

REPORT

on

July

PROPOSAL TO DRAIN THE ADAMS RIVER FLATS BY CON-
STRUCTING A DEEP TAIL RACE AT THE FALLS.

This proposal was made by one or more of the osmiridium miners and I believe that a meeting was held at Adamsfield and a petition arranged for transmission to the Hon. the Minister for Mines. As far as I can ascertain the petition has not been received and the only official information about the proposal is that contained in a letter from E. Bond on the 20th May.

However, I referred to the matter at the Public Meeting held at Adamsfield on June 28th and it was arranged that Mr. M.O'Reilly, the originator of the proposal, should accompany me on a visit to the Falls and the Adams River flats.

In accordance with this arrangement we made a brief examination of the Falls and the flats on June 29th.

The proposal is that a deep tail race should be cut along the valley of Adams River commencing from the Falls, the object being to drain the flats along the river and also enable tail races to be cut into the flats so that they could be worked. It is stated that 2,000 to 3,000 acres of flats occur along Adam River and that a considerable part of these flats contain osmiridium in payable quantities.

The following information has been principally obtained from my survey of Adamsfield in 1925. The recent trip to the Falls enabled me to see most of the recent work in the flats in that vicinity.

Adam River rises in the hilly country between the Saw Back and Ragged Ranges by means of two main heads - Adam River and Saw Back Creek. These unite and flow in a general north-north-westerly direction for three miles. The river is then joined by Main Creek and flows westerly for one mile to join Eve River on the top of the Falls.

Downstream from the Falls, the river has corroded a gorge in the comparatively soft slates and breccias of the Dundas series. At the Falls the rock is a hard massive quartzite of the Silurian System which has been further metamorphosed by the movements accompanying a major fault in the vicinity of the Falls. Upstream the Adam River valley is occupied by the easily eroded sandstones and limestones of the Silurian system. The origin of the Falls is due to the hard band of quartzite occurring there and resisting erosion while downstream the river has corroded a deep gorge in the soft slates and breccias. (The total fall from the top of the Falls to the River below is 250 feet, but there are cascades at the top and an accumulation of boulders at the bottom) At the same time, the soft rocks upstream from the Falls have been easily eroded and the river occurs in a valley of mature. Its grade is low and alluvial flats occur along its course. This maturity has also been assisted by the filling up of the valley with clays, sands and gravels of fluvio-glacial origin during the Pleistocene period.

Grade.

From my aneroid readings in 1925 it would appear that in the 4½ miles upstream from the Falls, the river does not fall more than 200 feet, so that its maximum average grade is approximately 6.6 inches per chain.

65
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Area of Flats.

From the geological map it is seen that Recent and Pleistocene deposits occur along the river for at least four miles above the Falls.. The width ranges up to 60 chains but would not average 40 chains. I estimate the area of these deposits as being little if any in excess of 1,000 acres. Moreover this includes not only the river flats but also the terraces further away from the river. These are particularly abundant along the western side of the river and would form one-third to one-half of the above area. Personally, I am of the opinion that a considerable portion of these terraces could, if payable, be worked under existing conditions without any tail race being cut at the Falls. Thus the area of the ground requiring a tail race is reduced to 500, ~~28~~ 667. acres.

Payable Nature of the Ground in the Flats.

The nature of the flats combined with the water occurring at shallow depths makes prospecting very difficult. On the whole, prospect shafts are not numerous and so it cannot be said that the flats &c. have been thoroughly prospected. The same difficulties prevent extensive workings when payable ground has been proved to exist.

In the narrow flat upstream from the Falls, there are quite a number of prospect holes and also a number of workings which were alleged to have given payable results.

In the Burnt Marsh on the eastern side of the River, no prospect hole has been sunk in it at a distance greater than one to two chains from its margin. Many workings have, however, progressed from its margins (especially from the western fall of Football Hill) into the marsh for one or two chains until eventually further working was impossible owing to difficulties of draining the workings and disposing of the tailings. Thus payable ground extends some distance at least into the marsh.

Deep ground occurs along the river when it is close to Football Hill. Very few holes have been sunk, but as above, workings have progressed into this deep ground for a short distance.

On the west side of the river opposite Football Hill, terraces occur with a gentle slope from the foothills of the Ragged Range to the river. These have been easier to prospect and a certain amount of mining has been carried out. Generally, however, it would appear that no great portion of these terraces is payable.

Generally the same conditions continue to the south and terraces occur rather than extensive flats.

Along and near Saw Back Creek and Adam River before their junction, workings are more numerous and important. These are situated along the streams e.g. Saw Back Creek and also on the terrace ground and in the numerous tributary creeks to the above main streams.

Depth of Ground.

The depth of the ground in the prospect holes and workings in the flat near the Falls ranges up to 8 feet. The bottom is mainly clay, but in places the bedrock of sandstone is reached.

In the Burnt Marsh the osmiridium bearing wash overlies clay and attains a depth of some 10 feet as far as worked.

Along the western fall of Football Hill the ground deepens rapidly under the flat of Adam River and attains a depth of at least 20 feet.

In general it may be said that the valley of Adam River is filled with sediments (Clays &c.) to an unknown depth which, however, probably exceeds 20 feet. As to whether payable osmiridium bearing wash is contained in these sediments has not been proved. They will be found to rest upon the bedrock of sandstones and limestones.

The uppermost bed of the above sediments consists of clay and overlying this there are gravels &c. containing osmiridium and attaining a depth of at least 10 feet.

Mining Engineering Aspects of the Proposal.

From the engineering and general point of view it is essential to know.

- (a). The extent of payable ground in the Flats. As shown above this cannot exceed 500 to 667 acres.
- (b). The fall along the Adam River. As shown above this is approximately 7 inches per chain.
- (c). The depth of the tail race at the Falls necessary to enable the race to command all or a portion of the payable ground in the Flats.

Using the above approx. figures and assuming a fall of 18 inches per chain in the tail race a race 20 feet deep at the Falls would only command a length of 22 chains, one 40 feet deep a length of 44 chains and one 60 feet deep a length of 65 chains. If possible, it would be advisable to have a steeper fall than 18 inches per chain and/would reduce the length of flat commanded by a race. this

- (d). The depth to bedrock along the proposed tail race and generally the nature of the rocks &c. which would have to be excavated. Upstream from the Falls, sandstones outcrop for 300 feet in the river bed. The surface is then occupied by alluvium but no doubt sandstones occur at shallow depths for some distance upstream.

Conclusions & Recommendations.

The available information tends to prove that there are 1,000 acres of possible osmiridium bearing land along the Adam River valley, of which probably 500 to 667 acres require a tail race to permit of the ground being worked. It has not been established, however, how much of this area contains payable ground.

The Adam River has a very low grade and so a tail race from the Falls would command only a short length of the flats. This aspect is very unfavourable to the proposal.

However, before any decision can be definitely made it is essential and advisable that the following four surveys should be made in the order indicated.

- (1). Level survey of the Adam River upstream from the Falls for at least three miles.
- (2). Survey of the river flats and terraces along this length, to determine their extent.

- (3). Boring or shaft-sinking campaign along the course of proposed tail-race to determine depths to bedrock where same does not outcrop.
- (4). Testing campaign by shafts to determine the extent of payable ground in the flats.

Surveys (1) and (2) could be made at the same time and the results considered before any further work is done. It is quite possible that, with the information then available, it will be possible to make a decision as to whether the scheme is practicable and economic.

The cost of the tail race could not be accurately estimated until surveys (3) and (4) are carried out, but it can be stated generally that depending upon the length and depth of tail race the scheme would cost anything up to \$10,000.

The points to be decided eventually are the cost of the tailrace and how much payable ground (and therefore how many claims) exists, after which it can be decided whether the expenditure is justified in view of the number of claims that could be worked from the tail race.

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