENGINEERING REPORT

of

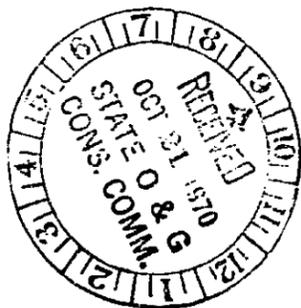
Well Tests and Gas Flow Calculations
Shut-in Gas Wells, Navajo Springs Area
Apache County, Arizona

For

Western Helium Corporation

By

John W. Heiler



255

JOHN M. HELLER

REGISTERED ENGINEER

P. O. Box 1507
1727 Forest Ave
DURANGO, COLORADO
81301

September 22, 1970

Phone 247-3846
AREA CODE (303)

Western Helium Corporation
P. O. Box 1358
Scottsdale, Arizona 85252

Gentlemen:

Submitted herewith is an engineering report of well tests and flow rate calculations on shut-in gas wells in the Navajo Springs Unit area.

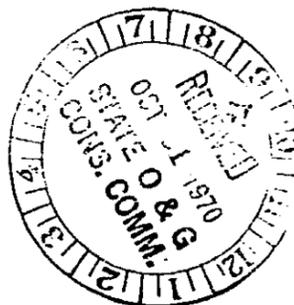
This report is made at the request of Mr. R. E. Lauth. I wish to express my appreciation to him and also Mr. Henry Fullop of Eastern Petroleum Corporation for their cooperation in obtaining the field information and the accommodations they furnished while obtaining the field information.

I believe the data shown herein is sufficient for your needs. Do not hesitate to contact me if there are any questions about this report.

Very truly yours,

John M. Heller
John M. Heller

Copies to:
Mr. Henry Fullop
Mr. R. E. Lauth



PURPOSE

To determine the productive capacity of shut-in gas wells in the Navajo Springs Unit and surrounding area, Apache County, Arizona.

To project flow rates at field gathering line pressures of 10, 20, 30, and 40 psig.

SUMMARY

Five wells, Santa Fe Nos. 14, 15, and 21-2; Tease No. 2; and Crest No. 7, were tested. These tests and calculated data indicate the wells are capable of producing at this time. A test was attempted on Santa Fe No. 25 but results are not valid because of fluid entry into the well bore during the flow period. This well does have the capacity to produce some gas at limited rates before remedial work is necessary.

Calculated delivery rates at various back pressures are given below for individual wells:

| Lease and Well Number | Producing Zone | Delivery Rates - MCF/D | | | |
|-----------------------|----------------|------------------------|----------|----------|----------|
| | | 10 psig. | 20 psig. | 30 psig. | 40 psig. |
| Santa Fe No. 14 | Tomlinson | 335 | 417 | 487 | 537 |
| Santa Fe No. 15 | " | 380 | 460 | 530 | 580 |
| Santa Fe No. 21-2 | Swainson | 521 | 610 | 690 | 750 |
| Tease No. 2 | Tomlinson | 730 | 880 | 1000 | 1100 |
| Crest No. 7 | " | 170 | 170 | 180 | 180 |
| Total Volume - MCF | | 2776 | 3337 | 3987 | 4367 |

Santa Fe No. 25 could possibly produce at a rate of 100 MCF/D without such difficulty.

FILE

- 2 -

PROGRAM and PROCEDURE

Information and data required to make the flow rate projections were obtained by individual well tests. Gas flow measurements were taken through a 2" Critical Flow Prover and a 2" Orifice Well Tester at critical flow. Pressures were obtained by dead weight and test gauges to the nearest one pound increment. Assumptions were made on the gravity of the gas and the barometric pressure.

Calculations were made to a base pressure of 14.65 psia. @ 60° F. The back pressure curves are drawn on values of P_c and P_w , surface shut-in and working pressures, corrected for flow friction where it was significant.

Two four point tests were satisfactorily completed and the slope of the back pressure curve on these wells was applied to the other wells where one point tests were taken.

The projected delivery rates shown in this report were obtained by analyzing the back pressure curves, calculating the flow friction and adjusting the flow volume.

DISCUSSION

Santa Fe Wells No. 14, 17, and 21-2; Reese No. 2; and Crest No. 7, were favorably tested. Reese No. 2 did show a slight amount of moisture at the end of the test period but does not appear to effect the delivery potential at this time. Santa Fe No. 35 test is not considered valid because of the fluid entry into the well bore during the test period. This well can be produced to some extent and could show a sizable cumulative production before it becomes necessary to recondition. It is suggested that this well be produced at a rate of about 100 MCF per day initially and checked closely for the fluid build up in the well bore, unloading by blowing full open to the atmosphere for only short periods of time when necessary.

Other wells in the Navajo Springs Unit were checked but flow tests were not taken. They would not test in a satisfactory manner. Details of these wells are shown on page number 14 of this report.

The total GOR of the five wells considered productive at this time is 3,171 MCFD. It would be prudent to start initial deliveries at approximately 25% of the GOR or about 794 MCFD. This does not include the 100 MCFD that may be produced from Santa Fe No. 35. That individual wells be checked closely for performance and the producing rates adjusted accordingly.

25

Wells Not Tested

Santa Fe No. 31 Sec. 22-20N-27E.

9/12/70 Shut-in well head pressure - 92 psig. Started flow test and well started dying. Dropped soap stick and shut-in overnight.

9/13/70 Shut-in 17 1/2 hrs. Well head pressure - 90 psig. Opened well to blow. Fluid in 5 minutes. Flew well for 20 minutes. Making water at end of blow period. Too wet to test. Well head pressure 1 1/2 hours after blowing was 60 psig.

Santa Fe No. 32 Sec. 23-20N-27E.

9/12/70 Shut-in well head pressure - 27 psig. Opened to blow. Lead. Dropped soap stick and shut-in overnight.

9/13/70 Shut-in well head pressure after 13 hours - TSTM. Opened well - lead.

Santa Fe No. 3 Sec. 33-20N-27E.

9/13/70 Shut-in well head pressure - 12 psig. Opened to flow. Very light blow - Lead.

Santa Fe No. 13 Sec. 31-20N-27E.

Producing into Kerr-McGee System. Well flowing with a well head pressure of 79 psig. Flow controlled by a pinched valve. Crifice Meter - American I-10-S chart; 50" X 250 psi. range; 4" X 2.50" plate; readings; L-3.9; P-3.0; T-2.4. Test gauge reads 22.5 psig. Flow had been fluctuating. Check readings indicate well was at that time flowing at approximately 134 MCF. There was no indication of any water being produced at this rate.

Barfoot State No. 1 Sec. 32-20N-27E.

Producing into Kerr-McGee System. Well flowing with a well head pressure of 24 psig. Not restricted. Crifice Meter - American I-10-S chart; 50" X 250 psi. range; 4" X 0.50" plate; readings; L-2.5 to 4.0; P-3.7; T-7.2. Test gauge reads 24 psig. Flow had been fluctuating. Check readings indicate well was at that time flowing at a rate between 12.5 and 20 MCF. The differential pen was sweeping in the range of 2.1 to 4.0 on the chart. This may have been an indication of some fluid being present in the well bore.

205

FLOW RATES ON WELLS
IN NAVAJO SPRINGS FIELD, APACHE COUNTY, ARIZONA

RATES WITH PRESSURE CLOSE TO 100#

| SIP | WELL NAME | ORIFICE SIZE | WELL TUBING | 2" PROVER PRESS - PSIG | HOURS TESTED | VOLUME MCFPD |
|---------------|------------------------|--------------|---|------------------------|--------------|------------------------|
| 106.7 | Santa Fe 35 | 7/16 | | 96.0 | 15 1/2 | 365 |
| 106.7 | " " 31 | 3/16 | | 95.9 | 17 1/2 | 68 |
| 106.6 | " " 32 | 1/8* | | 105.7 | 17 1/2 | 39 |
| 133.8 | " " 21 | 1/16 | | 59.5 | 8 1/2 | 4 |
| 105.6 | " " 13 | | | 99.8 | 15 | 980 |
| 105.4 | " " 7 | 1/8* | | 99.9 | 15 1/4 | 4 |
| 105.4 | " " 14 | 3/8 | | 97.4 | 15 1/2 | 270 |
| 105.5 | " " 17 | 3/16 | | 98.5 | 16 3/4 | 70 |
| 201.5 | " " 8 | | | 91 - 93 | 12 - 13 1/2 | 7 bbls. salt water/hr. |
| 105.5 | " " 2 | | Well pulled down 1/4" small vo. water & gas, slightly salty | | | 1800 MCFPD |
| | * Orifice well tester. | | | | | |
| After Testing | | | MAXIMUM RATE OF FLOW | | | |
| 106.6 | Santa Fe 35 | 3/4 | | 80.1 | 1 1/2 | 668 |
| 106.6 | " " 31 | 1/2 | | 76 | 1 1/2 | 394 |
| 106.5 | " " 32 | 1/2 | Well tight pressure kept falling | | | 39 |
| 133.9 | " " 21 | | Same as No. 21 above | | | |
| 105.6 | " " 13 | | | 94.1 | 4 | 1900 |
| 105.4 | " " 7 | 1/2 | | 31.9 | 2 1/4 | 28 |
| 105.4 | " " 14 | 7/8 | | 71.6 | 3 1/4 | 700 |
| 105.5 | " " 17 | 7/8 | | 19.7 | 2 | 435 |
| Not Taken | " " 8 | | | 9 | 18 1/4 | 448 |
| Not Taken | " " 2 | | Same as No. 2 above | | | |

Ph. B. Eymann
August 13, 1964

5

| DOMESTIC SERVICE | |
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WESTERN UNION TELEGRAM

1206 (4-55)

W. P. MARSHALL, PRESIDENT

| INTERNATIONAL SERVICE | |
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| NO. WDS.-CL. OF SVC. | PD. OR COLL. | CASH NO. | CHARGE TO THE ACCOUNT OF | TIME FILED |
|----------------------|--------------|----------|--|------------|
| | | | From: Otto Barton, Superintendent, Oil and Gas Production, Pan Handle Division, Kerr-McGee Oil Industries, Inc., Sunray, Texas | |

Send the following message, subject to the terms on back hereof, which are hereby agreed to

May 26, 1964
4:30 p.m.

Mr. John Bannister
Oil & Gas Conservation Commission
1624 West Adams
Phoenix, Arizona

Outlined below please find analyses of gas from samples taken from Eastern Petroleum Company Wells No. 31, Section 29; No. 32, Section 28; No. 35, Section 27, all in T20N - R27E, Apache County, Arizona:

Well No. 31: Argon .79, CO2 .89, Helium 8.32, Hydrogen 90.00, Total percentage 100.00. Specific gravity .9065.

Well No. 32: Argon .79, CO2 .88, Helium 8.34, Nitrogen 89.99, Total percentage 100.00, Specific gravity .9063.

Well No. 35: Argon .68, CO2 .90, Helium 8.34, Nitrogen 90.08, Total percentage 100.00, Specific gravity .9059.

This information furnished at request of Henry Fullop, President, Eastern Petroleum Company.

2556

SILAS C. BROWN & ASSOCIATES
GEOLOGICAL CONSULTANTS
P. O. BOX 1368
SCOTTSDALE, ARIZONA

May 26, 1964

Arizona Oil and Gas Conservation
Commission
1624 West Adams
Phoenix, Arizona 85007

Atten: Mr. John Bannister
Executive Secretary

Dear Sir:

On May 11, 1964 I was retained by Mr. John Bannister to represent the Commission and witness potential tests on the following helium wells owned by the Eastern Petroleum Company in Apache County, Arizona:

1. No. 31 Santa Fe, NW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 29-T20N-R27E.
2. No. 32 Santa Fe, NE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 28-T20N-R27E.
3. No. 35 Santa Fe, NE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 27-T20N-R27E.

The instructions were to secure a basic 3-point test or more points if necessary to establish an accurate potential on the wells listed above.

I met with Mr. Otto Barten of Kerr-McGee Oil Industries, Inc. and Mr. Henry Fallop of Eastern Petroleum Company at 7:30 A.M. on May 12, 1964 in Navajo, Arizona. We were joined by Mr. Richard Otto of Kerr-McGee and potential tests were made on Wells No. 31 and 35. Well No. 32 had been given a mud-acid treatment during the morning of May 12th. An attempt was made to potential the well on the morning of May 13th, however, acid water was still present and pressures would not stabilize. The well was blown open flow for 1 hour and 40 minutes without appreciable decrease in the amount of acid water. The well was blown open flow for the balance of the day and still made acid water but no salty formation water was observed. To conserve gas the well was then shut in to be tested in 10 to 14 days.

Mr. Otto Barten reported by phone that an attempt was made to potential the well on May 25, 1964 but the pressures would not stabilize. This test was attempted by Mr. Richard Otto of Kerr-McGee and Mr. Tony Sneider of Eastern Petroleum.

A 3-point test was made on Well No. 35 and a 4-point test was made on Well No. 31. A Pitot Tube test was made on

Well No. 32 since the pressure would not stabilize.

Based upon field data obtained, it is my opinion that the wells have the following potentials - absolute open flow:

1. Well No. 31 - 590 MCFG/D - Used 2" Critical Flow Prover
2. Well No. 35 - 1,570 MCFG/D - Used 2" Critical Flow Prover
3. Well No. 32 - \pm 580 MCFG/D - Used Pitot Tube

Included with this letter report are two copies of the Open Flow Potential Test Report for Wells No. 31 and 35 as calculated by Mr. Charles D. Campbell of Kerr-McGee Oil Industries, Inc. Also included are field data sheets showing data as observed in the field during the tests.

Respectfully submitted,

Silas C. Brown
Silas C. Brown
Registered Geologist



GA WELL OPEN FLOW POTENTIAL TEST REPORT

4-POINT TEST

Test Initial Annual Special

Field: Navajo Springs Reservoir: Coconino Sand Test Date: May 12 1964

Operator: Eastern Petroleum Company Lease: Santa Fe Well No.: 31

County: Apache Location: C-SE 1/4 of Sec 29, Twp 20N, Rge 27E Completion Date: Total Depth: 1045 T/ Pay: 992 Producing Interval: 14

Producing TBG. Thru CSG. Reservoir Temperature *F Wellhead Temperature *F CSG. Size Wt./Ft. I.D. Set @

XX 2-7/8 6.50 2.441 1045

TBG. Size Wt./Ft. O.D. I.D. Set @ Gas Gravity (Separator) Avg. Prod. Length (L) GL Gas-Liquid Hydrocarbon Ratio MCF per Bbl. Gravity of Liquid (Apl)

0.900 999 899

Pipeline Connection: None at time of test Type Taps: Multiple Completion (Dual or Triple): Helium bearing gas Type production from each zone:

OBSERVED DATA Flow Data $F_c = 5.812 (1 - e^{-u}) = 0.0605$

Barometric Pressure: 11.8 psia

| No. | Time of Flow | (Prover) Size | Orifice Size | Press. psig | Diff. h w | Tubing Press. psig | Casing Press. psig | Flowing Temp. *F |
|------|--------------|---------------|--------------|-------------|-----------|--------------------|--------------------|------------------|
| * SI | | | | | | | 107.1 | |
| * 1 | 20 | 2 | 0.1250 | 103.5 | | | 103.5 | 82 |
| * 2 | 20 | 2 | 0.2500 | 94.9 | | | 94.9 | 75 |
| * 3 | 20 | 2 | 0.3125 | 88.5 | | | 88.5 | 72 |
| * 4 | 20 | 2 | 0.3750 | 79.4 | | | 79.4 | 70 |

FLOW CALCULATIONS

| No. | Coefficient (24 Hr.) | $\sqrt{\frac{h}{w} \frac{p}{m}}$ | Pressure psia | Flow Temp. Factor $\frac{F}{t}$ | Gravity Factor $\frac{F}{g}$ | Compress. Factor $\frac{F}{pv}$ | Rate of Flow Q MCF/D |
|-----|----------------------|----------------------------------|---------------|---------------------------------|------------------------------|---------------------------------|----------------------|
| 1. | 0.3418 | | 115.3 | 0.9795 | 0.8165 | 1.0000 | 32 |
| 2. | 1.4030 | | 106.7 | 0.9859 | 0.8165 | 1.0000 | 121 |
| 3. | 2.1577 | | 100.3 | 0.9887 | 0.8165 | 1.0000 | 175 |
| 4. | 3.0697 | | 91.2 | 0.9905 | 0.8165 | 1.0000 | 226 |

PRESSURE CALCULATIONS $P_c = 14.14$

| | $\frac{P}{P_t}$ (psia) | P_t | $F_c Q$ | $(F_c Q)^2$ | $(F_c Q)^2 \times 1 - e^{-u}$ | P_w | $\frac{P_c - P_w}{P_c}$ | Cal. $\frac{P_w}{P_c}$ | $\frac{P_w}{P_c}$ |
|----|------------------------|-------|---------|-------------|-------------------------------|-------|-------------------------|------------------------|-------------------|
| 1. | 115.3 | 13.29 | 0.186 | 0.035 | 0.002 | 13.29 | 0.85 | 115.3 | 0.97 |
| 2. | 106.7 | 11.39 | 0.703 | 0.494 | 0.030 | 11.42 | 2.72 | 106.9 | 0.90 |
| 3. | 100.3 | 10.06 | 1.017 | 1.034 | 0.063 | 10.12 | 4.02 | 100.6 | 0.85 |
| 4. | 91.2 | 8.32 | 1.314 | 1.727 | 0.104 | 8.42 | 5.72 | 91.8 | 0.77 |

Absolute Potential: 590 MCF/D $1.011 (\theta = 44.7^\circ)$

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the _____ of the _____ (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Witness to Test Otto C. Barton Eastern Petroleum Company
 Kerr-McGee Oil Industries, Inc.
 By Henry Fuller Signature

Witness to Test Henry Fuller

Test Calculated by Charles D. Campbell
 Engineer-Kerr-McGee Oil Ind., Inc.

Witness to test Arthur C. Brown
 Arizona Oil & Gas Cons. Comm.

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION
 Gas Well Open Flow Potential Test Report (4-Point Test)
 Form No. G-1 File two copies 355
 Effective _____ 19____

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W. P. MARSHALL, PRESIDENT

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JOHN BAINNISTER

410 *420* *423*
SHEET NO.

ARIZONA OIL & GAS COMMISSION SUITE 202 1624 WEST ADAMS ST
PHOENIX ARIZ
OUTLINED BELOW PLEASE FIND ANALYSIS OF GAS FROM SAMPLES TAKEN
FROM EASTERN PETROLEUM COMPANY WELLS #31 SEC 29, #32 SEC 28,
#35 SEC 27 ALL IN T20N R27E APACHE COUNTY ARIZONA WELL #31-
ARGON .79 CO2 .89 HELIUM 8.32 NITROGEN 90.00 TOTAL PERCENTAGE
100.00 SPECIFIC GRAVITY .9065 WELL #32 ARGON .79 CO2 .88 HELIUM
8.34 NITROGEN 89.99 TOTAL PERCENTAGE 100.00 SPECIFIC GRAVITY
.9063 WELL #35 ARGON .68 CO2 .90 HELIUM 8.34 NITROGEN 90.08
TOTAL PERCENTAGE 100.00 SPECIFIC GRAVITY .9059 THIS INFORMATION
FURNISHED AT REQUEST OF HENRY FULLOP, PRESIDENT EASTERN PETROLEUM
COMPANY
KERR MCGEE OIL INDUSTRIES INC, OTTO BARTON SUPT OIL & GAS

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W. P. MARSHALL, PRESIDENT

SF-1201 (4-60)

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The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

DAMASIS SHEET NO. ✓

423

PRODUCTION PANHANDLE DIVISION SUNRAY TEXAS

#31 29 #32 28 #35 27 T2ON R27E #31 .79 C02 .89 8.32 90.00 100.00
.9065 #32 .79 C02 .88 8.34 89.99 100.00 .9063 #35 .68 C02 .90
8.34 90.08 100.00 .9059
(06).

66721
420



271-5161

Op MKC
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SILAS C. BROWN & ASSOCIATES
GEOLOGICAL CONSULTANTS
P. O. BOX 1266
SCOTTSDALE, ARIZONA

May 12, 1964

Navajo, Arizona

EASTERN PETROLEUM CO. #31 SANTA FE

NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 29-T20N-R27E., Apache Co., Arizona

Elev. - 5680' Gr. T.D. - 1050 logger.
Top Coconino - 993' Top Water - 1013' Net Pay - 20'
SIP - 107.1# 2 7/8" tubing set @ 1049'

Point 1. $\frac{1}{4}$ " orifice
After 5 min. - 94.4#, Temp. - 75°F.
" 10 " - 94.6# " - 75°F.
" 15 " - 94.8# " - 75°F.
" 20 " - 94.9#, Temp. - 75°F.
" 25 " - 94.9# " - 75°F.
" 30 " - 94.9# " - 75°F.

Point 2. 5/16" orifice
After 5 min. - 88.3#, Temp. - 74°F.
" 10 " - 88.4# " - 73°F.
" 15 " - 88.5# " - 72°F.
" 20 " - 88.5# " - 72°F.

Point 3. 3/8" orifice
After 5 min. - 79.3#, Temp. - 72°F.
" 10 " - 79.4# " - 72°F.
" 15 " - 79.4# " - 70°F.
" 20 " - 79.4# " - 70°F.

Point 4. 1/8" orifice
After 5 min. - 103.6#, Temp. - 78°F.
" 12 " - 103.6# " - 80°F.
" 18 " - 103.5# " - 82°F.
" 20 " - 103.5# " - 82°F.

NOTE: Used a 2" Critical Flow Prover 50 inches long.
Used a Dead Weight Gauge.

WITNESSES: Otto Barton - Kerr McGee Oil Industries, Inc.
Richard Otto - " " " " "
Henry Fullop - Eastern Petroleum Company.
Silas Brown - Arizona Oil & Gas Conservation Commission.

Silas C. Brown
Silas C. Brown

Test Procedure

Eastern Petroleum Company, Santa Fe well No. 31, Sec 29, 20N, 27E, Apache County, Arizona. Elevation 5680 feet. Top of Coconino, 992 feet. Water, 1036. Total depth, 1045 feet ground level. 2-7/8 EUE tubing set for casing. Perforated 992 to 1006, 4 holes per foot. 7" surface casing flowing fresh water with gas bubbles. Test started May 11, 1964 at 1:00 PM, through 2" critical flow prover. Witnesses to test: Mr. Henry Fullop and Tony Sneider of Eastern Petroleum Company, Otto Barton and Richard Otto for Kern-O-Gas Oil Industries, Inc., and Mr. S.C. Brown, Consultant for Arizona Oil and Gas Commission. Shut in pressure, 107.1 psig.

Point #1 - 1/8 orifices:

5 Minutes - Prover Pressure, 103.6 psig - Temperature 78 degrees
12 Minutes - Prover Pressure, 103.6 psig - Temperature 80 degrees
18 Minutes - Prover Pressure, 103.5 psig - Temperature 82 degrees
20 Minutes - Prover Pressure, 103.5 psig - Temperature 82 degrees

This point was taken last as other three points had resulted in too large a percentage of pressure pull off.

Point #2 - 1/4" orifices:

5 Minutes - Prover Pressure, 94.4 psig - Temperature 75 degrees
10 Minutes - Prover Pressure, 94.6 psig - Temperature 75 degrees
15 Minutes - Prover Pressure, 94.8 psig - Temperature 75 degrees
20 Minutes - Prover Pressure, 94.9 psig - Temperature 75 degrees
25 Minutes - Prover Pressure, 94.9 psig - Temperature 75 degrees
30 Minutes - Prover Pressure, 94.9 psig - Temperature 75 degrees

Additional time taken to determine stabilization as well started making light spray water after 3 minutes that continued for 8 more minutes before clearing up.

Point #3 - 5/16" orifices:

5 Minutes - Prover Pressure, 88.3 psig - Temperature 74 degrees
10 Minutes - Prover Pressure, 88.4 psig - Temperature 73 degrees
15 Minutes - Prover Pressure, 88.5 psig - Temperature 72 degrees
20 Minutes - Prover Pressure, 88.5 psig - Temperature 72 degrees

Point #4 - 3/8" orifices:

5 Minutes - Prover Pressure, 79.3 psig - Temperature 72 degrees
10 Minutes - Prover Pressure, 79.4 psig - Temperature 72 degrees
15 Minutes - Prover Pressure, 79.4 psig - Temperature 70 degrees
20 Minutes - Prover Pressure, 79.4 psig - Temperature 70 degrees

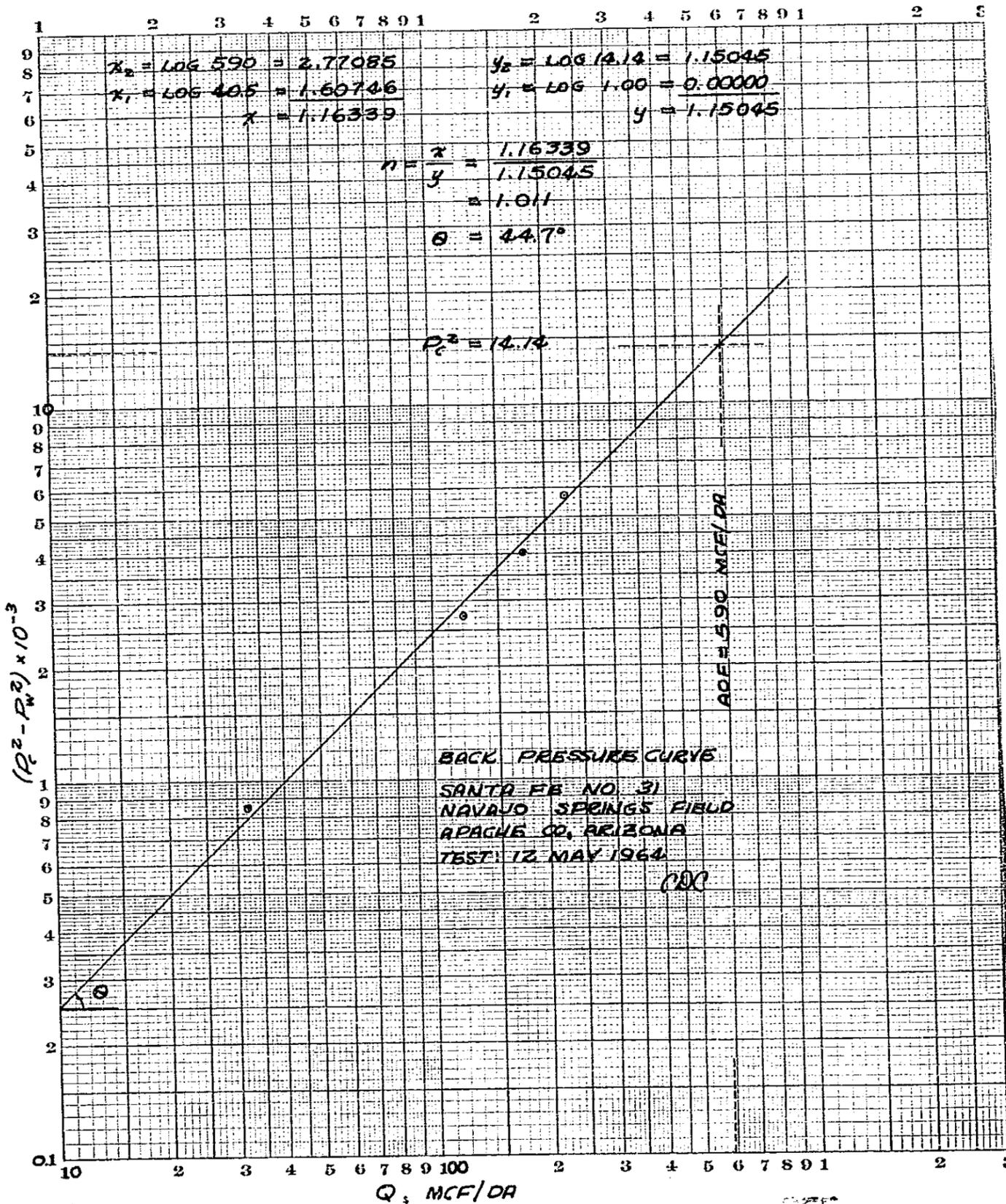
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MAR 29 1971

O & G CONS. COMM.

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PRINTED IN U.S.A.

NO. 4223. LOGARITHMIC 5 BY 3-INCH CYCLES.



DENVER OFFICE 2520 FIRST NATIONAL BANK BUILDING - MA 5259



EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

TELEPHONE 36-24104 • P. O. BOX 291 • CARMEL, ILLINOIS

April 6, 1964

Mr. John Petty
Oil & Gas Conservation Commission
1624 West Adams
Phoenix 7, Arizona

Dear Mr. Petty:

I have enclosed completion reports of the following wells in Apache County:

Eastern-Santa Fe #31 - SE Sec. 29-20N-27E ✓
Eastern-Santa Fe #32 - SW Sec. 28-20N-27E
Eastern-Santa Fe #35 - SW Sec. 27-20N-27E

These wells will be included in a proposed unit, and I believe a bit of comment is necessary to a better understanding of their present status.

SF #31 - Set 2 7/8" @ 1049' - tested 146 MCF through orifice - made 3 attempts to log - hole bridged at various intervals - on 4th attempt was able to get tool in hole and run induction log - ran cement bond log - poor cement job - perforated w/4 holes 1036-37 - received 120' water fill up - attempted to washover 2 7/8" w/4 1/2" pipe and failed. Unless we can correct this condition application to drill a new hole will be made. Well presently designated "Incomplete".

SF #32 - Pipe has not been perforated

SF #35 - No log run - lost circulation @ 1062' - no Coconino samples at this interval - squeezed 7 times w/zeogel; set 4 1/2" @ 1062' - expect to deepen hole - casing not perforated. Did receive a fair blow of gas estimated from 50-90 MCF.

Yours very truly,

EASTERN PETROLEUM COMPANY

J. N. Edwards
J. N. Edwards



JNE:mf

Encls.

cc: Santa Fe Pacific Railroad Co.

255

CORE LABORATORIES, INC.
 Petroleum Research Engineering
 DALLAS, TEXAS

Page No. 1

CORE ANALYSIS RESULTS

Company: EASTERN PETROLEUM COMPANY Location: COCONINO
 Well: SANTA FE #2531 Core Type: DIAMOND CONV.
 Field: Date Recd: 1-26-63
 County: APACHE State: ARIZONA 184 Location: NW SE Sec. 29-20N-27E
 Address: MCGONAG

Lithological Abbreviations

| SAMPLE NUMBER | DEPTH FEET | PERMEABILITY MILLIDARIES | POROSITY PERCENT | RESIDUAL SATURATION PERCENT PURE | | LITHOLOGICAL DESCRIPTION AND REMARKS |
|---------------|------------|--------------------------|------------------|----------------------------------|-------------|--------------------------------------|
| | | | | WATER | HYDROCARBON | |
| 1 | 1003-04 | 250 | 17.6 | 0.0 | 47.3 | SANDSTONE |
| 2 | 1004-05 | 1369 | 14.0 | 0.0 | 42.5 | SANDSTONE |
| 3 | 1005-06 | 315 | 15.6 | 0.0 | 47.5 | SANDSTONE |
| 4 | 1006-07 | 39 | 12.6 | 0.0 | 37.7 | SANDSTONE |
| 5 | 1007-08 | 89 | 11.2 | 0.0 | 44.5 | SANDSTONE |
| 6 | 1008-09 | 3.7 | 9.7 | 0.0 | 71.1 | SANDSTONE |
| 7 | 1009-10 | 19 | 13.2 | 0.0 | 53.0 | SANDSTONE |
| 8 | 1010-11 | 35 | 13.5 | 0.0 | 70.5 | SANDSTONE |
| 9 | 1011-12 | 32 | 11.2 | 0.0 | 51.9 | SANDSTONE |
| 10 | 1012-13 | 43 | 10.8 | 0.0 | 87.0 | SANDSTONE |
| 11 | 1013-14 | 160 | 10.4 | 0.0 | 84.5 | SANDSTONE |
| 12 | 1014-15 | 284 | 13.9 | 0.0 | 51.7 | SANDSTONE |
| 13 | 1015-16 | 31 | 12.4 | 0.0 | 55.6 | SANDSTONE |
| 14 | 1016-17 | 15 | 11.5 | 0.0 | 62.4 | SANDSTONE |
| 15 | 1017-18 | 21 | 11.2 | 0.0 | 70.5 | SANDSTONE |

SERVICE NO. 8 NO INTERPRETATION OF RESULTS.

File 255
 12

October 16, 1963 ..

Mr. Petty:

Eastern Petroleum Company also owns Section 28 & 30
of same township & range.

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL DEEPEN PLUG BACK

NAME OF COMPANY OR OPERATOR **EASTERN PETROLEUM COMPANY** DATE **Oct. 16, 1963**

P. O. Box 291 **Carmi** **Illinois**
Address City State

DESCRIPTION OF WELL AND LEASE

Name of lease **Eastern-Santa Fe Fee** Well number **31** Elevation (ground) **5680 (Approximately)**

Well location **1330' from EL; 1650' from SL of SE/4** Section—township—range or block & survey **29-20N-27E**

Field & reservoir (if wildcat, so state) **Navajo Springs Area** County **Apache**

Distance, in miles, and direction from nearest town or post office **2½ miles southeast of Navajo**

Nearest distance from proposed location to property or lease line: **1330** feet
Distance from proposed location to nearest drilling, completed or applied—for well on the same lease: **---** feet

Proposed depth: **1030** Rotary or cable tools **Rotary** Approx. date work will start **10-16-63**

Number of acres in lease: **640** Number of wells on lease, including this well, completed in or drilling to this reservoir: **-0-**

If lease, purchased with one or more wells drilled, from whom purchased: Name Address

Status of bond **Blanket**

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone)

* Fill in Proposed Casing Program on other side

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the **Secretary** of the **Eastern Petroleum Company** (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

OK John Petty

Date **October 16, 1963**

J. D. Edwards
Signature

Permit Number: **255**
Approval Date: **October 18, 1963**
Approved By: *[Signature]*
Notice: Before sending in this form be sure that you have given all information requested. Much unnecessary correspondence will thus be avoided.
See Instruction on Reverse Side of Form

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION

Application to Drill, Deepen or Plug Back

Form No. P-1

File two copies

Effective Feb. 28, 1962.

INSTRUCTIONS

READ CAREFULLY AND COMPLY FULLY

For the purpose of this determination attach hereto a neat, accurate plat, map or sketch of this lease, section, block or lot locating thereon the proposed site for this location. Plat shall be drawn to a scale which will permit the facile observation of all pertinent data. Show distances of the proposed well from the two nearest lease and section lines, and from the nearest wells on the same lease completed in or drilling to the same reservoir. If the location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well, and the names and addresses of all adjoining lease or property owners.

In event plat is filed for the purpose of designating the drilling and producing unit, or proration unit, on which the proposed well is to be drilled, the boundaries of such unit shall be shown, also the boundaries of all other such units attributed to other wells on the same lease completed in or drilling to the same reservoir. The acreage contained within each unit shall also be shown.

Do not confuse survey lines with lease lines. The sketch or plat should show your entire lease if possible. If it is not practical to show the entire lease and the plat shows only a section, block or lot out of your lease, you should clearly show that same is only a part of the lease.

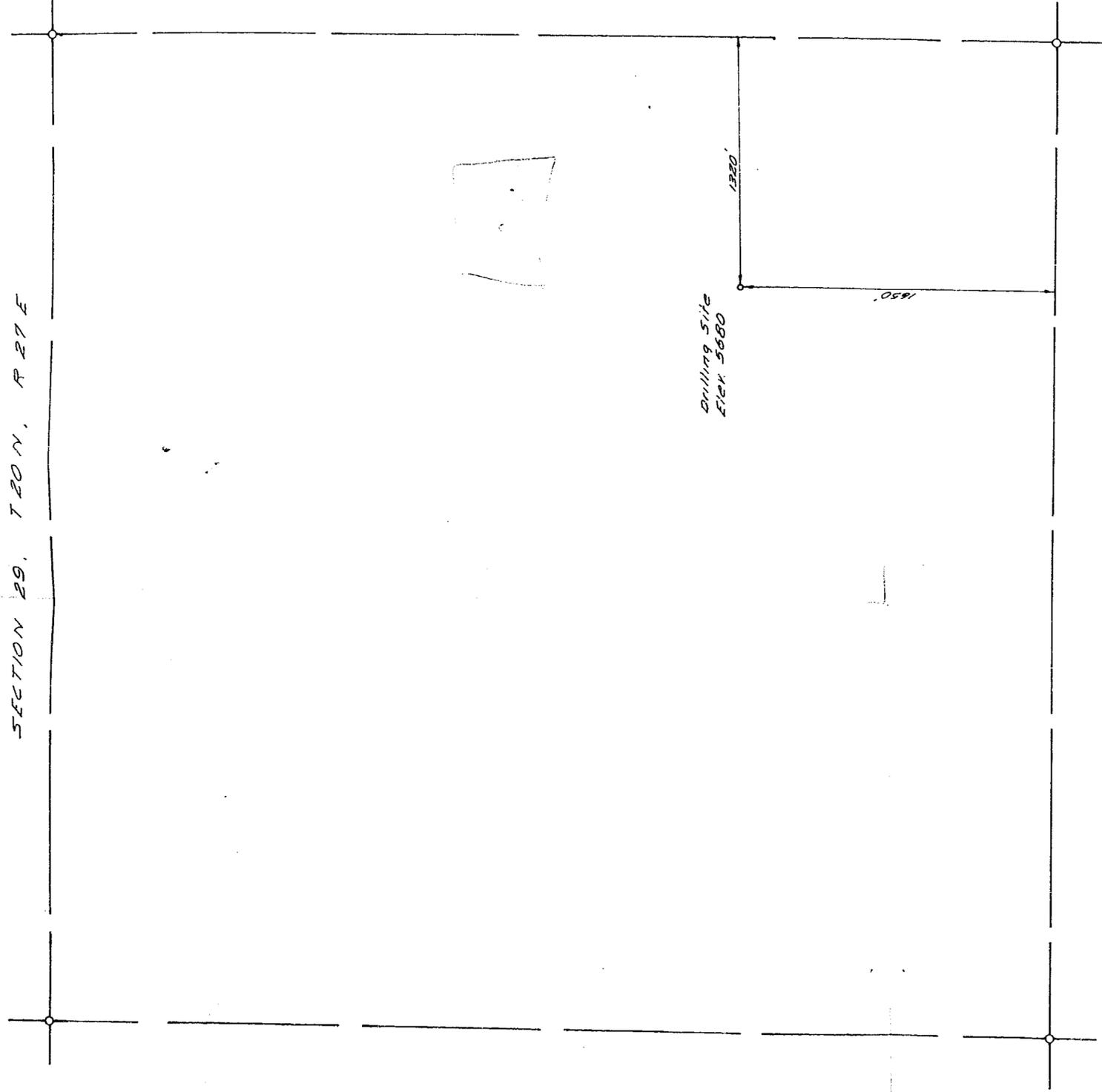
Designate scale to which plat or sketch is drawn. Also designate northerly direction on the sketch or plat.

PROPOSED CASING PROGRAM

| Size of Casing | Weight | Grade & Type | Top | Bottom | Cementing Depths | Sacks Cement |
|----------------|--------|--------------|-----|--------|------------------|--------------|
| Surface 7" | 23# | J-55 | -0- | 60 | 60 | 25 |

APACHE COUNTY - ARIZONA

SECTION 29, T20N, R27E



Scale 1" = 500'

PLAT OF DRILLING SITE

Surveyed for EASTERN PETROLEUM
Oct. 17, 1963

Surveyed by:

LACY C. GREER
ENGINEERING CO.
Holbrook, ARIZONA

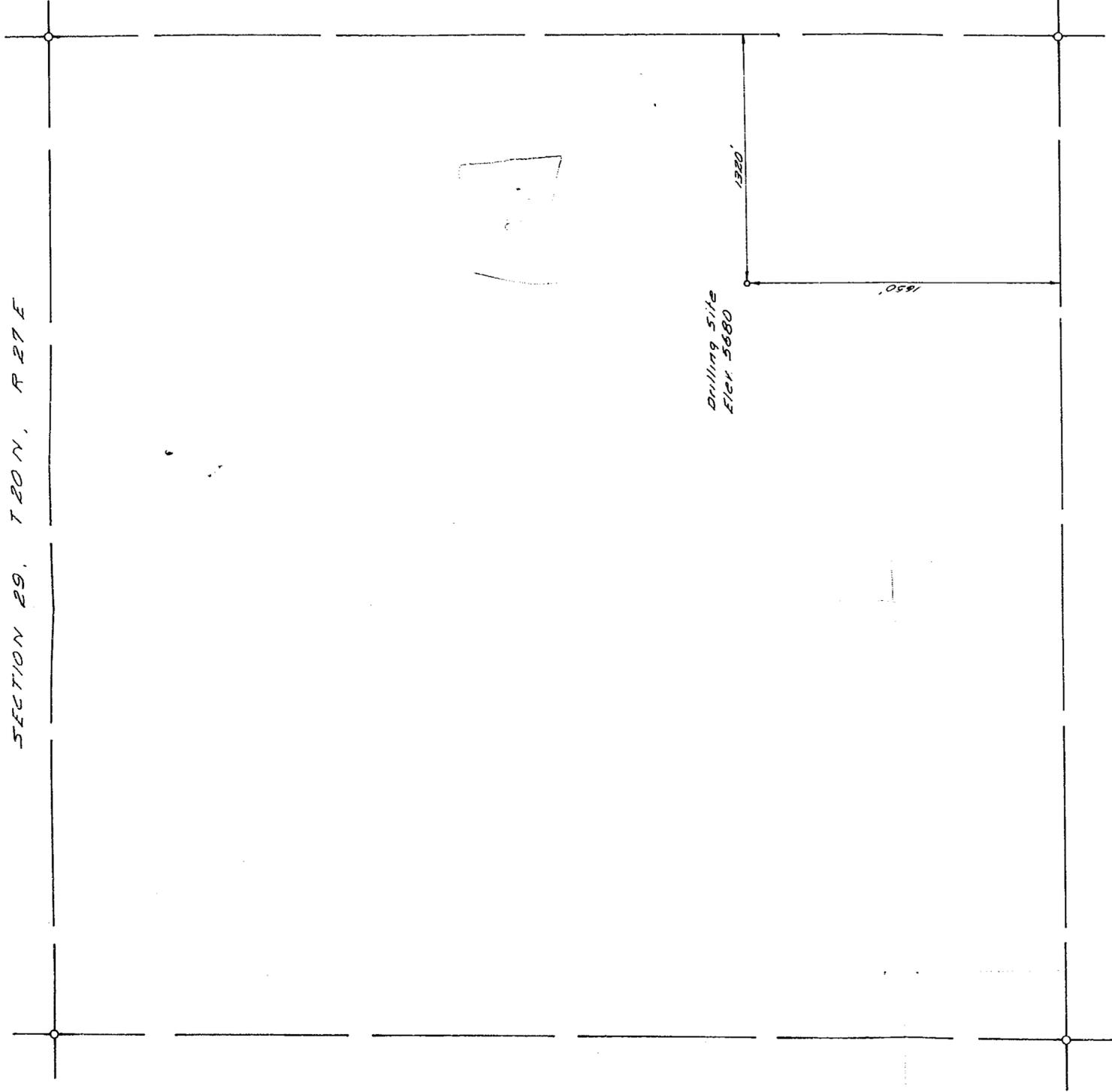


OFFICE OF THE REGISTRAR

Apache County
San Francisco, Ca
1/27/64

APACHE COUNTY - ARIZONA

SECTION 29, T20N, R27E



Drilling Site
Elev. 5680

1320'

1650'

Scale 1" = 500'

PLAT OF DRILLING SITE
Surveyed for EASTERN PETROLEUM
Oct. 17, 1963

Surveyed by:
LACY C. GREER
ENGINEERING CO.
Holbrook, Arizona



APACHE COUNTY
SECTION 29, T20N, R27E



OFFICE OF THE STATE ENGINEER



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
1645 WEST JEFFERSON, SUITE 420
PHOENIX, ARIZONA 85007
PHONE: (602) 271-5161

June 26, 1978

United States Fidelity and
Guaranty Company
Surety Department
Foster and Messick, Managers
456 N. Meridian Street
Indianapolis, Indiana 46204

Re: Eastern Petroleum Company, Carmi, Illinois
Bond No. 27716 13 3983 65; \$25,000

Gentlemen:

Eastern Petroleum Company has complied with the rules and regulations of the Oil and Gas Conservation Commission of the State of Arizona.

This letter is to authorize your release of Eastern Petroleum Company's above referenced bond.

Very truly yours,

W. E. Allen
Director
Enforcement Section

WEA/vb

cc - Mr. Henry Fullop

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LIABILITY UNDER THIS BOND MAY NOT BE TERMINATED WITHOUT WRITTEN PERMISSION OF THIS COMMISSION.

KNOW ALL MEN BY THESE PRESENTS

BOND SERIAL NO. 27716-13-
3983-65-

That we: EASTERN PETROLEUM COMPANY

of the County of: White in the State of: Illinois

as principal, UNITED STATES FIDELITY AND GUARANTY COMPANY
and

of Baltimore, Maryland
AUTHORIZED TO DO BUSINESS WITHIN the State of Arizona.

as surety, are held and firmly bound unto the State of Arizona in the penal sum as indicated, lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation is that whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to wit:

(May be used as blanket bond or for single well)

CANCELLED

DATE 6-26-78

NOW, THEREFORE, if the above bounden principal shall comply with all of the provisions of the laws of this State and the rules, regulations and orders of the Oil and Gas Conservation Commission, especially with reference to the requirements of A.R.S. 27-516, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil & Gas Conservation Commission all notices and records required by said Commission, in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantities, then this obligation is void; otherwise, the same shall be and remain in full force and effect.

Penal sum of TWENTY FIVE THOUSAND AND NO/100 DOLLARS (\$25,000.00)

ATTORNEY-IN-FACT AFFIDAVIT

STATE OR COMMONWEALTH OF Indiana
COUNTY OR CITY OF Marion } ss:

Before me, a Notary Public, personally came Gary R. Peterson known to me, and known to be the Attorney-in-Fact of United States Fidelity and Guaranty Company, a Maryland Corporation, which executed the attached bond as surety, who deposed and said that his signature and the corporate seal of said United States Fidelity and Guaranty Company were affixed by order and authority of said Company's Board of Directors, and that the execution of the attached bond is the free act and deed of United States Fidelity and Guaranty Company.

Given under my hand and seal this 2nd day of November, 1965.

DONALD RAY FOWLER
My commission expires May 4, 1969

Donald R. Fowler
Notary Public.

My Commission expires _____

Jud. 876 (9-57)

By: John L. [Signature]

Form No. 2

File Two Copies

Permit No. _____

Operator Eastern Petroleum Co.

Bond Company U.S. F & G Co Amount \$25,000

Bond No. ~~not shown~~ Date Approved 11-12-65

27716-13-3983-65

Permits covered by this bond:

| | | |
|--------------------------------|----------------------------|----------------|
| 48 | 348 shut-in | 584 |
| 80 producing | 365 | 584 |
| 88 producing | 366 Not Drilled | 586 |
| 107 | 464 | 587 |
| 108 | 504 | 592 |
| 109 | 505 | 594 |
| 150 | 523 | 595 |
| 152 | 536 | 596 |
| 155 repaired by 561 | 539 | 599 |
| 188 | 549 | 600 |
| 194 producing | 561 | 601 |
| 206 shut-in | 560 | |
| 209 | 565 | |
| 218 | 567 | |
| 236 shut-in | 568 | |
| 237 | 569 | |
| 239 | 570 | |
| 234 | 576 | |
| 237 | 577 | |
| 268 | 578 | |
| 284 | | |
| 276 | | |
| 250 | | |
| 282 | | |
| 255 shut-in | | |
| 258 shut-in | | |
| 259 | | |
| 273 | | |
| 263 shut-in Prod | | |
| 264 | | |
| 257 | | |
| 284 | | |
| 207 | | |
| 207 | | |
| 251 | | |
| 252 | | |
| 269 | | |
| 81 producing | | |
| 276 | | |

CANCELLED

DATE 6-26-78

Revised 18" replaced by
Front 3'



OFFICE OF
Oil and Gas Conservation Commission

STATE OF ARIZONA
8656 NORTH CENTRAL, SUITE 106
PHOENIX, ARIZONA 85020
PHONE: (602) 271-5161

April 19, 1977

Mr. Warren E. Richardson
Kerr-McGee Corporation
Kerr-McGee Center
Oklahoma City, Oklahoma 73125

Dr. C. F. Swain
Crest Oil Company
Box 57
Alton, Illinois 62002

Mr. J. F. Schlafly
Crest Oil Company
Box 57
Alton, Illinois 62002

Re: Navajo Springs Unit, Apache County, Arizona

Gentlemen:

You are aware that Kerr-McGee Corporation suspended operations on their helium extraction plant located at Navajo, Arizona in February, 1976. This plant was supplied with raw helium from wells in the Pinta Dome Unit and also from two wells in the Navajo Springs Unit, namely: Eastern Petroleum Company's Santa Fe No. 13 located in the NE/4 SW/4 Section 31, T20N, R27E, and Kerr-McGee Barfoot No. 1 located in the NE/4 SW/4 Section 32, T20N, R27E.

Not only has Kerr-McGee Corporation suspended operations of its extraction plant, it has recently plugged all the remaining wells in the Pinta Dome Unit.

Records of the Oil and Gas Commission indicate there are ten wells in the Navajo Springs Unit that are classified as shut in helium wells. Only a few of these wells ever produced or were ever connected to the Kerr-McGee plant or the plant formerly operated by Western Helium.

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Mr. Warren E. Richardson
Dr. C. F. Swain
Mr. J. F. Schlafly
April 19, 1977
Page 2

In order to protect the fresh water zones in this area from any possibility of contamination and because there is no market now or in the foreseeable future for any raw helium gas that may remain within the Navajo Springs Unit, Coconino Formation, it is the opinion of this Commission that all remaining unplugged wells in this unit be properly plugged and abandoned.

Mr. Henry Fullop with Eastern Petroleum Company, the operator of the Navajo Springs Unit, has been advised of the Commission's position on this matter. He was first notified by letter and, more recently, by long distance telephone. A response to the letter was never received. Mr. Fullop did indicate by telephone that, at the present time, it would pose a severe financial strain on him to plug these wells.

Unless the Commission can receive some positive assurance within 60 days from the date of this letter that the remaining shut in wells in the Navajo Springs Unit will be properly plugged and abandoned, the Commission will find it necessary to request the bonding company to fulfill their obligations and plug the subject wells.

This letter is addressed to you only for the purpose of acquainting you, as working interest owners in the unit, with the situation as it presently exists and also to inform you of the Commission's position.

Very truly yours,



William E. Allen
Director
Enforcement Section

WEA/vb

cc - Mr. Henry Fullop
Eastern Petroleum Company



EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

TELEPHONE (312) 357-4104 P. O. BOX 2911 CARMEL, ILLINOIS 62821

September 10, 1974

Mr. W. E. Allen
Oil & Gas Conservation Comm.
4515 North 7th Avenue
Phoenix, Arizona 85013

Re: Navajo Springs Unit

Dear Mr. Allen:

Your letter of September 9 requested that we submit Form 9 for two wells, Crest-Santa Fe #2, Sec. 33-20N-27E and Kiva #1, Sec. 13-20N-28E.

HC 520
Yesterday in your office I pencilled in an application for Kiva #1.

Crest #2 is in the Navajo Springs Unit along with these shut-in wells:

| | | | |
|--------------|---|------------------|-----|
| Santa Fe #14 | - | Section 5-19-27 | 206 |
| Santa Fe #17 | - | Section 4-19-27 | 236 |
| Crest #7 | - | Section 6-19-27 | 204 |
| Santa Fe #31 | - | Section 29-20-27 | 257 |
| Santa Fe #32 | - | Section 28-20-27 | 258 |
| Santa Fe #35 | - | Section 27-20-27 | 263 |

As Unit Operator we feel it our obligation to seek approval of the various unit owners before proceeding to plug. You will recall that Nos. 14, 17 and 35 produced about 154,000 MCF before Western Helium Corporation shut down. The best well is #17. At this time it is not known whether Kerr would want to produce it.

I am notifying the several owners today of the Commission's request.

Yours very truly,

EASTERN PETROLEUM COMPANY

J. N. Edwards
J. N. Edwards

JNE:sjn

cc: Mr. Harold E. Uhrig
Foster & Messick, Mgrs.
456 N. Meridian Street
Indianapolis, Indiana 46209

RECEIVED

SEP 13 1974



EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

TELEPHONE (818) 382-4104 - P. O. BOX 291 - CARMI, ILLINOIS 62821

September 10, 1974

Kerr-McGee Corporation ✓
Kerr-McGee Center
Oklahoma City, Oklahoma 73102
Attn: John Fisher

Crest Oil Company
P. O. Box 57
Alton, Illinois 62002

Re: Navajo Springs Unit
Shut-in Wells

Gentlemen:

There are seven shut-in wells in the Unit; Eastern-Santa Fe Nos. 14, 17, 31, 32 and 35 and Crest-Santa Fe Nos. 2 and 7.

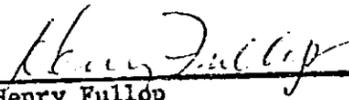
We have been advised by the Oil & Gas Conservation Commission that unless these wells are activated and produced the Commission will of necessity order all wells plugged and abandoned. The Commission is pressing this issue very hard. The best well, No. 17, produced around 70,000 MCF in 1972 and 1973.

On August 15 we notified the Commission that it was possible these wells may be required to sustain the normal take in the future. However, if arrangements are not made to produce it is our opinion that we will be forced to plug them.

Before proceeding further with the Commission we need to know your decision. Please give us your views or decision within seven days of receipt of this letter.

Yours very truly,

EASTERN PETROLEUM COMPANY
Unit Operator


Henry Fullop

RECEIVED

SEP 12 1974

O & G CON. COMM.

HF:sjn



OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA
4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 271-5161

June 21, 1974

CERTIFIED MAIL

Mr. Henry Fullop
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois 62821

Re: Navajo Springs Area

Dear Mr. Fullop:

This Commission has requested several times to be advised of your plans for further operations on your unplugged wells in the Navajo Springs area.

Mr. Edwards submitted some Sundry Notices and Reports on Wells, Form 25, indicating that you planned to plug some of the wells. Some others were to be transferred to Dan Schwetz. Still others, some of which have never produced commercially, apparently were to maintain their present status.

You are aware that several wells in this area have never indicated any ability to produce and others that are carried as shut-in helium wells have never produced commercially and no attempt to produce some of these wells was ever made.

At a meeting of the Commission on this date we were instructed to direct you to properly plug, by August 31, 1974, all wells in this area not now producing. Prior to plugging any well, the plugging program must be approved by the Commission and all operations relating to the plugging and abandonment will be witnessed by a member of the Commission staff.

Within this time frame, this Commission will consider any feasible plan that you might have to place whatever wells that are capable of producing back on production.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA/rlb

cc - J. N. Edwards and U.S.F. & G.

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OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 271-5161

April 12, 1974

CERTIFIED MAIL

Mr. Henry Fullop
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois 62821

Re: Navajo Springs Area

Dear Mr. Fullop:

We have received Mr. Edward's letter dated March 12, 1974 together with Form 25, Sundry Notice and Reports, on 16 wells in the Navajo Springs area. We are aware that a number of your wells are in the Navajo Springs Coconino Unit. According to our records, several of the wells that are in the Unit have never produced except during testing and are being carried as shut-in helium wells. A number of wells outside the Unit have never produced, and your completion reports indicate the production on the potential test to be zero or TSM. Other wells have been taken off production for various reasons.

The possibility of some of these wells ever being produced commercially again appears negligible. As you know, Western Helium has not taken gas from your wells since December 31, 1973. This company is now in the process of dismantling and moving their plant out of the area. There is a possibility that Kerr-McGee might arrange to take gas from some of the wells in the Navajo Springs Unit as they are now doing from your Santa Fe No. 13 and Barfoot.

It is the opinion of this Commission that all non-commercial wells in the Navajo Springs area, whether in the Unit or not, should be permanently plugged and abandoned as quickly as possible. These wells would include, within the Navajo Springs Coconino Unit, the Crest Santa Fe No. 2, Santa Fe Nos. 31 and 32, and the Reese No. 2. No production has been reported from any of these wells. Also to be plugged should be your Ancon Santa Fe Nos. 21 and 21-1A, Connelly KM State No. 1, Merde No. 1 and all the non-producers that have been drilled within the past three years. Your Merde No. 2 must be plugged immediately. The hole in the casing at approximately 750' has never been repaired and the well is flowing water. Also your Dreck No. 1 has been reported plugged and abandoned, a copy of your plugging report is attached. It is possible that this well has been partially plugged, however there is definitely no plug in the top of the casing and fluid is several hundred feet from the surface. The dry hole marker was never installed. It is on

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Mr. Henry Fullop
April 12, 1974
Page 2

location but the casing had a bucket inverted over the open end. The hole you drilled on the original location for the Chambers No. 1 for a "water well" is open with wire line and other junk around the open hole. Mr. Tom Pelton, the owner or holder of the surface rights of the land on which the two Chamber holes are located has expressed the desire to assume responsibility of both the holes for water wells. Mr. Pelton's address is P. O. Box 7, Sanders, Arizona 86512, phone: (602) 688-2930. Our Form No. 24, when executed by Mr. Pelton, will satisfy our requirements. Also Wayne Wallace has some interest in some of the holes on his place for use as water wells.

Recently we found a well some 700' + in a northerly direction of the Merde No. 2, a copy of a photograph is attached. We have no records of a well being drilled at this location. Any information that you could give us on this well would be appreciated. It is being used as a water well.

Either Mr. Bannister or myself will be happy to discuss the above mentioned situation with you. However, we are determined to have the existing conditions in the area brought into complete compliance with the rules and regulations of the Oil and Gas Conservation Commission in the very near future.

We would appreciate your thoughts on the above.

Very truly yours,



W. E. Allen, Director
Enforcement Section

WEA/rlb

Encs.

cc John Fisher, Kerr-McGee, Oklahoma
Richard J. Gasdaska, Western Helium, Pennsylvania
C. F. Swain, Crest Oil, Illinois
Jess Edwards, Eastern, Illinois
U.S.F. &G., Indiana

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OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 271-5161

January 8, 1974

Mr. Robert Fullop
Eastern Petroleum Company
P. O. Box 226
Farmington, New Mexico 87401

Re: Crest Oil Santa Fe No. 2
NE/SW Sec 33-20N-27E
Permit #110

Santa Fe Fee No. 24
SE/NW Sec 24-20N-27E
Permit #536

Ancon 21-1A
Sec 31-20N-28E
Permit #537

Santa Fe Fee Kiva No. 1
NE/SW Sec 13-20N-25E
Permit #560

Santa Fe Fee 6x-1
SE/NW Sec 25-20N-28E
Permit #565

Chambers Santa Fe No. 1
NE/SW Sec 21-21N-28E
Permit #567

Sanders No. 2 Santa Fe Fee
NE/SW Sec 15-21N-28E
Permit #568

Szar State No. 1
NE/NW Sec 36-20N-27E
Permit #578

Merde Indian #1
Sec 30-20N-28E
Permit #592

Merde No. 2
SW/SE Sec 30-20N-28E
Permit #596

Santa Fe Kiva #2
NE/SW Sec 24-20N-28E
Permit #599

Beacon No. 1
Sec 29-20N-29E
Permit #600

Santa Fe Fee No. 1-11
NW/SE Sec 11-20N-28E
Permit #601

Crest Oil Company #7 Santa Fe
SW/NE Sec 6-19N-27E
Permit #204

Santa Fe Fee #31
C N/2 SE/4 Sec 29-20N-27E
Permit #255

Santa Fe Fee #32
SW/NE/SW Sec 28-20N-27E
Permit #258

Dear Mr. Fullop:

As we have previously advised, semi-annual status reports are required on the above referenced wells. This report was due in this office

Page 2
Mr. Robert Fullop
January 8, 1974

January 1, 1974. Please forward these reports as quickly as possible,
and indicate any work that you anticipate performing on these wells
within the next six months.

Please submit Completion Reports for your Indian Allotted Merde No. 1
and Santa Fe Beacon No. 1.

Very truly yours,


W. E. Allen, Director
Enforcement Section

WEA/rlb

Encs.

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EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

TELEPHONE 38-24104 · P. O. BOX 291 · CARMEL, ILLINOIS

March 26, 1971

Mr. W. E. Allen
Oil & Gas Conservation Comm.
4515 North 7th Avenue
Phoenix, Arizona 85013

Re: Santa Fe #31
Sec. 29-20N-27E

Dear Mr. Allen:

In searching through some old well material I find this well was subsequently perforated from 992-1006 w/4 holes per foot and tested on May 12, 1964. A copy of this test indicating an open flow potential of 590 MCF/D is enclosed. I also find the wash-over was a failure.

A subsequent test was taken by Arkla on August 13, 1964 with an indicated maximum flow of 394 MCF/D.

| | |
|----------------------------|--------|
| Shut-in Pressure - 5/12/64 | 107.1# |
| 8/13/64 | 95.9# |

This well has never been on production.

As to Santa Fe #13 our records indicate this was an open hole completion with 4½" set on top of the Coconino.

Yours very truly,

EASTERN PETROLEUM COMPANY

J. N. Edwards
J. N. Edwards

JNE:sjn

Enc.

RECEIVED

MAR 29 1971

O & G CONS. COMM.

25

March 23, 1971

Mr. Henry Fullop
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois 62821

Re: Eastern #13 Santa Fe Fee
NE/4 SW/4 Sec. 31-T20N-R27E
Apache County
Our File #194

Eastern #31 Santa Fe Fee
C N/2 SE/4 Sec. 29-T20N-R27E
Apache County
Our File #255

Dear Mr. Fullop:

Please refer to my letter of March 2, 1971, requesting information on the well #31 and a corrected Completion Report on your well #13.

I understand that you have been ill; and, I assume that this is the reason you have not responded to my request.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA:jd

March 2, 1971

Mr. Henry Fullop
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois 62821

Re: Eastern #13 Santa Fe Fee
NE/4 SW/4 Sec. 31-T20N-R27E
Apache County
Our File #194

Eastern #31 Santa Fe Fee
C N/2 SE/4 Sec. 29-T20N-R27E
Apache County
Our File #255

Dear Mr. Fullop:

This office together with the Arizona Bureau of Mines is in the process of making a report for public distribution on all wells, not in confidential status, that have been drilled in the State of Arizona. This report, among other things, will show various geological information: formation tops; total depths; production, if any; etc.

While going through the files, we noticed that your Completion Report on well #31 submitted April 6, 1964, indicates that only one foot in this well was perforated. You also indicated that the well produced 146 MCF gas on a four-hour test. Certain information in our files indicate that this test may have been made while drill stem testing. Other information indicates that at the time the completion attempt on this well was being made, you anticipated washing over the 2-7/8" tubing used for your production string. Since our records indicate that this well has never been on production, would you please advise us of the present status, the producing interval, and any other information that might assist this office in assembling the information we need to complete our publication.

We need a corrected Form 4, Well Completion Report, on your well #13. The Completion Report that you filed with the Commission dated July 13, 1962, indicates that you had submitted all

Page 2
Mr. Henry Fullop
March 2, 1971

information available at that time; however, it also indicates that the cement plug had not been drilled or the production string perforated.

We would appreciate the requested information at your earliest convenience.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA:jd
Enc.

Jun@ 5, 1969

Mr. J. N. Edwards
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois 62821

Re: Navajo Springs Unit Wells

Dear Mr. Edwards:

This letter constitutes permission from this Commission to suspend the annual testing for the captioned wells as provided by Rule 401 during June, 1969.

Sincerely,

John Bannister
Executive Secretary

JAL:jf

cc: Mr. Henry Fullop, Eastern Petroleum Company



EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

TELEPHONE 36 2704 - P. O. BOX 791 - CARMI, ILLINOIS

June 3, 1969

Mr. John Bannister
Oil & Gas Conservation Comm.
1624 West Adams, Room 202
Phoenix, Arizona 85007

Re: Capacity Tests of Gas Wells

Dear Mr. Bannister:

Reference is made to Mr. Lambert's letter of May 22 relative to annual testing of gas wells under Rule 401.

You will recall that last year this requirement was waived for Kerr-McGee's Pinta Dome Unit for various reasons and for Navajo Springs. Please refer to my letter of July 5, 1968 and yours of June 21.

Is there any particular reason why this cannot be waived this year. Please advise at an early date.

Didn't take long for you to get the Corporation Commission on the ball. Thanks.

Yours very truly,

EASTERN PETROLEUM COMPANY

J. N. Edwards
J. N. Edwards

JNE:sjn



A - Lambert
X - Chrono

OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
ROOM 202
1624 WEST ADAMS
Phoenix, Arizona 85007
PHONE: 271-5161

May 22, 1969

Mr. Henry Fullop
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois 62821

- Re: Eastern Santa Fe #13
Eastern Santa Fe #14
Eastern Santa Fe #17
Eastern Santa Fe #31
Eastern Santa Fe #32
Eastern Santa Fe #35
Eastern Ancon Santa Fe #21
Eastern Reese #2
Kerr-McGee Barfoot State #1
Crest Santa Fe #2
Crest Santa Fe #7

- Permit #194
Permit #206 } X
Permit #236 }
Permit #255 }
Permit #258 }
Permit #263 }
Permit #234 } X
Permit #348 }
Permit #238 }
Permit #110 }
Permit #204 }

Dear Mr. Fullop:

In accordance with Rule 401 the Oil and Gas Conservation Commission, State of Arizona, has adopted procedures for the annual testing for all gas and/or helium wells.

The Commission's procedure is based upon and must be used in conjunction with the Manual of Back-pressure Testing of Gas Wells as issued by Interstate Oil Compact Commission, P. O. Box 53127, Oklahoma City, Oklahoma 73105.

The Commission has prepared, in addition, a supplement to the IOCC manual inasmuch as that manual is based upon a pressure base other than the 15.025 required by the State of Arizona. The supplement to the IOCC manual has made all necessary corrections to the IOCC manual to reflect the 15.025 pressure base.

Page 2
Mr. Henry Fullop
May 22, 1969

The tests as required by Rule 401 shall be conducted during the month of June each year and reported in duplicate by July 10th of each year. Forms 18 and 20 will be used for this purpose.

Yours truly,

James A. Lambert
Administrative Assistant

JB:jf
Enc.
copy to Mr. J. N. Edwards

24

Operator Eastern Petroleum Company

Bond Company U. S. Fidelity & Guaranty Co. Amount \$10,000

Bond No. 27716-13-3746-60 Date Approved 8-1-60

Permits covered by this bond:

SEE THIS FILE 269

- | | |
|------------|------------|
| <u>269</u> | <u>234</u> |
| <u>81</u> | <u>230</u> |
| <u>252</u> | <u>229</u> |
| <u>251</u> | <u>237</u> |
| <u>107</u> | <u>236</u> |
| <u>207</u> | <u>218</u> |
| <u>157</u> | <u>209</u> |
| <u>88</u> | <u>206</u> |
| <u>80</u> | <u>194</u> |
| <u>78</u> | <u>188</u> |
| <u>264</u> | <u>155</u> |
| <u>263</u> | <u>150</u> |
| <u>273</u> | <u>152</u> |
| <u>259</u> | <u>109</u> |
| <u>258</u> | <u>108</u> |
| <u>255</u> | <u>107</u> |
| <u>282</u> | |
| <u>250</u> | |
| <u>276</u> | |
| <u>284</u> | |
| <u>227</u> | |
| <u>250</u> | |

CANCELLED

DATE Sta 11-22-65

255

June 21, 1968

Mr. J. N. Edwards
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois

Dear Mr. Edwards:

In reponse to your request of June 10, 1968, this letter constitutes permission from this commission to exempt annual gas Capacity Test on the Ancon Santa Fe #21 well and the following shut-in helium wells in Navajo Springs Unit:

| <u>Well No.</u> | <u>Tract No.</u> | <u>Location</u> |
|-----------------|------------------|-----------------|
| Santa Fe #14 | III | 5-19-27 |
| Santa Fe #17 | IV | 4-19-27 |
| Santa Fe #31 | X | 29-20-27 |
| Santa Fe #32 | XI | 28-20-27 |
| Santa Fe #35 | XII | 27-20-27 |
| Reese #2 | VII | 1-19-26 |
| Crest S.F. #7 | II | 7-19-27 |
| Crest S.F. #2 | V | 33-20-27 |

Very truly yours,

John Bannister
Executive Secretary
ir

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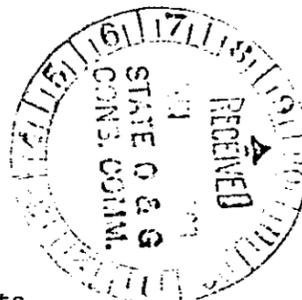


EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

TELEPHONE 36 2204 - P. O. BOX 1111 - SAN ANTONIO, TEXAS

June 10, 1968

Mr. John Bannister
Executive Secretary
Oil & Gas Conservation Comm.
Room 202, 1624 West Adams
Phoenix, Arizona 85007



Re: Back-Pressure Tests

Dear Mr. Bannister:

In accordance with your letter of June 6, 1968, we are applying for exemption from testing requirements for the following shut-in helium wells in Navajo Springs Unit:

| <u>Well No.</u> | <u>Tract No.</u> | <u>Location</u> |
|-----------------|------------------|-----------------|
| Santa Fe #14 | III | 5-19-27 |
| Santa Fe #17 | IV | 4-19-27 |
| Santa Fe #31 | X | 29-20-27 |
| Santa Fe #32 | XI | 28-20-27 |
| Santa Fe #35 | XII | 27-20-27 |
| Reese #2 | VII | 1-19-26 |
| Crest S.F. #7 | II | 7-19-27 |
| Crest S.F. #2 | V | 33-20-27 |

also,

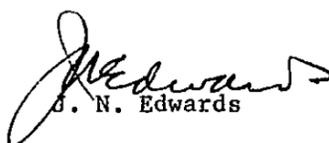
Ancon S.F. #21 31-20-28

Inasmuch as we have no plans at present to produce any of these wells we feel no useful purpose would result from such tests.

Test results of Santa Fe #13, Sec. 30-20-27 and Barfoot-State #1, Sec. 31-20-27 will be forwarded within the prescribed time.

Yours very truly,

EASTERN PETROLEUM COMPANY


J. N. Edwards

JNE:sjn

June 6, 1968

Eastern Petroleum Company
P.O. Box 291
Carmi, Illinois

Attention: Mr. Henry Fullop

Gentlemen:

Your attention is referred to our letter of May 13, 1968 and Directive D-2-68 dated May 1, 1968, concerning capacity testing of all gas and/or helium wells.

As you are aware, you as operator of the Navajo Springs Unit are responsible for compliance on all wells in the Unit, both producing and non-producing (shut-in).

Should good and sufficient reasons be stated for deferment of this testing on specified wells, this Commission would give due consideration.

Very truly yours,

John Bannister
Executive Secretary
mr
enc

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March 4, 1966

Eastern Petroleum Co.
P.O. Box 291
Carmi, Illinois

Attention: Mr. J.N. Edwards

Re: Eastern Petroleum #31 Santa Fe well
NW SE 29-20N-27E, Apache County, Arizona
File 255

Gentlemen:

In reviewing our records we note that we do not have any record as to a core being taken on captioned well, and if taken, a copy of the core analysis.

Will you please advise us if cores were taken from this well, and if so, we would appreciate your furnishing us with cuttings from this core and such core analyses as you may have run.

If no core was taken, will you please advise us to this effect.

We appreciate your cooperation.

Yours very truly,

John Bannister
Executive Secretary
nr

COPY

ARKANSAS LOUISIANA GAS COMPANY

Shreveport, Louisiana

August 14, 1944

Arizona Oil and Gas Commission
1624 West Adams
Phoenix, Arizona

Attention: Mr. John Bannister

Gentlemen:

In accordance with your request to receive the test results on the wells in the Navajo Springs Field, Apache County, Arizona, we are enclosing herewith, in duplicate, the results of these tests.

Each well was tested at what we speak of as a maximum rate of flow - that is, the maximum rate at which we produced the well and the rates of flow where the wellhead pressure approached 100 pounds. This is indicated under Column 2 where it says, "Well Tubing Pressure - PWS." You will note that a volume of 1000 MCFD was measured from eight wells, testing these wells from 15 to 15 1/2 hours each. These are our field calculations, and there may be a slight change in the total volume when the final calculations are determined. The volumes of gas in MCFD have

been corrected to indicate the standard conditions of measuring gas at 15.025 pressure base.

I would like to take this opportunity to express to you how much I appreciate you and your staff carrying over the records of the Conservation Office and the assistance which was given to me on my trip to Phoenix. If the volumes are any different on our final calculations, I will forward a copy to your office.

Yours very truly,

ARKANSAS LOUISIANA GAS COMPANY

(Signed)

E. S. Brown

Production Engineer

Enclosures

XXXXXXXXXXXXX
XXXXX

July 2, 1964

Dr. H. Wesley Peirce
Assistant Geologist
Arizona Bureau of Mines
The University of Arizona
Tucson, Arizona 85721

Dear Mr. Peirce:

In reply to your letter of June 25th, please be advised
that the correct locations are as follows:

Eastern Petroleum Company-Eastern Santa Fe Fee #31
1300 FEL; 1650 FEL, Section 29 - T20N - R27E
Apache County (Our File No. 255)

Eastern Petroleum Company-Eastern Santa Fe Fee #37
1650 E of N Line; 1650 W of W Line
Section 34 - T20N - R27E, Apache County
(Our File No. 269)

If there is ever anything we can do for you, please do
not hesitate to ask.

Very truly yours,

John K. Petty
Petroleum Geologist

JKP/mkc

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THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85721

ARIZONA BUREAU OF MINES

June 26, 1964

Mr. John Petty, Geologist
Arizona Oil and Gas Conservation Commission
1624 W. Adams
Phoenix, Arizona

Dear John:

A cloudy day in Tucson - perhaps we will get some rain for a change.

One of my workers threw out the box that gave the location for Eastern Petroleum #31 Santa Fe well. We have the samples but I was not able to find this particular well listed in the Arizona Oil Report so as to get a location that way. We also have a conflict with the location of Eastern hole #37. The AOR says 1650 FEL and the box says 1650 FWL. Can you resolve these two location difficulties for us?

Thanks for your help, John.

Yours very truly,

Wes

H. Wesley Peirce
Assistant Geologist

HWP/y

*1330 FEL; 1650 FSL
of 46/4 - Sew. 29-T20N
R27E
#255 - Apache City*

*#269
1650 A of 27 line;
1650 E of 27 line;
Sew. 34-T20N
R27E, Apache City*

255

November 5, 1963

Mr. Henry Fullop, President
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois

Re: Eastern Santa Fe Fee #31

Dear Mr. Fullop:

We are enclosing two copies of surveyor's plat
on Section 29, T20N, R27E, Apache County, Arizona.

Very truly yours,

John K. Petty
Acting Executive Secretary

JKP:mko
Encl.

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LACY C. GREER ENGINEERING CO.
P. O. BOX 478
HOLBROOK, ARIZONA

October 17, '63

Arizona State Gas Conservation Comm.
1624 West Adams
Phoenix 7, Arizona

Att: Mr. John Petty

Dear Sir:

At the request of Mr. Henry Fullop, Eastern Petroleum, representative, we are submitting three copies of the plat representing the location of the boring site in section 29, Township 20 North, Range 27 East.

Sincerely

Lacy C. Greer - L.C.G.
Lacy C. Greer

MJ

cc: Henry Fullops

MJ

October 22, 1963

Mr. J. N. Edwards
Eastern Petroleum Company
P. O. Box 291
Carmi, Illinois

Re: Eastern-Santa Fe Fee #31
Section 29-T20N-R27E, Apache County, Arizona

Dear Mr. Edwards:

We hand you herewith approved permit on above named project, and wish you the most good luck you can have.

Our file does not contain the well location plat on this well nor on Eastern-Santa Fe Fee Core Hole #2, 1065 feet south of northwest corner, Section 31-T20N-R27E, Apache County. We would appreciate your forwarding same to us.

Sincerely,

John K. Petty
Acting Executive Secretary

JKP:mkc

Encl.

255-
Receipt mailed 10/25/63

EASTERN PETROLEUM CO.
ACCOUNT NO. 2

DETACH AND RETAIN THIS STATEMENT
THE ATTACHED CHECK IS IN PAYMENT OF ITEMS DESCRIBED BELOW.
IF NOT CORRECT PLEASE NOTIFY US PROMPTLY. NO RECEIPT DESIRED.

| INVOICE | | DESCRIPTION | TOTAL AMOUNT | DEDUCTIONS | | NET AMOUNT |
|---------|-----|--|-----------------|------------|---------|---------------|
| DATE | NO. | | | DISCOUNT | FREIGHT | |
| | | Application for permit to drill Santa Fe #30, Sec. 29-20N-27E, Apache County, Arizona <i>Permit # 255</i> | | | | \$25.00 |