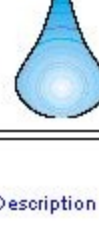


# Water Well Log

Strata Geological Services, Inc.  
Tarry, Texas  
830-562-3680



Well No. 4 Headwaters Monitor Well  
Location 15 miles NW of Kerrville - TPWD  
Geologist Wm Feathersail Wilson, Texas State Licensed PG # 21  
Driller Aramadigger, Mike Turnison  
Rig Type Air Rotary  
Total Depth 840' completed 04-05-04

Depth	Lithology	Description	Effective Porosity		Well Construction	Micro-graphs	Comments
			0	20			
0 - 30	MICRODOLOMITE: cream-lt gray-white porous fossil fragment microdolomite, Edwards @ surface						Edwards Group @ surface Elev = 2020' GPS: N 30 10 8" W 99 20' 50.6"
30 - 70	LIMESTONE: white-lt gray non-porous mega, fossil biomicrite & palmicrite						
70 - 100	MICRODOLOMITE: lt tan-lt gray slightly porous microdolomite						
100 - 143	LIMESTONE: white-lt gray mega-fossil fragment biomicrite with lesser amounts of microdolomite						
143 - 160	LIMESTONE: gray phosphate fragment marly biomicrite, top Upper Glen Rose Mbr						In Upper Glen Rose Mbr @ 143'
160 - 180	MARL: gray slightly sandy foraminiferal marl						
180 - 200	SILTSTONE: lt gray marly siltstone						
200 - 230	MARL: gray silty foraminiferal marl						
230 - 240	LIMESTONE: lt gray phosphate fragment biomicrite						
240 - 260	MARL: lt gray silty foraminiferal marl						
260 - 280	SILTSTONE: lt gray silty foraminiferal marl						
280 - 310	MARL: lt gray silty sandy marl						
310 - 320	SILT LIMESTONE: white biomicrite interbedded with gray phosphatic siltstone						
320 - 330	MARL: lt gray silty sandy marl						
330 - 380	SILTSTONE: lt gray phosphate fragment marly calcareous siltstone						
380 - 390	LIMESTONE: gray non-porous silty biomicrite						
390 - 400	MARL: lt gray silty sandy marl						
400 - 405	SHALE: lt gray compact shale						
405 - 422	CLAY: lt green - gray bentonitic clay, top of Hensel Formation						In Hensel Formation @ 405' probable equivalent facies of the Lower Glen Rose, Fearsall, Sigo and Hosston, very sharp boundary, probable disconformity, continental depositional environment while the Upper Glen Rose above is a marine paleoenvironment. Well casing in as the drill bit and string were being pulled out of the hole.
422 - 450	SANDSTONE: white-orange-gray fine grained slightly porous calc spar cemented sandstone						water level @ 420' 04-09-04
450 - 466	COAL: black sub-bituminous coal						marine from 0-405' continental from 405-820'
466 - 493	SANDSTONE: white-lt gray calc spar cemented slightly porous medium grained sandstone						
493 - 610	SAND: white-orange-lt gray loose very porous medium-coarse grained sand with lesser amounts of clay, marl & shale						possible time equivalent of the Sigo-Hosston couplet @ 493'
610 - 650	SAND & GRAVEL: white- or orange coarse grained sand and gravel						
650 - 790	SAND: white-orange coarse grained loose very porous sand						
790 - 820	SAND & GRAVEL: white- or orange coarse grained sand and gravel						
820 - 840	SHALE: dark gray or ganic fragment shale, top of Pennsylvanian shale						In Pennsylvanian shale @ 820' unconformable surface

395 ppm water TDS