



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

P. O. Box 959
Farmington, New Mexico

December 23, 1962

IN REPLY REFER TO:

Man American Petroleum Corp.
P. O. Box 480
Farmington, New Mexico

Re: Navajo Tribal lease I-89-Ind.-58

Gentlemen:

Your letter of Dec. 18 requests approval to dispose of salt water produced with Pennsylvanian oil from wells Nos. 17 and 19 U.S.C. Sec. 19, located on the above referenced leasehold. You propose to dispose of this water behind the 7" casing in the Entrada-Chinle zone in well No. 17 U.S.C. Sec. 19. From information furnished by your company this zone is not productive of oil, gas, or fresh water anywhere in the vicinity of the disposal well.

This office offers no objection to your proposed method of disposing of the salt water produced from the above mentioned wells.

Very truly yours,

P. T. McGrath
P. T. McGrath
District Engineer

PTMcGrath:st



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

January 28, 1963

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.

Pan-American Petroleum Corporation
P. O. Box 480
Farmington, New Mexico

Attn: Mr. T. M. Curtis
District Superintendent

Dear Mr. Curtis:

Reference is made to my letter of January 11, 1963, and your reply dated January 16, 1963, concerning the disposal of salt water in the Entrada-Chinlee zone by using the USG Section 19 No. 17 Well.

This office has reviewed the analysis of Entrada water from the Navajo Tribal No. 1 well in Section 12, Township 29 North, Range 17 West and is inclined to agree with your statement that the Entrada water may have a total solids content in excess of 10,000 ppm in the subject field. Therefore, this office offers no objection to your proposal to inject salt water into the Entrada-Chinlee zone between the 2157 foot and 3100 foot interval by using Well No. 17.

Very truly yours,

S. E. Reynolds
State Engineer

By: *D. E. Gray*
D. E. Gray
Engineer
Water Rights Division

DEG/ma
cc-Mr. A. L. Porter, Jr.

RESEARCH DEPARTMENT
WATER ANALYSIS

Lease Navajo Tribal Well No. 1 Lab. No. 11-537
 Field Wildcat County San Juan State New Mexico
 Quarter Survey Blk. Section 12 T. 29N R. 17W
 Exact Location 790' From N & 1000' From W Lines Sample Series No. Hi-70
 Producing Stratum Entrada PBTB Total Depth 2190
 Stratum Yielding Sample Entrada From To
 Condition of Well
 Sample Collected From Drill Pipe Method Used From Drill Pipe Breakout
 Collected by A. L. Rothe Date Collected 4-30-54 Date Received 5-12-54
 Transmittal Letter by L. O. Speer, Jr. Date 4-30-54 File COF-2033-251.3

Radicle	Per Cent by Analysis	(a) P. P. M.	(b)	(a) X (b)	Per Cent Reacting Value	Calculated Compound	P. P. M.
Na	33.37	3,010	.0435	130.7	47.25	Na ₂ SO ₄	6,503
Ca	.84	73	.0499	1.6	1.34	NaCl	2,221
Mg	.14	12	.0322	1.07	.40	NaCO ₃	69
Fe						NaHCO ₃	
						CaSO ₄	
						CaCl ₂	
SO ₄	42.75	3,397	.0208	91.40	23.76	CaCO ₃	132
Cl	14.93	1,347	.0282	37.97	14.02	Ca(HCO ₃) ₂	
CO ₂	2.00	170	.0333	5.69	2.21	MgSO ₄	
HCO ₃			.0164			MgCl ₂	
H ₂ S						MgCO ₃	45
						Mg(HCO ₃) ₂	
Total solids as a summation of radicle						9,020	P.P.M.
Total solids by evaporation and ignition of residue at low red heat						10,050	P.P.M.
Sample as received							
Resistivity ohms/MM. <u>210</u> at <u>77°F</u> pH Value <u>11.50</u> Specific Gravity 60°/60°F. <u>1.0095</u>							

PROPERTIES OF REACTION IN PER CENT

PRIMARY SALINITY: SO₄ + Cl with equal value Na (K) 9.52 %
 SECONDARY SALINITY: If SO₄ + Cl is greater than Na (K) %
 Then SO₄ + Cl = with equal value of Ca + Mg 1.06 %
 PRIMARY ALKALINITY: Excess Na (K) over SO₄ + Cl with equal value of CO₂ + S %
 SECONDARY ALKALINITY: Excess Ca + Mg over SO₄ + Cl with equal value of CO₂ + S 4.42 %
 CHLORIDE SALINITY: Cl (SO₄ + Cl) X 100% 35 %
 SULPHATE SALINITY: SO₄ (SO₄ + Cl) X 100% 24 %

NOTE: Multiply Parts per Million by .0553 to obtain Grains per Gallon.

REMARKS:

This analysis indicates contamination, probably from drill line fluid and is not considered representative of formation water.

cc: C. F. Bedford
C. L. Kelley
L. O. Speer, Jr.

RECEIVED	
Roswell Dist. Office	
JUN 18 1954	
DS	
DE	
DC	
FILE	

1
 2
 3
 4
 5

Analyst C. F. Bedford Date 5-11-54

STANOLIND OIL AND GAS COMPANY

Form 10, Rev. 1-1-54

April 30, 1954

DATE

STANOLIND OIL AND GAS COMPANY
1136 NORTH LEWIS AVENUE
TULSA, OKLAHOMA

FILE: C-2-23-251-3

SAMPLE NO.: 15-70

RECEIVED

Reswell Dist. Office

MAY 7 1954

ATTENTION: Mr. J. L. Clarke

GENTLEMEN:

WE SHIPPED ON 4-30-54

DATE

VIA

Motor Freight

OF Water

COLLECTED FROM

Drill Pipe

(SEPARATOR, WELL HEAD, FORMATION)

DATA ON SAMPLE FOLLOW:

NAME OF COMPANY Stanolind Oil and Gas Company FIELD Wildest PLANT -LEASE Navajo Tribal WELL NO. 1

790' from N & 1090' from W lines,

LOCATION Sec. 12, T24N, R17W COUNTY San Juan STATE New MexicoSIZE OF SAMPLE, IF FLUID 1 gallon NUMBER OF CORES -PRODUCING STRATUM Indiada STRATUM YIELDING SAMPLE IndiadaTOTAL DEPTH 2190 METHOD OF COLLECTING SAMPLE from drill pipe back outGAS/OIL RATIO - PRESSURE AtmosphereTEMPERATURES at 70° FSAMPLES COLLECTED BY A. W. Sothe DATE COLLECTED 4-30-54SHIPPED BY L. C. Spear, Jr. DATE SHIPPED 4-30-54PURPOSE OF TAKING SAMPLE For routine analysis - A-T water analysis.TESTS DESIRED routine mineral analysis and reactivity.REMARKS: 151 #4 taken 2165-2190.

Orig - Mr. J. L. Clarke
cc - Mr. C. F. Bedford
cc - Mr. C. L. Kelley

YOURS VERY TRULY,

L. C. Spear, Jr.
by C. C. Miller, Jr.

STANOLIND OIL AND GAS COMPANY

Tulsa, Oklahoma

April 30, 1954

DATE

STANOLIND OIL AND GAS COMPANY
1136 NORTH LEWIS AVENUE
TULSA, OKLAHOMA

FILE: CO-2023-251-3

SAMPLE NO. DE-70

RECEIVED

Reswell Dist. Office

MAY 7 1954

ATTENTION: Mr. J. E. Clarke

GENTLEMEN:

WE SHIPPED ON 4-30-54

DATE

VIA Motor Freight

OF Water

COLLECTED FROM

Drill Pipe

(SEPARATOR, WELL HEAD, FORMATION)

DATA ON SAMPLE FOLLOW:

NAME OF COMPANY Stanolind Oil and Gas Company FIELD Wilcox PLANT

LEASE Navajo Tribal WELL NO. 1

790' from H & 1090' from W lines,

LOCATION Sec. 12, T2N, R17E COUNTY San Juan STATE New Mexico

SIZE OF SAMPLE, IF FLUID 1 gallon NUMBER OF CORES

PRODUCING STRATUM Entrada STRATUM YIELDING SAMPLE Entrada

TOTAL DEPTH 2190 METHOD OF COLLECTING SAMPLE from drill pipe stick out

GAS/OIL RATIO PRESSURE Atmosphere

TEMPERATURES 1st. 70° F

SAMPLES COLLECTED BY A. W. Sothe DATE COLLECTED 4-30-54

SHIPPED BY L. O. Spear, Jr. DATE SHIPPED 4-30-54

PURPOSE OF TAKING SAMPLE For routine analysis - DST water analysis.

TESTS DESIRED Routine mineral analysis and reactivity.

REMARKS: DST #4 taken 2165-2190.

Orig - Mr. L. E. Atkins
cc - Mr. C. E. Bedford
cc - Mr. C. L. Kelley

YOURS VERY TRULY,

L. O. Spear, Jr.

by C. C. Fuller, Jr.