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Martin Water Laboratories, Inc.

708 W. INDIANA
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RESULT OF WATER ANALYSES

TO: Mr. Bill Pierce
600 N. Marienfeld, Ste. 1100
Midland, TX 79701

LABORATORY NO. 19959
SAMPLE RECEIVED 1-11-99
RESULTS REPORTED 1-13-99

COMPANY Penwell Energy Inc. LEASE Tomcat Federal "21" Com. #1
FIELD OR POOL Sand Dunes, East (Morrow)
SECTION 21 BLOCK SURVEY T-23-S&R-32R COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Recovered water - taken from Tomcat Federal "21" Com. #1

NO. 2.

NO. 3.

NO. 4.

REMARKS: Lower Brushy Canyon - 8,418'-8,424' - Sample submitted by Schlumberger

[illegible]

Miller Chemicals, Inc.**WATER ANALYSIS REPORT****SAMPLE**

Oil Co. : Concho Resources
 Lease : Brininstool
 Well No. : Water Well
 Lab No. : F:\ANALYSES\Nov1299.001

Sample Loc. :
 Date Analyzed: 12-November-1999
 Date Sampled : 27-October-1999

ANALYSIS

1. pH 8.130
 2. Specific Gravity 60/60 F. 1.003
 3. CaCO₃ Saturation Index @ 80 F. +0.587
 @ 140 F. +1.287

Dissolved Gases

MG/L EQ. WT. *MEQ/L

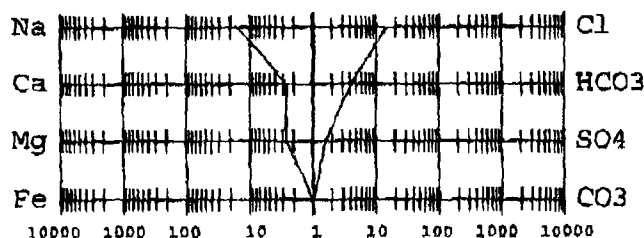
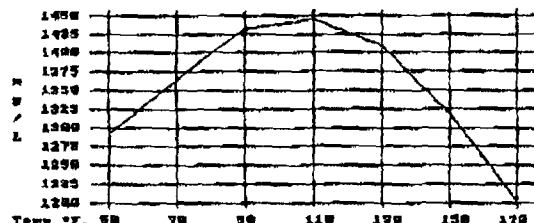
4. Hydrogen Sulfide Not Present
 5. Carbon Dioxide Not Determined
 6. Dissolved Oxygen Not Determined

Cations

7. Calcium (Ca++) 50 / 20.1 = 2.49
 8. Magnesium (Mg++) 30 / 12.2 = 2.46
 9. Sodium (Na+) (Calculated) 338 / 23.0 = 14.70
 10. Barium (Ba++) Below 10

Anions

11. Hydroxyl (OH-) 0 / 17.0 = 0.00
 12. Carbonate (CO₃=) 0 / 30.0 = 0.00
 13. Bicarbonate (HCO₃-) 244 / 61.1 = 3.99
 14. Sulfate (SO₄=) 75 / 48.8 = 1.54
 15. Chloride (Cl-) 500 / 35.5 = 14.08
 16. Total Dissolved Solids 1,237
 17. Total Iron (Fe) 3 / 18.2 = 0.14
 18. Total Hardness As CaCO₃ 250
 19. Resistivity @ 75 F. (Calculated) 4.882 /cm.

LOGARITHMIC WATER PATTERN
*meq/L.**Calcium Sulfate Solubility Profile****PROBABLE MINERAL COMPOSITION**
COMPOUND EQ. WT. X *meq/L = mg/L.

Ca (HCO ₃) ₂	81.04	2.49	202
CaSO ₄	68.07	0.00	0
CaCl ₂	55.50	0.00	0
Mg (HCO ₃) ₂	73.17	1.51	110
MgSO ₄	60.19	0.95	57
MgCl ₂	47.62	0.00	0
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.58	41
NaCl	58.46	14.08	823

*Milli Equivalents per Liter

This water is slightly corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts in solution.