Iceland Spar Claims — NAME / OLD NAMES

Optical Calcite — PRINCIPAL ORE / MINOR MINERALS

23S T | 43E R | NE¼ 2B S

Walkem ..... COUNTY

..... AREA

3600 ..... ELEVATION

..... ROAD OR HIGHWAY

..... DISTANCE TO SHIPPING POINT

PUBLISHED REFERENCES

Calcite occurrences near Owyhee Reservoir - Lowry 43

MISCELLANEOUS RECORDS

PRESENT LEGAL OWNER (S) Wm. Matisia — Address 1410 N. 11th Boise Idaho

M.P. Lowry — Boise, Idaho

OPERATOR .....

Name of claims	Area	Pat.	Unpat.
Iceland Spar #1			C
	4	2	C
[redacted]			
Iceland Spar #3			C

Name of claims	Area	Pat.	Unpat.

EQUIPMENT ON PROPERTY

MI-21

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

Reported by N.S. Wagner
Date of Examination
April 9, 1943.

Name of Property Iceland Spar Claims, Malheur County.

Lessee W. M. Schmeykal and F. L. Muckenstrum, 919 N. 19th Street, Boise, Idaho.

Owner Wm. Mativia and M. Tonning of Boise, Idaho.

Area & Location Three full claims recorded at Vale, Oregon, located on the north side of Dead Horse Canyon which is south of Dry Creek, or T. 23 S; R. 43 E., (Mitchell Butte Quad).

Distance from the property to Dry Creek is 4.8 miles, the road, for the most part, being the creek bed. Distance from Dry Creek to Twin Springs is 4 miles, over rough, highly washed road. Distance from Twin Springs to Vale--Burns highway 26 miles over fair desert road.

History A reported boom occured here about 15 years ago at which time claims were taken up on several deposits containing clear calcite crystals found throughout the district at large. The rush died down, presumably because the market was being amply supplied with crystals from other deposits. However, it is further reported that about ten years ago, several thousand dollars worth of this spar was taken out and sold to Germany, but no records are at hand to confirm this. Supposedly, also samples sent in by various interested parties have been evaluated as optically satisfactory by the users, but again, substantiating data is lacking.

The work that has been done on this property consists of several shallow pits and a cut on the vein, most attention apparently having been devoted to surface outcroppings.

Geology Three strong, well defined veins of calcite are to be seen on the property. These are roughly parallel. The largest and best exposed vein occurs near the crest of a hillside, along wich it extends for several hundred feet, striking S. 65 E. It is 2 to 4 feet thick, dips 75° to the southwest. Outcrops tend to form cliff-like faces, sometimes as high as 20 feet, behind which errosion of the remainder of the hill has been largely restrained.

The vein is walled by essentially flat lying sediments which, for the most part, consist of rather fine grained sands and shales with some conglomerate composed of small pebbles, and probably some tuffaceous members scattered through the series, the whole of which is very loosely consolidated. Several species of fossil shells were collected, but these have not been classified as yet, nor the age of the country rock determined within closer bounds than that it is late tertiary.

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There are many excellent sections across the vein and wall rocks. These show the vein fracture to have been formed with a minimum of movement on the part of the walls as compared with the slipping and shearing encountered in most veins. Apparently the chief movement was in a direction at right angles to the plane of the fracture, representing a simple tension, as the delicate banding of the sediments shows no bending or drag on approaching contact with the vein material. Likewise several little stringers, a quarter of an inch or so in thickness were to be seen running parallel to the main vein and extending unbroken for several feet in depth with the sedimentary bands matching across them, and no evidence of drag appearing. In fact, relief from stress in this direction must have been very easy. Otherwise, appreciable contortion would have been imposed upon the bedding by the tremenduous forces of crystalization which must have accompanied the development of the vein.

The vein matter itself is composed practically entirely of calcite crystals, which are occassionally fractured and recemented by a finely crystalling matrix. These crystals are, for the most part, small, densly packed, variously oriented and intergrown, but locally there are areas 10 to 15 feet in length along the vein in which crystals, often averaging 4 to 5 inches through, are found, with individuals sometimes attaining even greater dimensions. Like the smaller ones, these are intimately intergrown.

The whole outcrop, exposed as it is to the weather, shows but few clear crystals, most of them being thoroughly fractured internally, cloudy and stained. Some clear, or partially clear crystals are to be seen however, and some of the dirtiest looking ones with their cleavage lines etched into relief and stained, prove to be very clear inside. One such specimen examined was so oriented that a corner was successfully chipped off without further marring the crystal. This afforded a clean view back into the vein for a full five inches, but became completely opaque after a small part of the work necessary to extract it had been accomplished.

Conclusion

Where as this occurrence of crystals apparently differs markedly in many respects from known deposits of optical spar which latter are usually in clay filled cavities associated with basic igneous rock, said difference does not necessarily preclude the possibility of optical spar being found here. However, internal stresses produced on any one crystal by the growth of so many in such a restricted area, as is the case here, may be found to have had a detrimental effect on its optical properties.

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Therefore, the vein should be investigated at depth to ascertain whether or not the ratio of potentially clear, usable crystals is greater below the zone of weathering, and whether or not they possess the necessary optical properties.

In this connection, the technique of extracting crystals without injury is going to prove the most challenging problem. Should optically satisfactory crystals not be found in the more massive parts of the vein, or should it not prove possible to extract a sufficiently high percentage of these without damage, attention should be given to such areas where the vein is thin and poorly developed, and where comparatively few crystals have formed, on the theory that possibly there was less interference with the growth of individual crystals in such areas as compared to the more conspicuous sections of the vein in which thousands interlocked to form a massive vein. The freedom for unrestricted crystal growth afforded by such areas is more nearly comparable to that prevailing in the residual clays and clay filled cavities of the typical deposits, and it may be possible to extract crystals from such areas more successfully. However, from the lack of deformation noted in the soft sedimentary walls, it would seem that even the crystals in the thick parts of the vein developed in an environment wherein confining pressure was at a minimum, and therefore it should not be entirely unreasonable to expect some undeformed crystals there.

H. S. Wagner

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View looking west showing section of vein and [illegible] and in particular, the lack of [illegible] on the bedding planes of the wall sediments.

Another view showing same features but looking east and including two small stringers in the hanging wall. Only a portion of the main vein shows in the extreme left of the picture.

This illustrates the massiveness and intergrowth of the crystals at one of the places where they attained appreciable size.

BAUSCH & LOMB OPTICAL CO.

July 16, 1942

ICELAND SPAR OR CALCITE SPECIFICATIONS

QUALITY

Crystals must be colorless and absolutely transparent and completely free from flaws, fractures or cloudy inclusions. The material must not show any internal iridescence or rainbow colors due to incipient cracks along cleavage planes.

PHYSICAL PROPERTIES

One characteristic is its perfect rhombohedral cleavage. It splits in three directions at oblique angles. Every cleavage, regardless of size, possesses this rhombohedral form.

MINING METHOD

Removal of calcite from its source should be either by drilling and wedging or by the use of a very thin chisel and a composition hammer. Do not use explosives at any time, as this fractures the crystal.

SIZES REQUIRED FOR BAUSCH & LOMB OPTICAL CO. USE

The following are minimum sizes and are established on the basis of finished prisms:

MINIMUM	PREFERRED
10mm x 25mm x 25mm	12mm x 30mm x 30mm
18mm x 18mm x 30mm	22mm x 22mm x 30mm
25mm x 25mm x 25mm	Regular Rhomboid
40mm x 40mm x 40mm	Special Size Rhomboid

We prefer to cleave calcite to size, therefore crystals should be left in as large pieces as possible.

PACKING

Each crystal should be carefully wrapped and packed to prevent fracture.

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

Iceland Spar

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Mines
Moscow, Idaho

January 2, 1943

Mr. W. M. Schmeykal
919 North 19th Street
Boise, Idaho

Dear Mr. Schmeykal:

I have received a report on the calcite crystal which you recently sent me. Our microscopist at Salt Lake states that the crystal is not of optical grade because of fractures and imperfections. There is, however, a possibility that the deposit from which the crystal was obtained may contain optical calcite.

The requirements for optical calcite, as quoted by Bausch and Lomb Optical Company, call for crystals at least an inch by 1½ to 2 inches in size. They must be free from all fractures and inclusions and transparent. They offer $40 a pound for suitable crystals. Calcite crystals of lower grade are of no particular value.

The mining of optical calcite should be done with extreme care in order that the crystals be not deformed by strain or pressure. I suggest that, if you find other specimens which you think might be of optical grade, you submit them direct to Bausch and Lomb Optical Company, Rochester, New York.

CONFIDENTIAL

Yours very truly,

S. H. Lorain
District Engineer