REPORT FROM THE CHIEF ENGINEER ON THE BEST METHOD OF BRINGING WATER FROM THE STONY CREEK RESERVOIR TO THE JUNCTION AT ANAKIE GAP, WITH REMARKS THEREON BY LIEUTENANT-COLONEL SANKEY, E.E.

PRESENTED TO BOTH HOUSES OF PARLIAMENT BY HIS EXCELLENCY'S COMMAND.

Sir,

I have the honor to communicate the results of an examination of the valley of the Stony Creek, below the present reservoir, for the purpose of ascertaining whether an additional water supply can be obtained without resorting to Wallace's Swamp, and whether a cheaper line of pipe-track is to be found than that of the existing aqueduct and tunnels.

I consider that there would be no difficulty in obtaining a supply, equal to that from the upper watersheds, by erecting a series of small dams in the lower part of the valley, and have marked on the annexed plan the site for the lowest dam that could be advantageously constructed with a proper fall to the existing main at the Ballan road.

The cost of constructing a reservoir at this spot, and laying a 11-inch main, as shown by the blue line, to supply three-quarters of a million gallons per diem, would be £19,400.

If, instead of allowing the water to flow down the creek to a service reservoir, as above proposed, a continuous main be laid from the present reservoir along the line of the valley instead of through the tunnels, as marked by the red line, the increased fall would allow the use of a 9-inch pipe at a cost of £15,608.

If the main be laid along the present aqueduct and through the tunnels, a 14-inch pipe will be required for the greater part of the distance, and the estimated cost is £26,646, in addition to the cost of completing the tunnels on Evans and Co.'s contract.

I have the honor to suggest that these estimates should be referred to Lieut.-Colonel Sankey for his consideration before a final decision is come to as to the manner in which the works of the Geelong Water Supply shall be completed.

I have the honor to be, Sir, Your most obedient servant,

E. DOBSON,
Chief Engineer.

The Honorable the Minister of Mines.

VICTORIAN WATER SUPPLY.

Comparative Estimates of the Cost of bringing Water from Stony Creek Reservoir to Junction at Anakie Gap.

<table>
<thead>
<tr>
<th>No.</th>
<th>Pipe-track along present line of aqueduct and tunnels—</th>
<th>2 s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1</td>
<td>5 m. 13 chs., fall 6 ft. per mile, 14 in. diameter, 3/4 in. thick</td>
<td>22,246 0 0</td>
</tr>
<tr>
<td></td>
<td>72 chs., fall 263 ft. per mile, 7 in. diameter</td>
<td>2,400 0 0</td>
</tr>
<tr>
<td></td>
<td>6 m. 7 chs.</td>
<td>£24,646 0 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. 2</th>
<th>Pipe-track following line of valley to mouth of Stony Creek, thence contouring the hill side to the Anakies—</th>
<th>2 s. d.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7 m. 33 chs., 40 ft. per mile, 9 in. diameter, 3/4 in. thick, 913 tons, at £16</td>
<td>14,608 0 0</td>
</tr>
<tr>
<td></td>
<td>98 chs., cutting track through gorge</td>
<td>300 0 0</td>
</tr>
<tr>
<td></td>
<td>Cutting through saddle near Ballan road</td>
<td>300 0 0</td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>£15,608 0 0</td>
</tr>
</tbody>
</table>
No. 3.

In this scheme the water is to be allowed to flow down the channel of Stony Creek to a small service reservoir about four and a half miles from Anakie Junction, whence it will be taken in a pipe joining present main at Anakie Junction.

- Earthwork
- Puddle
- Metalling on slope
- Sodding and sowing outer slope
- Preparing seat of dam
- Outlet pipes, about 300 ft. of 24 in. diameter pipe
- Hydraulic concrete, &c., round outlet pipe
- Outlet valves, well, &c.
- Service reservoir and outlet pipes, as per drawing

Total cost:

- £19,400

Approximate Estimate of Proposed Lower Dam on the Stony Creek.

Table:

<table>
<thead>
<tr>
<th>Description</th>
<th>Estimate Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthwork</td>
<td>£11,000</td>
</tr>
<tr>
<td>Puddle</td>
<td>£1,600</td>
</tr>
<tr>
<td>Metalling on slope</td>
<td>£400</td>
</tr>
<tr>
<td>Sodding and sowing outer slope</td>
<td>£890</td>
</tr>
<tr>
<td>Preparing seat of dam</td>
<td>£2,160</td>
</tr>
<tr>
<td>Outlet pipes, about 300 ft. of 24 in.</td>
<td>£329</td>
</tr>
<tr>
<td>Hydraulic concrete, &amp;c., round outlet pipe</td>
<td>£250</td>
</tr>
</tbody>
</table>

Add contingencies on account of works not specified: £5,000

Total: £24,913

W.S., M.D., 71 | 714. Mining Department, Melbourne, 6th September 1871.

In reply Cost of bringing Water from Stony Creek Reservoir to Junction at Anakie Gap.

Sir,

I have the honor to forward for your perusal the accompanying letter, and plan, and estimate, which I have received from the Chief Engineer for Water Supply, and to request that you will be so good as to favor me with your opinion in regard to Mr. Dobson's proposals.

I have the honor to be,

Your most obedient servant,

WM. McLellan,

Minister of Mines.

Office of Victorian Water Supply,
Melbourne, 5th September 1871.

Sir,

I am in receipt of your communication (W.S., M.D., 71 | 714) of the 6th instant, forwarding alternative proposals for dealing with the Geelong schemes by the Officiating Chief Engineer (papers here-with returned), and have the honor to offer the following brief observations thereon.

Scheme No. 3 (approximate estimate, £19,400) is for a series of minor reservoirs below Stony Creek capable of intercepting such an additional supply of water as would render unnecessary any connection with Wallace's Swamp.

As explained in my Report, series of small reservoirs in the same thalweg can never prove economical, and the same objection as that urged against the small pipe-head reservoir at the Anakies with reference to the probability of their becoming encumbered with debris from the valley above, must, I should fear, hold good.

It is not only, however, possible, but indeed in every way probable, that the proper site for the large supply reservoir which should have been constructed originally, instead of the existing Stony Creek Reservoir, is to be found at the lower site now selected by Mr. Dobson, and although I fear it is too late to fall back on this as an alternative, I still think it desirable that the details for some such project should be worked out, Scheme No. 2 (£15,698 approximate cost). This appears to me to hold out advantages over the alternative proposed in my Report, and should, I therefore consider, be examined and estimated for in detail.

Although it adds nothing to the supply, there can be little doubt that, if carried out economically, it would still afford the opportunity of several years' consolidation to the present open channels, and the distant prospect of this eventually becoming useful as an alternative, or rather additional duct, should necessity arise for such.

I have the honor to be,

Your most obedient servant,

R. H. SANKEY,

Lieutenant-Colonel, R.E.

The Honorable the Minister of Mines,

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VICTORIAN WATER SUPPLY.

Town of Geelong.

PLAN SHEWING
RESERVOIRS, CHANNELS, &c, STONY CREEK RESERVOIR TO ANAKIE GAP.

SCALE = 40 CHAINS TO 1 INCH.
VICTORIAN WATER SUPPLY.

Town of Geelong.

LONGITUDINAL SECTION OF PROPOSED LOWER DAM NO. 2 ON STONY CREEK.

Scale: 20 feet to 1 inch.

Length of Dam: 164 feet

Level of Top of Dam: 866.00

Water Level proposed: 880.00

Level of bottom of Outlet Pipes: 860.00

Diameter of Outlet Pipes: 2 feet

Approximate length: 150 feet

Approximate quantity of Earthwork: 11,000 cubic yards

Filling: 16,000 cubic yards

Metalling on Slope: 400 cubic yards
VICTORIAN WATER SUPPLY.

Town of Geelong.

CROSS SECTION AT CREEK OF PROPOSED LOWER DAM No. 2 AT STONY CREEK.

SCALE - 20 FEET TO 1 INCH.