

COMPANY: NORTHWEST NATURAL
WELL: NWN 44-3-65
FIELD: Mist
LOCATION: Columbia, OR
 Location: sw 1/4 Sec. 3, T6N-R5W, WB&M
 Coordinates: 1249.1' N 03 04' 39" E
 253.4' N 86 54' 47" W
 N 873653.7 Y 129444.4 NAD 27
API No.: 36-009-00366
Spud Date: 2/27/07
Total Depth: 313/07
Elevation: K.B. 1189.8' GL + 14'
 G.L. 1175.8'
Company Geologist: Jack Meyer
Company Engineer: Clayton Roth
Company Pusher: Ed Vader
Directional Engineer: Scientific Drilling
Mud Company: Beaver Drilling Fluids
Mud Engineer: Ed Vader
Drilling Contractor: TD Well Service
Rig Pusher: Tony Muller
Rig No.: 101
Geol. Unit No.: 109
Logging Geologists: Jim Ferguson

LOG INTERVAL
DATES: 2/28/07 TO 3/23/07
DEPTHS: 75' TO 3672'
MUD TYPES
 Gel/Water TO 3672'
 TO
MUD PUMPS
PUMP #1: EMSCO DB 550 6-1/2" X 16"
PUMP #2:

TOTAL DEPTH
MEASURED: 3672'
TRUE VERTICAL: 3003'
HOLE SIZE
 17-1/2" TO 3972'
 8-3/4" TO 790'
 TO
CASING DATA
 20" AT 20'
 13-3/8" AT 790'
 AT

LEGEND
 BG - Background Gas
 CB - Core Bit
 CG - Connection Gas
 CK - Filter Cake
 CKF - Check for Flow
 CL - Salinity ppm Cl
 CR - Circulate Returns
 DB - Diamond Bit
 DF - Derrick Floor
 DG - Drilling Gas
 DS - Directional Survey
 DST - Drill Stem Test
 E.L.M.A. - Equivalent Methane
 F - Filtrate, API cc/s
 F/T - Flowing Temperature
 GCM - Gas Cut Mud
 GOW - Gas Cut Water
 G & OCM - Gas and Oil Cut Mud
 GL - Ground Level
 KB - Kelly Bushing
 LAT - Logged After Trip
 NB - New Bit
 NR - No Returns
 NCB - New Core Bit
 P - Pump Pressure
 PDC - Polycrystalline Diamond
 PPM - Parts Per Million
 PR - Poor Returns
 PV - Plastic Viscosity
 TVD - True Vertical Depth
 TVD - Suction Temperature
 TVD - True Vertical Depth
 V - Viscosity, API seconds
 W - Weight of Mud, ppb/gcc
 WOB - Weight on Bit

LEGEND
 RMF - Mud Filtrate Reactivity, Ohm-Meter
 RPM - Revolutions Per Minute
 RT - Return Bit
 RT - Rotary Table
 SD - Sand %
 SO - Show of Oil
 SOL - Solids %
 SPM - Stokes Per Minute
 SW - Short Trip Gas
 SWB - Swab Gas
 SVD - Survey Gas
 ST - Suction Temperature
 T.D. - Total Depth
 TCL - Trip Chances
 TIC - Trip Cost
 TVD - True Vertical Depth
 TVD - Suction Temperature
 V - Viscosity, API seconds
 W - Weight of Mud, ppb/gcc
 WOB - Weight on Bit

CEMENT **COAL & LIGNITE** **FINE SAND** **KAOLINITE** **VOLCANIC**
LIMESTONE **CLAY** **MEDIUM SAND** **TUFF** **IGNEOUS**
DOLOMITE **SHALE** **CONGLOMERATE** **DIATOMITE** **METAMORPHIC**
GYPSUM **SILTSTONE** **SANDSTONE** **PORCELANITE**
ANHYDRITE **SANDY SILTSTONE** **CHERT**

