

FILE NAME: Johnson & Johnson (JAJ)

DATE: 1961 June 6

DOC#: JAJ037

DOCUMENT DESCRIPTION: Letter from Battele Memorial Institute to J&J with final Comment that Tremolite is "a decidedly objectionable needle-like particle."

# Battelle Memorial Institute

505 KING AVENUE COLUMBUS 1, OHIO

June 6, 1961

Mr. W. H. Ashton  
Research Department  
Johnson and Johnson  
New Brunswick, New Jersey

Dear Mr. Ashton:

This letter briefly summarizes my observations made during May at the Wight Mine, Gouverneur, N. Y.; the Hammondsville, Vt., deposit; and subsequent petrographic examinations of the ores and beneficiation products. The following covers only such information as I believe is of immediate consequence to you. A detailed geological and mineralogical report will follow if you so request.

## THE GOUVERNEUR, N. Y., DEPOSIT

Talc deposits in the Gouverneur belt constitute the largest in the Western Hemisphere. In most of the Gouverneur deposits talc is subordinate. The ore is tremolite-anthophyllite schist which has been serpentized and steatized. The ore contains tremolite, anthophyllite, talc, serpentine, hexagonite, quartz, carbonates, micas, pyroxenes, and opaques. The talc belt is some six miles long, extends down dip over 2000 feet, and has widths over 400 feet. The particular talc of interest to Johnson & Johnson is a tremolitic platy talc in the Wight Mine. This facies is objectionable in the International Talc Company product and is avoided in mining. The body is 12 to 14 feet thick, extends from near surface through the 6th level and is presumed continuous along the strike of the ore. Although no attempt has been made to block out the platy ore, I was able to see a probable 100,000 tons, 300,000 tons can be estimated from drilling data and intersections of the present workings. Based on information provided by the International Talc Co., the reserves may be in excess of 1/2 million tons. The tonnage figures are only rough estimates. The ore reserves and the uniformity of the ore would have to be proven by drilling.

## Flotation Concentrate from Gouverneur Talc

The ore contains both tremolite and platy talc as major components. The flotation concentrates you submitted contained:

DEDICATED TO THE ADVANCEMENT

EXHIBIT

28

# Battelle Memorial Institute

Mr. Ashton

-2-

June 6, 1961

|                        |                   |
|------------------------|-------------------|
| Total talc             | 96-97% (by count) |
| Platy talc             | 93                |
| Nonplaty talc          | 3                 |
| Free tremolite, others | 3-4               |

However, the talc platelets contain abundant fine tremolite which is liberated on successive fine grinding. Although the beneficiated talc is of high quality, it would appear that 4 or 5 per cent tremolite is the minimum which would be practically obtainable without extensive changes in the proposed beneficiation procedure.

## THE HAMMONDSVILLE, VT., DEPOSIT

The ore previously mined at the Hammondsville deposit was off-color, highly contaminated, and unsuitable for producing high-grade talcum. When the old talc body was exhausted, mining proceeded underground and struck a white platy talc, so far unique in Vermont. The character of the new ore was reportedly not recognized until some two months ago. The ore is enclosed in quartz-mica schist, consists of some 70-75 per cent platy talc with inclusions of coarse carbonate grit (about 25 per cent) and accessory minerals.

The white, platy ore has not been blocked out, however, about 100,000 tons can be visualized from the present workings. If the talc body is as large as visualized by the Eastern Magnesia Talc Co., there may be as much as 1/2 million tons or more. The tonnage figures are only rough estimates. The ore reserves and the uniformity of the ore would have to be proven by drilling.

## Flotation Concentrate from the Hammondsville Ore

Samples of the Hammondsville ore were processed by flotation by the Eastern Magnesia Talc Co. The flotation concentrate contained:

|                    |                   |
|--------------------|-------------------|
| Total talc         | 97-98% (by count) |
| Platy talc         | 96                |
| Nonplaty talc      | <2                |
| Carbonates         | <1                |
| Rutile (liberated) | <1                |
| Altered amphiboles | trace             |
| Opakes             | trace             |
| Others             | <1                |

Examination of several specimens from different parts of the mine shows most of the ore to be free of rutile. Some specimens show 4-5 per cent rutile. On insufficient evidence the rutile appears to be traceable, for the most part, to a specific stoppage on the footwall.

# Battelle Memorial Institute

Mr. Ashton

-3-

June 6, 1961

## EVALUATION

There are now two known domestic sources of talc ore which may be beneficiated to high-grade talcum and which appear to have adequate reserves. The flotation concentrates produced from the platy Gouverneur ore and the new Hammondsville ore have very good slip, color, and are primarily composed of single crystalline sheets.

Before a final conclusion is reached, the following should be considered:

- (1) The reserves of either mine should be blocked out and core drilled to establish uniformity.
- (2) It should be established whether or not the tremolite content of the Gouverneur concentrate, if prohibitive, can be removed economically by further beneficiation.
- (3) It should be established how the rutile is distributed throughout the Hammondsville deposit.
- (4) The Chester, Vermont, area should be surface-explored to determine if other similar deposits occur. The Carleton Quarry and the Vermont Talc Company quarry should be examined.

## RECOMMENDATIONS

Excluding the matters of reserves and economics, the Hammondsville deposit appears preferable mineralogically inasmuch as the talc platelets are flatter and more equidimensional, and rutile and carbonate are known to be removable by beneficiation. Tremolite, which is present in the Gouverneur product, is a decidedly objectionable needle-like particle.

Very truly yours,

*William Lee Smith*

William Lee Smith  
Principal Geologist

WLS:cw

Triplicate

cc: Dr. W. H. Lycan  
Mr. J. N. Masci  
Mr. C. V. Swank