

**NÁTTÚRUFRAEÐISTOFNUN NORÐURLANDS**

*THE AKUREYRI MUSEUM OF NATURAL HISTORY*

P.O.BOX 580 - 602 AKUREYRI - ICELAND

**SEDIMENTS SUITABLE AS BUILDING MATERIAL IN THE  
VICINITY OF DYSNES AND ÁRSKÓGSANDUR**

**WATER SUPPLY AT DYSNES**

PRELIMINARY REPORT

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**By the request of Lónþróunarfélag Eyjafjarðar**

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PRELIMINARY REPORT

**DYSNES (see fig):**

A brief geological survey has been conducted in the vicinity of Dysnes in search of suitable building material. This report contains preliminary results, final report will be submitted later to Iðnþróunarfélag Eyjafjarðar:

**A (Gilsbakki-Sjávarbakki):**

In the southern part of the building site a small deposit of sand and gravel is found. Sand is major part of the deposition and thickness is 1-1.5 m. Volume of the deposition can be expected to be 5-10.000 m<sup>3</sup>.

**B (Selás-Reiðholt):**

Just above the main road to the north, two long, northerly orientated terraces are found. Both are deposited lateral to a glacier that moved out of Hörgárdalur. Meltwater and glacier rivers played an important role in the formation of these. In sections investigated in these, a mixture of sand, gravel and boulders was observed. Fine material (silt) was also observed. The major part of the deposits is coarse glaciofluvial sediment. Lenses of till (moraine) can be expected. Volumes of the depositions are at least, 4.500.000 m<sup>3</sup> for Selás and 2.100.000 m<sup>3</sup> for Reiðholt. The shortest distance to the building site is 2.5 km (Reiðholt) and 3.0 km (Selás). The distance by road to the southern side of the deposits is about 3.7-4.0 km. A park is located beside the main road, on eastern part of Reiðholt.

Below the main road a coarse glaciofluvial sediment was observed in small gravel pits. This is probable the lowest part of the terrace system. Exposures are poor, but greater quantity of till (moraine) can be expected.

**C (Möðruvellir area):**

A huge glaciofluvial terrace is observed in the mouth of the Hörgárdalur valley (Möðruvellir area). The terrace was deposited at a higher sea level, by glacial rivers at the end of the Last Glacial. The area is a well known source of building material. Most of the area is cultivated land and in the last decade many gravel pits have been closed due to nature conservation campaign by the inhabitants.

Only three of the many possible mining sites will be discussed here.

C-1. (isolated hill on Möðruvallanes):

This hill is separated from the main terrace system by a small bog. The deposit is made up of coarse sand, gravel and boulders. The volume of the deposition can be expected to be 200.000 m<sup>3</sup>. The distance from building site is 5.2 km and a short road has to be built from the main road. As the hill is marked landmark in the flat bogs surrounding it gravel pits in it will be clearly visible from a long distance.

C-2. (Spónsgerði):

Beside the main road is an open gravel pit. The section there is a 10 m mixture of coarse sand, gravel and boulders. The deposit stretches to the west of the main road, and the volume is at least 300.000 m<sup>3</sup>. West of the road the area is cultivated land and the farmhouses of Spónsgerði are situated in the western most part of the area. Distance to the building site is about 5.2 km.

C-3. (Björg):

In this part of the Möðruvellir terrace most of the present gravel pits are situated. In one of the pits a 10 m thick section of sand layers and gravel to boulders layers were observed. The major part of the material is gravel and boulders, and the biggest boulders are found in the lower part of the pit. The volume of the deposit is at least 1.000.000 m<sup>3</sup>. The average distance from the building site is 8.0-8.2 km. Old station and a storage place from The Telecommunication Company stands on part of the possible mining area.

D (Djúpárbakki):

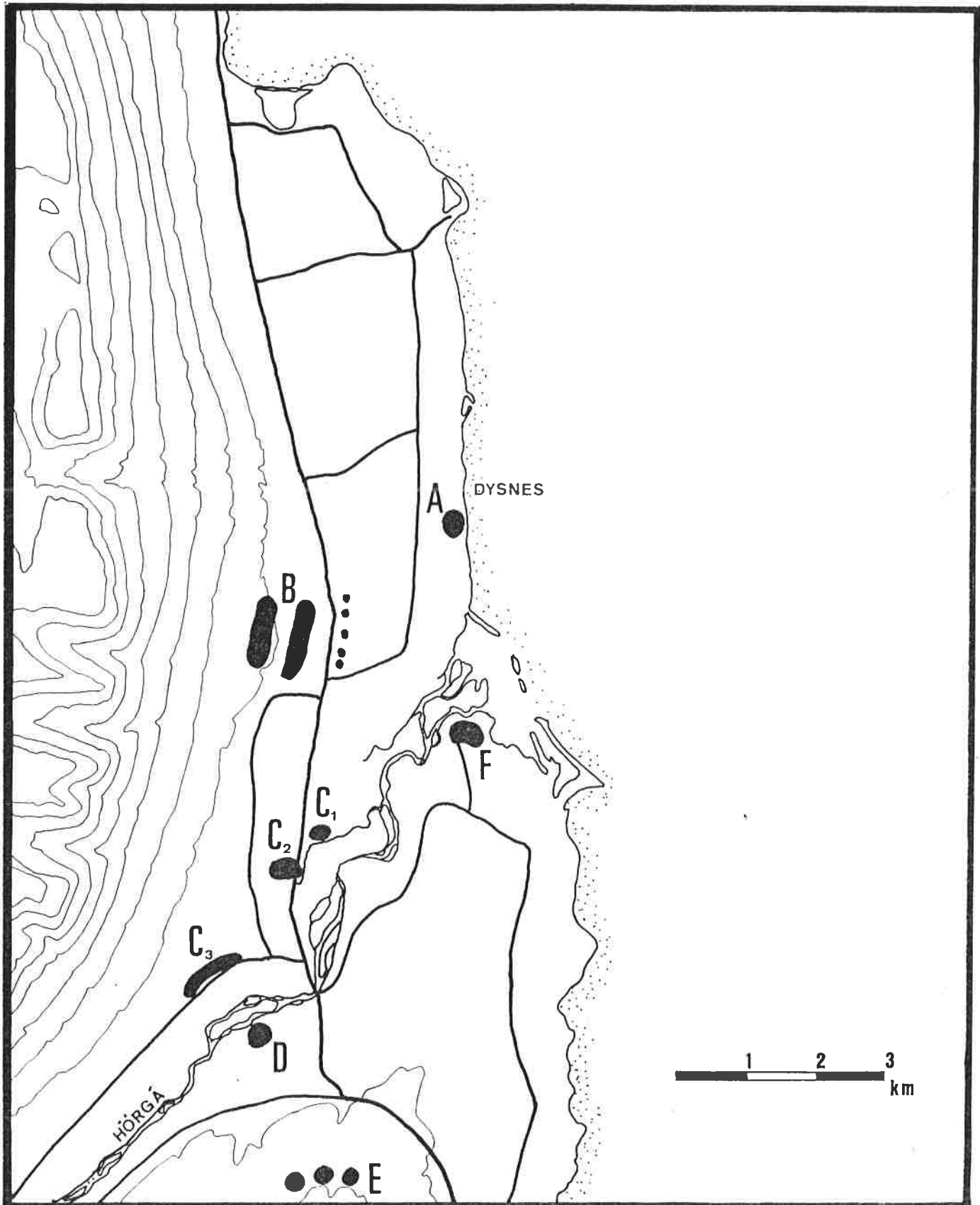
This is a terrace south of river Hörgá. An old gravel pit is in the terrace and there are exposed glaciofluvial sand, gravel and boulders. The deposit is at least 6 m thick and the volume is at least 120.000 m<sup>3</sup>. The distance from the building site is 7.8 km. Old garage stands on the terrace.

E (Moldhaugnaháls):

Beside the old main road over Moldhaugnaháls hills and terraces of glaciofluvial material have been observed. Further investigation is needed to define the nature and volume of the deposit. The distance to the building site is about 9.5 km.

F (Skipalón):

South of the delta of river Hörgá conspicuous glaciofluvial terraces are found. The material is well sorted sand and gravel. The deposit is at least 10 m thick and the volume is about 1.000.000 m<sup>3</sup>. The distance from the building site is 11.4 km (by road). The deposit is situated on the edge of a nature conservation area, and the owner has plans of closing the only gravel pit in it. A operating station owned by The Telecommunication Company stands on the terrace, near the gravel pit.



### ÁRSKÓGSSANDUR:

Building material at Árskógssandur is found as gravel, in the glacial outwash plain (sandur), where the factory site has been suggested. The sandur stretches from the mountains in the west to the shore. The gravel covers an uneven older surface of bedrock and till. At one locality, the gravel does not cover the till. At the locality in question, which is small, the till is compact and rich in sand, gravels and boulders. A hollow in the sandur, which every spring is occupied by a small pond is thought to have been formed by an ice raft buried in the gravel (dödis grop). The average thickness of the deposit is considered to be 4.0 m, but values up to 8.0-10.0 m have been observed. The volume of the deposit can be expected to be up to 18.000.000 m<sup>3</sup>. The soil cover in the area is 0.7 m thick.

Other suitable building is found in the area, but none of these deposits are comparable in quality or quantity to the sandur area.

### WATER SUPPLY TO DYSNES:

To answer that question one has to know what demands the industry makes to the water.

If the demands are low, water can be supplied by pumping from river Hörgá. The shortest distance to the river is 3.5 km. Hörgá is a river with relatively big and long drainage system. Some of the tributary rivers are glacial rivers, so Hörgá always contains at least some dissolved material in the summer. Every spring there are floods in Hörgá, and sudden floods in connection with sudden rainfall are common. The river is low in the winter and in a dry season.

If the demands to the water are higher, it is possible to solve the problem in the same way as the Water Supply of Akureyri, by pumping water out of the river gravel of Hörgá. Two locations seem to be prominent.

A) At Stóri Dunhagi, about 9.0 km from the building site.

B) At the alluvial fan of the tributary rivers Syðri and Ytri Tunguá, about 13 km from the building site.

In both cases embankments have to be built along the banks Hörgá. At Syðri and Ytri Tunguá, permanent channels for the tributary rivers have to be made.