

Well Schematic – Attachment 1

Casing Shoe MD (ft)	Casing Shoe TVD (ft)	Hole Size (in)	Casing and Cement	Drilling Fluids	Directional	Evaluation
7,935	7,935	36" Jet Pipe to 260 ft BML [ID = 34 inches]				
9,475	9,475	30" x 32" Sweep TOC Mud Line 28" x 0.750" WT, 220 lb/ft, X56, S.60MT [ID = 26.5 inches]	Foam cement to ML	10.4 ppg WBM	Vertical	MWD/LWD: MWD, GR, RES, PWD
TOL (16") 9,875 TOL (18") @ 10,375	10,875	26" Bit TOC Mud Line 22", 1,000" WT, 224.3 lb/ft, X80, S.90DMQT.CR [ID = 20 inches]	Foam cement to ML	10.4 ppg WBM	Vertical	MWD/LWD: MWD, GR, RES, PWD
10,875	10,875	18-1/8" Bit x 22" Reamer TOC 12,125		11.0 ppg SBM	Vertical	MWD/LWD: MWD, GR, RES, SON, PWD Cuttings Samples: Every 30ft or every 10ft in shows Isotubes: Every 90ft or every 15ft in shows Standard Mudlogging: Yes + calcimetry Advanced Mud-gas logging system: Yes Paleo-stratigraphy: Yes Geomechanical Analysis: TCO, SFR, SRD
12,875	12,875	16-1/2" Bit x 20" Reamer TOC 13,325		11.2 ppg SBM	Vertical	MWD/LWD: MWD, GR, RES, SON, PWD Cuttings Samples: Every 30ft or every 10ft in shows Isotubes: Every 90ft or every 15ft in shows Standard Mudlogging: Yes + calcimetry Advanced Mud-gas logging system: Yes Paleo-stratigraphy: Yes Geomechanical Analysis: TCO, SFR, SRD E-line: Checkshot/GR GR/RES/NEU Mineralog/SGR SWS/GR
14,075	14,075	16", 94 lb/ft, 0.500" WT, X80, HDL [ID = 17 inches]				
14,075	14,075	14-1/2" Bit x 17-1/2" Reamer TOC 16,275		11.8 ppg SBM	Vertical	MWD/LWD: MWD, GR, RES, SON, PWD Cuttings Samples: Every 30ft or every 10ft in shows Isotubes: Every 90ft or every 15ft in shows Standard Mudlogging: Yes + calcimetry Advanced Mud-gas logging system: Yes Paleo-stratigraphy: Yes Geomechanical Analysis: TCO, SFR, SRD E-line: BHI/GR GR/RES/DEN/NEU Mineralog/SGR/NMR/XYZ Res WFT/GR (Press/samples) SWS/GR
TOL (11.3/4") @ 16,675	17,275	7,675 ft MD - 13,175 ft MD: 14", 115 lb/ft, VAM T95 HC, VAM SLUJ II [ID = 12.376 inches] 13,175 ft MD - 17,275 ft MD: 14", 115 lb/ft, VM 125 HYHC, VAM SLUJ II [ID = 12.376 inches]				
17,275	17,275	TOC 19,277 12-1/4" Bit x 13-1/2" Reamer		13.5 ppg SBM	Vertical	MWD/LWD: MWD, GR, RES, SON, PWD, FPWD, DEN, NEU, NMR Cuttings Samples: Every 30ft or every 10ft in shows Isotubes: Every 90ft or every 15ft in shows Standard Mudlogging: Yes + calcimetry Advanced Mud-gas logging system: Yes Paleo-stratigraphy: Yes Geomechanical Analysis: TCO, SFR, SRD E-line: BHI/GR GR/RES/DEN/NEU/SON P&S Mineralog/SGR/NMR/XYZ Res WFT/GR (Press/samples) SWS/GR
19,977	19,977	11.3/4", 80.5 lb/ft, Q125 HC, VAM SLUJ II [ID = 10.33 inches]				
20,177 Reservoir	20,177	TOC 20,575 9-5/8" Bit		14.0 ppg SBM	Vertical	MWD/LWD: MWD, GR, RES, SON, PWD, FPWD, DEN, NEU, NMR Cuttings Samples: Every 30ft or every 10ft in shows Isotubes: Every 90ft or every 15ft in shows Standard Mudlogging: Yes + calcimetry Advanced Mud-gas logging system: Yes Paleo-stratigraphy: Yes Geomechanical Analysis: TCO, SFR, SRD E-line: BHI/GR VSP/GR GR/RES/DEN/NEU/SON P&S Mineralog/SGR/NMR/XYZ Res WFT/GR (Press/samples) SWS/GR
22,682	22,682	9-3/8", 39 lb/ft, Q125, H513 [ID = 8.575 inches] BHST = 247 deg F	Cement in Annulus			

Seal Assembly in Casing Annulus

Version: 4 E. Pinto (Updated by Simon Rowley)

Last Update: DEC 19 2013