

rise into the surface (12") casing from the lower intervals cased with 7" slotted liners. Final decisions on casing diameters and depths must be made by consultation with the selected drilling contractor.

The rocks to be encountered on the Markagunt Plateau can be penetrated by either rotary or cable tool drill rigs. Rotary rigs in some cases drill much faster. However, analysis of cuttings (rock fragments) and water levels is superior with cable tool rigs. For that reason, I recommend that the first well at either of the proposed locations be drilled with a cable tool rig.

## TRANSPORT OF PRODUCED WATER

Water produced from high elevations can be pumped directly into Crow Creek for free transit to Coal Creek and Cedar City. However, water pumped into a pipeline can be used for generation of electricity with inline turbines. Selection of a method for water transport should be based on the economics of free creek transit, versus pipeline construction offset by electrical generation. That decision should be made by experienced engineers.

Roice Nelson has suggested that one or more wells drilled on the plateau above the Highway 14 landslide could be directionally oriented to emerge from the aquifer rocks near the channel of Coal Creek. In that case, water could be drained into the creek without any need for pumping. The possible advantages of such wells are: (1) water pressure against the cliffs above the highway would be reduced, thereby reducing the likely frequency of future rock slides; (2) pumping costs would be eliminated; and (3) electrical generating equipment (turbines) could be installed inside the well casing, allowing the well(s) to pay for themselves through the sale of electricity.

Respectfully Submitted,



Gary F. Player  
Utah Professional Geologist  
5280804-2250



H. Roice Nelson  
Texas Professional Geoscientist #5120  
Dynamic Resources Corporation

### Appendices:

1. Picture of Highway 14 landslide and rocks above the road.
2. Topographic Model of Highway 14 and plateaus.