

# COLUMBINE LOGGING

Scale: 5" / 100'  
Measured Depth Log

**Well Name** Fiscus Federal LD15-77-1HN

**Location** NENW SEC15 T9N R58W

**State** CO

**County** WELD

**Country** USA

**Rig Number** PRECISION 828

**API Number** 05-123-37369

**AFE #** 200239

**Region** DENVER-JULESBURG BASIN

**Field** WILDCAT

**Spud Date** 11/3/2014

**Drilling Completed** 11/9/2014

**Surface Coordinates** 280' FNL, 1720' FWL

Lat/Long: 40.75786/-103.85363

**Ground Elevation** 4701'

**K.B. Elevation** 4717'

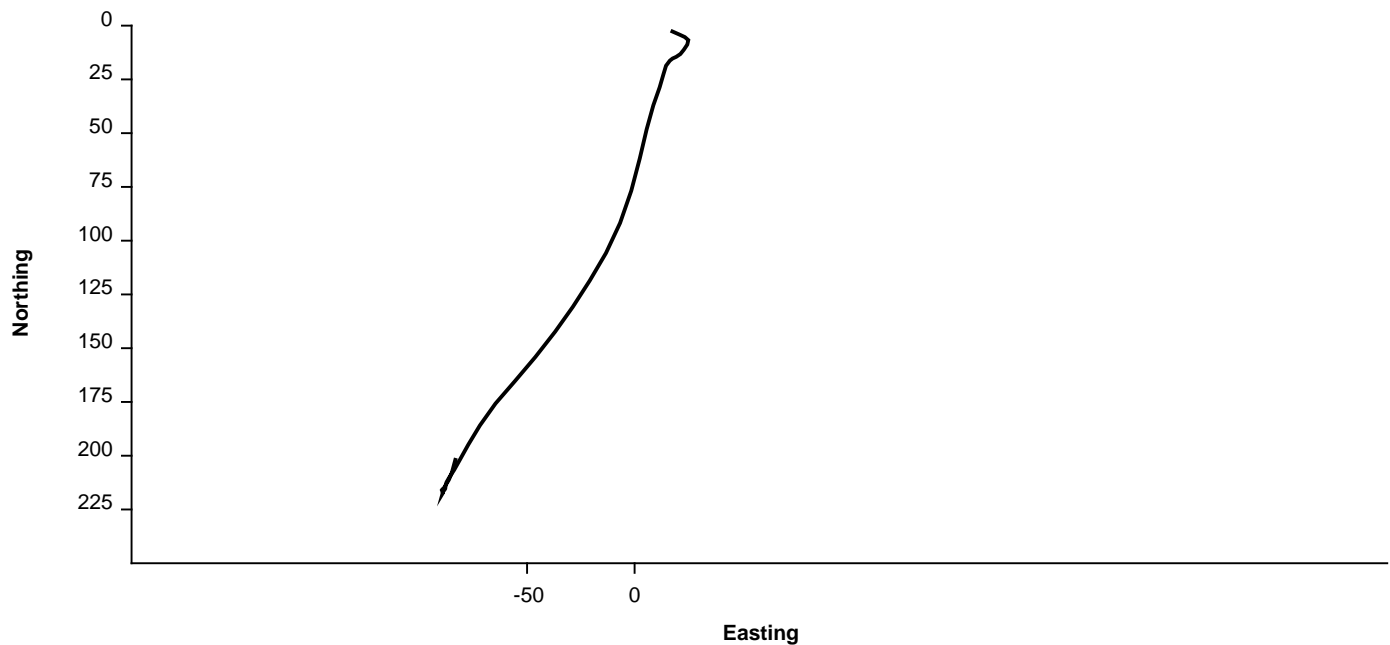
**Logged Interval** 1220' **To** 5100'

**Total Depth** 9990'

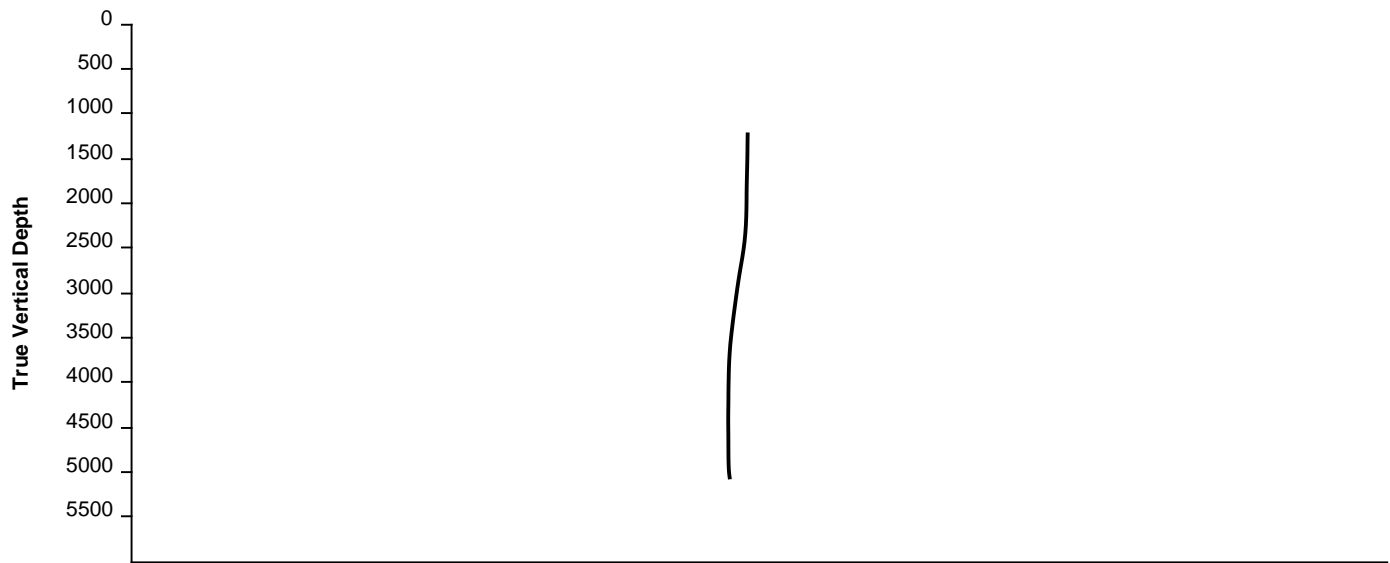
**Formation** FOX HILLS, PIERRE (PARKMAN, SUSSEX, SHANNON, TEEPEE BUTTES)

**Type of Drilling Fluid** FRESH WATER, LSND

## Survey Plan



## Survey Elevation



## Other Symbols

### Oil Show

- DEAD
- EVEN
- QUESTIONABLE
- SPOTTED STAINING

### Porosity

- E EARTHY
- F FENESTRAL
- F FRACTURE
- X INTERCRYSTALLINE
- ◇ INTEROOLITIC
- ∩ MOLDIC

ORGANIC

P PINPOINT

V VUGGY

### Engineering

- BIT CHANGE
- CONNECTION (LEFT)
- CONNECTION (RIGHT)
- CONNECTION GAS
- TRIP GAS
- DOWN TIME GAS
- CORE - LOST
- CORE - RECOVERED
- DST INTERVAL



FAULT



FORMATION TOP



GAS SHOW



OIL SHOW



MN DEPTH



MN DEPTH (RIGHT)



NORMAL FAULT



OVERTURNED STRATA



REVERSE FAULT



CASING



SIDEWALL CORE (LEFT)



SIDEWALL CORE (RIGHT)



SLIDE



SURVEY



DRILL STEM TEST



WIRELINE TESTED - LEFT



WIRELINE TESTED - RT

### Rounding

- ANGULAR
- ROUNDED
- SUBANG
- SUBRND

### Textures

- BOUNDSTONE
- CHALKY
- CRYPTOXLN

E EARTHY

FINELYXLN

GRAINSTONE

L LITHOGRAPHIC

MX MICROXLN

MS MUDSTONE

PS PACKSTONE

WS WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

WACKESTONE

## Accessories

### Fossils

- ALGAE
- AMPHIPORA
- BELEMNITE
- BIOCLASTIC
- BRACHIOPOD
- BRYOZOA
- CEPHALOPOD
- CORAL
- CRINOID
- ECHINOID

GASTROPOD

INOCERAMUS

OOLITE

OSTRACOD

PELECYPOD

PELLET

PISOLITE

PLANT REMAINS

PLANT SPORES

SCAPHOPOD

STROMATOPOROID

ARGILLITE GRAIN

BENTONITE

BITUMENOUS SUBSTANCE

BRECCIA FRAGMENTS

CALCAREOUS

CARBONACEOUS FLAKES

CHTDK

CHTLT

COAL - THIN BEDS

DOLOMITIC

FELDSPAR

FERRUGINOUS PELLET

HEAVY MINERAL

KAOLIN

MARLSTONE

MICACEOUS

MINERAL CRYSTALS

NODULES

PHOSPHATE PELLETS

PYRITE

SALT CAST

SANDY

SILICEOUS

SILTY

ANHYDRITE STRINGER

BENTONITE STRINGER

COAL STRINGER

DOLOMITE STRINGER

GYPSEUM STRINGER

LIMESTONE STRINGER

MARLSTONE (CALC) STRG

MARLSTONE (DOL) STRG

SANDSTONE STRINGER

SHALE STRINGER

SILTSTONE STRINGER

FISH

FORAMINIFERA

FOSSIL

ANHYDRITIC

ARGILLACEOUS

FERRUGINOUS

GLAUCONITE

GYPSIFEROUS

TUFFACEOUS

Stringer

## Other

**WELLSITE GEOLOGISTS:** JASON BEACH  
C.S. METZ

LOG CONTINUES ON FILE: Fiscus Federal LD15-77-1HN Horiz.mplot

GEOLOGICAL SERVICES PROVIDED BY COLUMBINE LOGGING, INC.

## Rock Types

UNKNOWN

SANDSTONE

SHALY SANDSTONE

SHALY SILTSTONE

SILTY SHALE

ANHYDRITE

BENTONITE

BRECCIA

CEMENT

CHALK

CHERT

CLAY CHOKE SAND

CLAYSTONE

COAL

CONGLOMERATE

DOLOMITE

DOLOMITIC LIMESTONE

GRANITE

GYPSUM

IGNEOUS

LIMESTONE

SIDERITE or LIMONITE

MARLSTONE

METAMORPHIC

NO SAMPLE

SALT

SALT- PEPPER SAND

SHALE

SHALE COLORED

SHALE GRAY

SILTSTONE

TILL

TUFF

WELDED TUFF

## Operator

**Company** Noble Energy Inc

**Address** 1625 Broadway  
Denver, CO 80202

## Geologist

**Name** TERESA MALESARDI

**Company** NOBLE ENERGY, INC.

**Address** 1625 Broadway  
Denver, CO 80202

