

DERRY FELDSPAR QUARRY¹

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ABSTRACT

An outstanding development in feldspar at Buckingham, Quebec, where a large deposit of high-grade potash feldspar known as Derry Quarry has been opened up and placed on a shipping basis.

Introduction

For a considerable number of years the country north of Buckingham, Quebec, along the Lièvre River, has produced small tonnages of the highest grade feldspar known, and supplied to the dental trade. This feldspar was usually secured when mining for white mica, and from deposits of very limited size.

Early in 1920 an attempt was made to work one of these small deposits for material suitable for porcelain manufacture but it was found impossible to make ends meet. This led to prospecting new ground with the idea of discovering a large body, and in September work was started on the outcrop of what may now be described as the largest body of clean straight feldspar known on the continent.

In the various spar districts there appears to be but one deposit of outstanding merit surrounded by a number of small bodies subject to greater variation. This also seems to be the condition in the Buckingham district.

Location

The Derry Quarry is located in the hills above the Lièvre River valley near Glen Almond some nine miles north of the town of Buckingham, and about thirty miles from Ottawa. It is accessible by a good motor road, or by steamer within two miles in summer, and by sleigh in winter.

Geology

The deposit is part of a large intrusive mass of pegmatite that can be traced across country for a mile or more with the greatest development of crystallization on the south half of lot 8, range 1, of the township of Derry. On the south end of this lot the pegmatite has a width of one hundred and fifty feet, and differentiation of spar has taken place on a huge scale. The outcrop shows a width of 50 feet and a length of 300 feet of clean spar crystals, individuals attaining dimensions of 30 feet in length and up to 15 feet diameter.

A cross section of the deposit is somewhat as shown in Figure 1.

Quartz is present in very subordinate amount, approximately 1.5% by actual tonnages separated, a most remarkable record when compared with the general run of such dikes.

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Accessory minerals, such as tourmaline and mica, are present only in small amounts near the walls and can be easily separated in the mining operation.

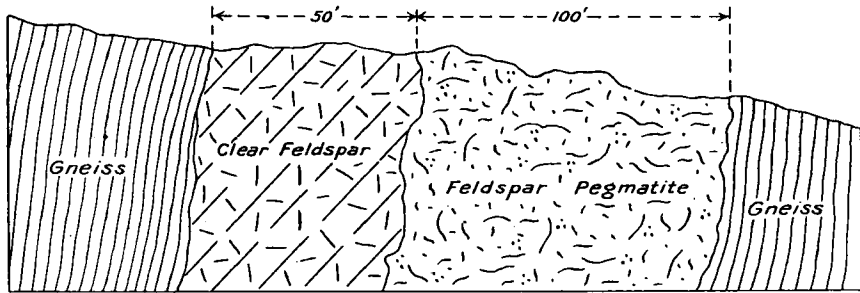


Figure 1. Cross section of Derry Feldspar Quarry, Buckingham, Quebec

The feldspar is cream to buff colored and typical analyses of the grade of material shipped are as follows:

	A	B
Silica.....	65.09	65.80
Alumina.....	18.85	19.74
Iron.....	0.029	0.031
Lime.....	0.21	0.11
Potash.....	13.42	12.32
Soda.....	2.11	1.74

(Analyses by Booth, Garrett & Blair, Philadelphia)

Quarry Operation

The present opening is in the form of a side hill cut and with a working face 50 feet high no hoisting will be necessary for a year or more.

Great pains are taken to maintain the original purity of the material. The surface six feet are quarried separate to ensure minimum contamination from seepages. The central 30-40 feet are blasted and mucked out before the wall zones are touched.

Holes are drilled across the face to depths of 8-14 feet and two to three benches carried forward. Each hole is sprung to take the necessary charge of dynamite.

In the pit each man uses a stone fork (no shovels) and as the spar is loaded on flat cars two inspectors watch it for the elimination of any objectionable material that may get past the muckers. The cars are dumped into a 100 ton storage bin to pass by gravity to the wagons or sleighs as required.

In the summer wagons take the material to the river bank where it is dumped into another loading bin and to a 40 ton scow to be transported

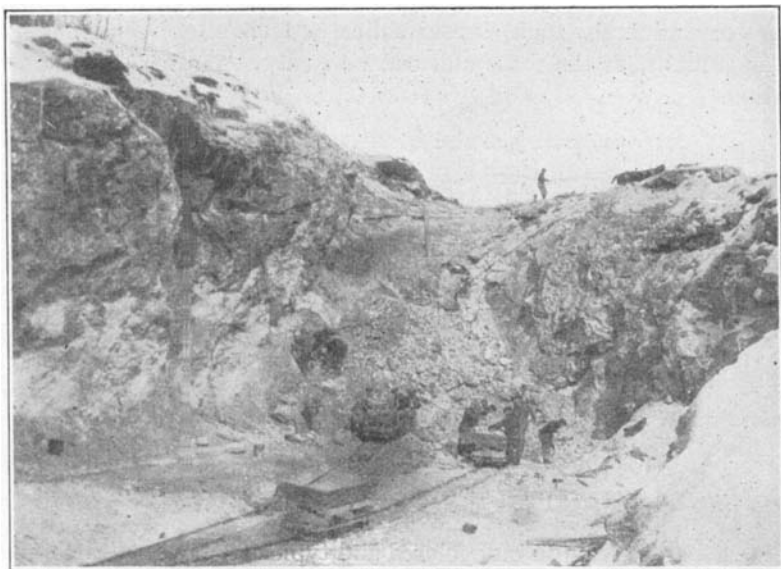


FIG. 2.—Face of quarry, 1921-22.



FIG. 3.—Ore bin at mine.



FIG. 4.—Summer transportation on Lièvre River.

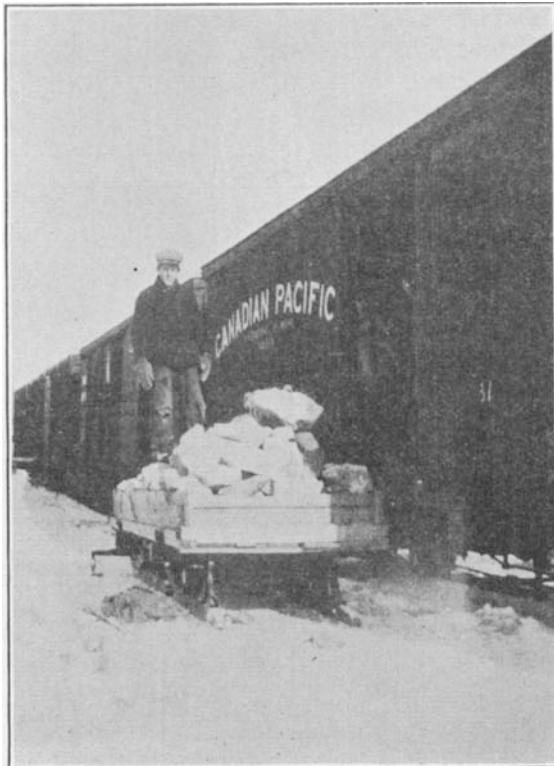


FIG. 5.—Winter transportation.

down stream to the railroad siding at Buckingham. Here a suitable derrick is provided for loading the railroad cars or placing in stock pile. The piling ground is covered with a plank platform so that from the time the feldspar is loaded out from the quarry to the time it is shipped every effort is made to keep it scrupulously clean.

The fine material or waste material from the quarry finds a ready market as a stucco dash giving a rich cream to buff tone to a building. The quartz is sold locally for use as a flux in the electric furnace manufacture of phosphorus and its compounds.

Hence the Derry quarry stands unique in having an abundance of the highest grade feldspar, a minimum of accessory minerals, and no waste material.

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