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Comments on the geology of dam sites on the Prosser River

by P. C. Stevenson

These comments are made after an examination of geological map information on the Prosser River area.

1. This site is mainly in dolerite but a small area of Triassic sandstone and shale lies just upstream from the dam wall and its boundary fault cuts across the right abutment parallel with the creek. Hazards are therefore known to exist and detailed investigation would be required.
2. The same fault as in (1) above throws Triassic sandstone and shale against dolerite, and lies parallel with the creek through this site. Valley alluvium floors the valley and conceals the exact relationship of the Triassic and dolerite. This appears to be a difficult but not by any means an impossible site geologically.
3. This site is wholly in dolerite, and no hazards are indicated on the geological map.
4. This site is wholly in dolerite, but a fault passes between the abutments parallel with the creek. The fault has acted as a conduit for small basalt eruptions which lie in the reservoir area but do not in themselves constitute a hazard. Not a first class site but dependant on the detailed nature of the fault.
5. Is wholly in dolerite. The fault in (4) crosses the reservoir area and would need examination. The section of the creek where the dam wall is proposed is aligned acutely to the known NW-SE fault direction for the area and may itself be fault-guided by a complementary fault set.
6. This site is mainly in dolerite. Two faults cross the reservoir area at right angles to the creek, and a patch of Triassic sandstone lies within it. None of these features is a real hazard and the site appears to be a good one.
7. The western dam wall at this site would be in dolerite. The eastern wall would be over or close to a dolerite-sandstone contact and this situation would need detailed examination. Much of the reservoir area is in Triassic sandstone in which soluble salts are known to exist. Detailed examination would again be required. A difficult site.
8. Wholly in dolerite, faulting probably present but as presently known a good site.
9. Wholly in dolerite, faulting probably present but as presently known a good site.
10. No detailed geological maps exist for this area, but a Triassic-dolerite contact lies across this site. Until further examination is possible it must be regarded as problematic.
11. This site is mainly in Triassic sandstone. Rapid variation in these rocks is usual and would require close examination. A site with unknown potential.
12. Site wholly in Triassic sandstone, as (11).
13. Site wholly in Triassic sandstone, as (11).
14. A site on a sandstone/dolerite contact with known faulting and concealed by river alluvium. Detailed examination required.
15. The dam wall is sited on faulted dolerite abutments, while Permian mudstone and Triassic sandstone form most of the reservoir area. A difficult but not impossible site.
16. The dam wall is sited in dolerite while the sediments in the reservoir area are not a hazard. A good site.
17. Upper and lower sites on MacLaines Creek. No detailed geological maps exist but these sites are
18. believed to be wholly on dolerite.

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