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Lambanesreykir fish farming station

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LAMBANESREYKIR FISH FARMING STATION

I have been asked to make some comments on the ideas of FFD as to providing cold water for the fish farming station at Lambanesreykir in Fljót. The amounth of water that will be needed is about 90 l/sec. The idea is to assemble the water in drainage pipes from gravel beds along the river Reykjaá and its tributary river Torfdalsá, 1 km east of the fish farming station.

The catchment area of Reykjaá river is in three tributary valleys east of lake Miklavatn, Hédinsfjarðardalur, Nautadalur and Torfdalur valleys. The water gathers to the river from numerous springs and brooks. In these valleys thick layers of loose sediments are found some of which are good aquifers, discharging groundwater to springs. These water bearing sediments are landslides, rock glaciers screes and river gravel. The bedrock of the area is dense and discharges very little of cold water.

The catchment area of Reykjaá river is 25 km2. With average precipitation of 12 mm/year the mean flow of Reykjaá would be 1 m3/sec. The flow is very fluctuating.

The greatest springs in this area are in the mouth of Torfdalur valley at 200 - 250 m above sea level. Upstream from there the river divides into two branches coming from the head of the valley high in the mountains. The main springs issue on a 40 m long line in screes of old rock glacier, south of the river. The discharge is 50 - 100 l/sec. Between the brooks are more springs discharging 20 - 30 l/sec. The temperature of the spring water is 2.0o C. On July 27 the flow of Torfdalsa was between 200 - 300 l/sec. approximatelyIts catchment area is about 5 km2 and with the 1200 mm/year precipitation the mean flow should be 200

l/sec. The critical minimum flow is not known but it is most likely somewhere between 25 - 50 l/sec.

'As stated above the water is expected to be taken it into a two brance system of drainage pipes. One branch of he system is a 250 mm drain pipe. It will be dug 1 m into the bed of Torfdalsa river from the river junction are Reykjaá and 100 m upstream. Another branch, composed of a 250 mm main pipe and four lateral drain pipes, will be placed along Reykjaá river from the confluence and 200 m upstream.

To me These ideas seem reasonable. A drainage system is certainly the best way of managing water under these circumstances. But there are a few things that I am worrying about. Firstly the drain pipe in the bottom of Torfdalsá. The river is flowing on a rather steep alluvial fan, the flow velocity is high and the erosional ability also. In floods the river might (or should I say will) sweep away the gravel from the pipe, loose as it will be after the digging, and the stream, brown and muddy, might break into the system.

The best area for managing water at Torfdalsá river seems to be between 100 - 200 m upstream from the confluence. I think it would be best to place the drain system there along the river close to the riverbank. It could cross the river in two or three places in riverbends. At the crossings the gravel should be firmly packed after the digging. A cover of some draincloth around the pipe might also be helpful. The pipe should be at 1.5 m depht in the gravel. It might be wise to have two drain pipes at Torfdalsá. Instead one pipe can be spared at Reykjaá river.

At Reykjaá river the circumstances seem to be rather unfavourate. Around pole no. 15 there are thick gravel layers. More upstream peat layers appear in the gravel and about 200 m from the confluence peat appears in the riverbed and at the riverbank the thickness of the peat is at least 5 m. At the other side of the river the gravel layers seem to be thicker. Here it will be necessary to bring in extra material or take the pipes across the river. The material can be taken in the gravel fields at Torfdalsá.

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