

PAN AMERICAN PETROLEUM CORPORATION
RESEARCH CENTER
WATER ANALYSIS

LOCATION SAMPLED: Division Denver District South Area Farmington
Operator (Plant) Pan American Well No. 15 Lease USG Section 19
State (Province) New Mexico County (Parish) San Juan
Twp. 29N Rng. 16W Sec. 19 Quarter (Lsd.) _____ Other (Meridian) _____
Field name Hogback Wildcat () Field Well (x)
Sample collected from Well head Sample collected by J. C. Holt Date 8-7-67
Interval sampled _____ to _____ Interval name Dakota
Recovery _____
Form 97 transmitted by L. O. Speer, Jr. Date transmitted 8-7-67, File: E-178-535.11
Technical Service request authorized by _____ Office _____
Technical Service Number: 3098

ORGANIC CONSTITUENTS in mg/l

	BOTTOM	MIDDLE	TOP	MUD
Benzene				
Toluene				
Phenols				
HC Gases				

DESCRIPTION OF SAMPLE

Condition as received _____
Color _____
Odor _____
Suspended solids _____
Bottom sediment _____
Oil content _____

QUALITY OF SAMPLE

Chloride BOTTOM MIDDLE TOP
ion mg/l: _____
Comments on quality _____

CONVENTIONAL MAJOR ION ANALYSIS

	Major Ions mg/l ¹	% of Total Major Ions	Reaction Value meq/l ²	% of Total Reaction Value
CATIONS				
Sodium Na ⁺	1,035	30.82	45.03	49.01
Calcium Ca ⁺⁺	10	.30	.50	.54
Magnesium Mg ⁺⁺	5	.15	.41	.45
Potassium K ⁺				
ANIONS				
Chloride Cl ⁻	212	6.31	5.98	6.52
Bicarbonate HCO ₃ ⁻	1,100	32.76	18.04	19.63
Sulfate SO ₄ ⁻	900	26.80	18.72	20.37
Carbonate CO ₃ ⁻	96	2.86	3.20	3.48
TOTAL	3,358			

Total solids by evaporation 2,850 mg/l
NaCl resistivity equivalent (Dunlap) 2,134 mg/l
Resistivity 2.30 ohm-meters at 77 °F
pH 8.7 Specific gravity 1.003 at _____ °F
Ryznar stability index (2pHs-pH) _____ at _____ °F

OTHER IONS AND DISSOLVED SOLIDS

CATIONS	mg/l	ANIONS	mg/l	OTHERS	mg/l
Lithium Li ⁺		Bromide Br ⁻		Iron Fe	
		Iodide I ⁻		Boron B	
				Silica SiO ₂	

¹ Data previously reported on Form 66 7-62 under the heading P.P.M. was actually in milligrams per liter. By definition, ppm = mg/l /sp. gr.
² meq/l means milligram equivalents per liter.

REMARKS AND CONCLUSIONS:

cc: M. S. Kraemer, W. R. Franey Date received 8-18-67 Field sample no. HC-186
H. T. Hunter Lab. no. T-18652
P. H. Garrison Analyst James J. Elliott Date 8-25-67
L. O. Speer, Jr.
J. P. Barrett