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MUDLOG TVD

| | |
|----------------------|--|
| COMPANY | EXXONMOBIL |
| WELL | PCU_197-34A7 |
| FIELD | PICEANCE CREEK |
| REGION | ROCKY MOUNTAIN |
| COORDINATES | LAT: 39.917998000 LONG: 108.277020000 |
| ELEVATION | G.L.:6487.3' RKB: 30.2' |
| COUNTY, STATE | RIO BLANCO, CO |
| API INDEX | 051031153800 |
| SPUD DATE | 01/04/2010 |
| CONTRACTOR | HELMRICH_PAYNE |
| CO. REP. | JOSH LOVE |
| RIG/TYPE | 325/FLEX 4S |
| LOGGING UNIT | MLU 48 |
| GEOLOGISTS | MARK GROSS DONNA NEW |
| ADD. PERSONS | JENN SELL |
| CO. GEOLOGIST | MELISSA J. SAURBORN |

LOG INTERVAL

DEPTHS: 3815' **TO** 12652'

DATES: 05/02/2010 **TO** 09/25/2010

SCALE: 5" = 100'

CASING DATA

10.75" **AT** 3808'

7" **AT** 8585'

4" **AT**

AT

MUD TYPES

SPUD MUD **TO** 3815'

LSND **TO** 12652'

TO

TO

HOLE SIZE

14.75" **TO** 3815'

9.875" **TO** 8600'

6.125" **TO** 12652'

TO

ABBREVIATIONS

| | | |
|-----------------------------|---------------------------------|----------------------------|
| <i>NB</i> NEWBIT | <i>PV</i> PLASTIC VISCOSITY | <i>LC</i> LOST CIRCULATION |
| <i>RRB</i> RERUN BIT | <i>YP</i> YIELD POINT | <i>CO</i> CIRCULATE OUT |
| <i>CB</i> CORE BIT | <i>FL</i> FLUID LOSS | <i>NR</i> NO RETURNS |
| <i>WOB</i> WEIGHT ON BIT | <i>CL</i> PPM CLORIDE ION | <i>TG</i> TRIP GAS |
| <i>RPM</i> ROTARY REV/MIN | <i>Rm</i> MUD RESISTIVITY | <i>SG</i> SURVEY GAS |
| <i>PP</i> PUMP PRESSURE | <i>Rmf</i> FILTRATE RESISTIVITY | <i>WG</i> WIPER GAS |
| <i>SPM</i> STROKES/MIN | <i>PR</i> POOR RETURNS | <i>CG</i> CONNECTION GAS |
| <i>MW</i> MUD WEIGHT | <i>LAT</i> LOGGED AFTER TRIP | |
| <i>VIS</i> FUNNEL VISCOSITY | <i>LAS</i> LOGGED AFTER SURVEY | |

| | | | | |
|------------------|----------------------|-------------------|------------------------|----------------------|
| ALTERED ZONE | CHERT - GLASSY | FELSIC SILIC DIKE | MARL - CALC | SANDSTONE |
| ANDESITE | CHERT - PORCEL | FOSSIL | METAMORPHICS | SANDSTONE-TUFFACEOUS |
| ANHYDRITE | CHERT - TIGER STRIPE | GABBRO | MUDSTONE | SERICITIZATION |
| BASALT | CHERT - UNDIFF | GLASSY TUFF | OBSIDIAN | SERPENTINE |
| BENTONITE | CLAY | GRANITE | PALEOSOL | SHALE |
| BIOTITIZATION | CLAY-MUDSTONE | GRANITE WASH | PHOSPHATE | SHALE TUFFACEOUS |
| BRECCIA | CLYST-TUFFACEOUS | GRANODIORITE | PORCELANITE | SHELL FRAGMENTS |
| CALCARENITE | CHLORITIZATION | GYPSUM | PORCELANEOUS CLYST | SIDERITE |
| CALCAREOUS TUFF | COAL | HALITE | PYRITE | SILICIFICATION |
| CALCILUTITE | CONGLOMERATE | HORNBL-QTZ-DIO | PYROCLASTICS | SILTSTONE |
| CARBONATES | CONGL. SAND | IGNEOUS (ACIDIC) | QUARTZ DIORITE | SILTST-TUFFACEOUS |
| CARBONACEOUS MAT | CONGL. SANDSTONE | IGNEOUS (BASIC) | QUARTZ LATITE | TUFF |
| CARBONACEOUS SH | COQUINA | INTRUSIVES | QUARTZ MONZONITE | VOLCANICLASTICS SEDS |
| CEMENT CONTAM. | DACITE | KAOLINITIC | RECRYSTALLIZED CALCITE | VOLCANICS |
| CHALK | DIATOMITE | LIMESTONE | RHYOLITE | |
| CRYSTALLINE TUFF | DIORITE | LITHIC TUFF | SALT | |
| CHERT - ARGILL | DOLOSTONE | MARL - DOLO | SAND | |

[illegible]

| | | | | | | |
|------|---------|---|--|--|--|--|
| | | | | | | N-BUTANE = 1000 PPM |
| | | | | | | I-PENTANE = 1000 PPM |
| | | | | | | N-PENTANE = 1000 PPM |
| | | | | | | |
| | | | | | | |
| | | | | | | WHEN THE MUD IS RUN THROUGH THE MGS (MUD |
| | | | | | | GAS SEPARATOR) THE INTERVAL IS MARKED ON |
| | | | | | | THE LOG IN THE SLIDE COLUMN AND NOTED ON |
| | | | | | | THE LOG. |
| | | | | | | |
| | | | | | | ALL SANDSTONE INTERVALS ARE EXAMINED FOR |
| | | | | | | SAMPLE FLUORESCENCE IN THE UV SCOPE AND |
| <300 | ROP | > | | | | FOR HYDROCARBON FLUORESCENCE AND MINOR |
| <50 | Avg WOB | > | | | | FLUORESCENCE FROM POSSIBLE FRACTURE |
| | | | | | | FILL. ALL FLUORESCENCE IS NOTED ON THE |
| | | | | | | MUD LOG. |
| | | | | | | |
| | | | | | | 10.75" SURFACE CASING WAS SET AT 3809'. |
| | | | | | | |
| | | | | | | DRILLED 10' OF NEW FORMATION AND PERFORM |
| | | | | | | F.I.T. - GOOD. DRILL AHEAD. |
| | | | | | | |
| | | | | | | SURVEY @ 3764' MD: INC 19.01 AZI 135.95 |
| | | | | | | TVD 3565.83' |

















































































