

0372  
0432

# WATER ANALYSIS WORK SHEET

File \_\_\_\_\_

Company PRO NEW MEXICO Well Name \_\_\_\_\_ Sample No. 1

Formation \_\_\_\_\_ Depth \_\_\_\_\_ Sampled From PRODUCED

Location \_\_\_\_\_ Field \_\_\_\_\_ County SAN JUAN State N.M.

Date Sampled 3/25/89 Date Analyzed 3/26/89 Analyst WDS

SPECIFIC GRAVITY 1.022 @ 66 °F. pH 6.42

HYDROGEN SULFIDE ABSENT

RESISTIVITY 0.26 Ohm-Meters @ 66 °F. (meas. or calc.)

DISSOLVED SOLIDS (calculated) 26,266 mg/L

DISSOLVED SOLIDS (evaporated)

Weight dish + solids \_\_\_\_\_ grams - weight dish \_\_\_\_\_ grams

Weight difference \_\_\_\_\_ grams X 1,000,000 ÷ volume sample \_\_\_\_\_ ml = \_\_\_\_\_ mg/L

CHLORIDE (\_\_\_\_ ml sample) ml AgNO<sub>3</sub> 20.3 X 710 = 14,413 mg/L

SULFATE (\_\_\_\_ ml sample) mg BaSO<sub>4</sub> \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ mg/L

BARIUM (\_\_\_\_ ml sample) mg BaCrO<sub>4</sub> \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ mg/L

|           | BICARBONATE | CARBONATE | HYDROXYL |
|-----------|-------------|-----------|----------|
| P = O     | M           | 0         | 0        |
| P < 1/2 M | M - 2 P     | 2 P       | 0        |
| P = 1/2 M | 0           | 2 P       | 0        |
| P > 1/2 M | 0           | 2 (M - P) | 2P - M   |
| P = M     | 0           | 0         | M        |

M \_\_\_\_\_ P - 0 -

Use factor indicated in chart for ml H<sub>2</sub>SO<sub>4</sub> in calculations

BICARBONATE (\_\_\_\_ ml sample) ml H<sub>2</sub>SO<sub>4</sub> 1.6 X 122.0 = 1952 mg/L

CARBONATE (\_\_\_\_ ml sample) ml H<sub>2</sub>SO<sub>4</sub> \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ mg/L

HYDROXYL (\_\_\_\_ ml sample) ml H<sub>2</sub>SO<sub>4</sub> \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ mg/L

TOTAL HARDNESS (T) (\_\_\_\_ ml sample) ml EDTA 2.4

CALCIUM (C) (\_\_\_\_ ml sample) ml EDTA 4.4 X 80 = 352 mg/L

MAGNESIUM (T - C) (\_\_\_\_ ml sample) ml EDTA 3.0 X 48.6 = 146 mg/L

IRON (\_\_\_\_ ml sample) ml EDTA \_\_\_\_\_ X \_\_\_\_\_ = \_\_\_\_\_ mg/L

# CONCENTRATION IN MILLIEQUIVALENTS/LITER

|                       |               |           |   |              |       |     |
|-----------------------|---------------|-----------|---|--------------|-------|-----|
| mg/L Cl               | <u>14,413</u> | X 0.02821 | = | <u>406.6</u> | meq/L |     |
| mg/L SO <sub>4</sub>  | <u>—</u>      | X 0.02082 | = | <u>—</u>     | meq/L | (c) |
| mg/L HCO <sub>3</sub> | <u>1952</u>   | X 0.01639 | = | <u>32.0</u>  | meq/L | (a) |
| mg/L CO <sub>3</sub>  | <u>—</u>      | X 0.03333 | = | <u>—</u>     | meq/L |     |
| mg/L OH               | <u>—</u>      | X 0.05880 | = | <u>—</u>     | meq/L |     |
| TOTAL ANIONS          | <u>16,365</u> | mg/L      |   | <u>438.6</u> | meq/L | (A) |

|                    |            |           |   |             |       |     |
|--------------------|------------|-----------|---|-------------|-------|-----|
| mg/L Ba            | <u>—</u>   | X 0.01456 | = | <u>—</u>    | meq/L |     |
| mg/L Ca            | <u>352</u> | X 0.04990 | = | <u>17.6</u> | meq/L |     |
| mg/L Mg            | <u>146</u> | X 0.08226 | = | <u>12.0</u> | meq/L | (b) |
| mg/L Fe            | <u>—</u>   | X 0.03581 | = | <u>—</u>    | meq/L |     |
| CATIONS DETERMINED | <u>498</u> | mg/L      |   | <u>29.6</u> | meq/L | (B) |

SODIUM (A - B) 409.0 meq/L X 22.99 = 9403 mg/L Na  
 mg/L CATIONS DET'D. \_\_\_\_\_ + mg/L Na \_\_\_\_\_ = \_\_\_\_\_ TOTAL CATIONS(C)  
 mg/L ANIONS (A) \_\_\_\_\_ + mg/L CATIONS (C) \_\_\_\_\_ = 26,266 mg/L SOLIDS (Calc.)

## SODIUM CHLORIDE SALINITY EQUIVALENT

|                  |       |        |   |               |      |
|------------------|-------|--------|---|---------------|------|
| mg/L SODIUM      | _____ | X 1.00 | = | <u>9403</u>   | mg/L |
| mg/L CALCIUM     | _____ | X 0.95 | = | <u>334</u>    | mg/L |
| mg/L MAGNESIUM   | _____ | X 2.00 | = | <u>292</u>    | mg/L |
| mg/L SULFATE     | _____ | X 0.50 | = | <u>—</u>      | mg/L |
| mg/L CHLORIDE    | _____ | X 1.00 | = | <u>14,413</u> | mg/L |
| mg/L BICARBONATE | _____ | X 0.27 | = | <u>527</u>    | mg/L |
| mg/L CARBONATE   | _____ | X 1.26 | = | <u>—</u>      | mg/L |

SODIUM CHLORIDE SALINITY EQUIVALENT = 24,969 mg/L OK

## HYPOTHETICAL COMBINATIONS

(calculate and report only if client requests)

|                                             |       |         |   |       |      |
|---------------------------------------------|-------|---------|---|-------|------|
| CALCIUM CHLORIDE mg/L Ca                    | _____ | X 2.77  | = | _____ | mg/L |
| MAGNESIUM BICARBONATE mg/L HCO <sub>3</sub> | _____ | X 1.197 | = | _____ | mg/L |
| MAGNESIUM CHLORIDE (b-a) meq/L              | _____ | X 47.5  | = | _____ | mg/L |
| SODIUM CHLORIDE (A-B-c) meq/L               | _____ | X 58.5  | = | _____ | mg/L |
| SODIUM SULFATE (c) meq/L                    | _____ | X 71.0  | = | _____ | mg/L |