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Texas Miners Boost Talc Output

BY

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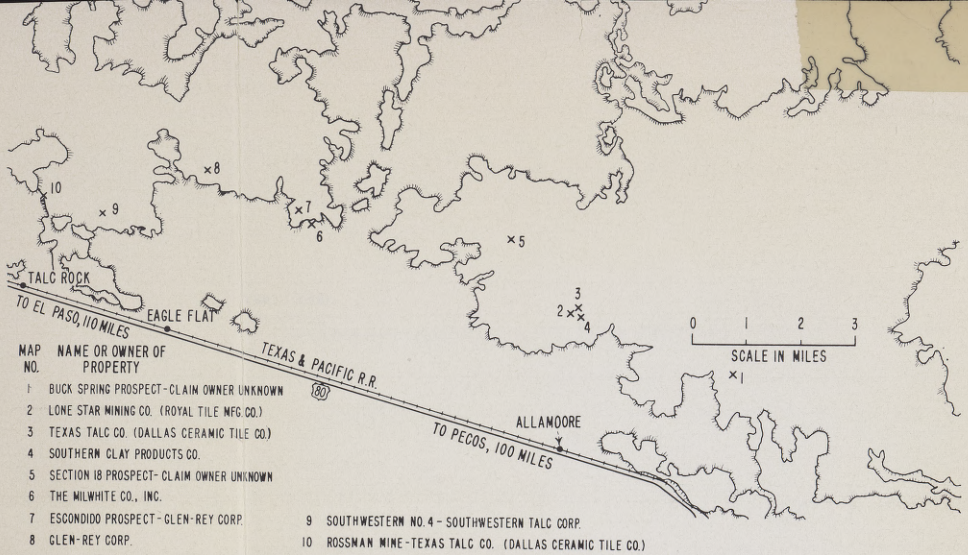

SOME HUDSPETH TALC operations require little stripping, and at the others loose overburden is removed without blasting.

Texas Miners Boost Talc Output

PETER T. FLAWN

TEXAS' HUDSPETH COUNTY talc mining, begun in 1952 when Southwestern Talc Corp. carried out pioneer exploratory operations, has expanded during the last five years and can today claim six active operations. These include (see map): (1) Southwestern Talc Corp., Llano, Texas, (2) West Texas Talc Corp. (properties sold to the Milwhite Co., Inc., Houston, in October 1957), (3) Texas Talc Co., a subsidiary of Dallas Ceramic Tile Co., (4) Lone Star Mining Co., subsidiary of Royal Tile Manufacturing Co., Fort Worth, (5) Southern Clay Products Co., also known as Christian & Sons, Gonzales, Tex., (6) Glenn-Ray Corp., (Georgia Talc Co., Chatsworth Georgia, operator).

Deposits occur within the Precambrian Allamoore formation in an area about 20 miles long in an east-west direction and 5 miles wide in a north-south direction. The Allamoore is a highly deformed and variably metamorphosed sequence of interlayered limestone and volcanic rocks, including thin beds of phyllite. The phyllite is commonly talcose—the amount of siliceous and calcareous impurities within the talc bodies shows wide variations. Phyllite units are mostly steeply dipping layers with a maximum thickness of about 200 or 300 ft which pinch and swell for a strike distance of up to several thousand feet. At Rossman mine (see map), two talc bodies occur as nearly vertical beds enclosed by cherty limestone members of the Allamoore formation. Except in the immediate vicinity of the talc, these limestones do not appear to be appreciably dolomitic. The main body is a tabular wedge-shaped unit about 7,000 ft long; it strikes about east-west, dips 70 deg to 85 deg south, and tapers from a width of 400 to 500 ft on the west to 100 to 200 ft on the east where it is cut off by a thrust fault. Talc is in contact with a small mass of diabase of uncertain age at orebody's west end.*

Problem of talc's origin has not yet been solved. The Allamoore formation is composed mainly of interlayered cherty limestone and volcanic rocks, and beds of cherty carbonate rock are known to occur within bodies of talc. Pinching and swelling beds of foliated talc are concordant in the sedimentary sequence and show little variation over a strike distance of about 20 miles. There is no indication of origin through hydrothermal alteration of basic igneous rock either in the shape of the bodies or in the form of unaltered relicts. Detailed study of the talc bodies is necessary for a conclusive statement on their origin, but information available to date suggests an origin through alteration of sedimentary or pyroclastic rocks such as dolomitic marl or magnesium-rich tuff.

Mining methods.—Hudspeth County operations presently consist of a number of open pits which are still relatively small, shallow excavations; some quarries are planned systematic extractions utilizing from two or three benches with working faces ranging from less than 5 ft to 12 or 15 ft high. Other operations appear to consist of rather aimless earthmoving efforts with waste piled on extensions of the talc body.

Talc bodies are first stripped and cleaned by bulldozer. Some properties originally displayed relatively clean surface exposures and required little stripping; in other localities up to 30 ft of overburden has been removed. Fortunately, this overburden is mainly composed of soft unconsolidated alluvial or colluvial material and does

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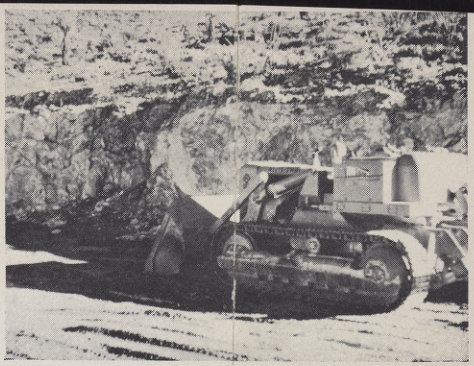
*King, P.B., and Flawn, P.T., (1953) Geology and mineral deposits of pre-Cambrian rocks of the Van Horn area, Texas: University of Texas Publication 5301, pp. 170-172.

THIS PIT, Southwestern Talc's No. 4, is currently producing 40 to 50 carloads per month of ceramic-grade talc.



TEXAS TALC CO.'S surface outcrop is broken and loaded by a bulldozer mounted single tooth ripper and front loader.

not require blasting. Actual quarrying methods vary at different pits. One company employs a bulldozer equipped with a single-tooth ripper to prepare a surface for digging with a power shovel. In other operations talc is gouged from a face by power shovel without any previous breaking by blasting or mechanical methods. At still other pits the talc is broken by blasting with 80% dynamite prior to digging. Shovels in current use are of either ½ or ¾-yd capacity.

Region's main mining problems are caused by surface contamination and the sporadic occurrence of beds and lenses of chert and/or carbonate rock within the talc body. Upper part of orebody at and near the surface is a soft light gray material commonly veined by caliche and containing cracks and fractures penetrated by earth and vegetable matter. At greater depths the talc is darker, harder and contamination is not a problem. Beds and lenses of chert and carbonate rock within the talc are extracted and dumped. Some rough picking of deleterious material at the quarry is necessary to maintain a high quality product.

Crude talc is loaded directly into trucks without any secondary blasting or crushing and then transported to the railroad. All existing pits are within a few miles of the Texas & Pacific track. Loading is effected at Allamoore, Eagle Flat, and at a new siding known as "Talc Rock." Greater part of district's tonnage has moved through the Talc Rock spur where 12-yd capacity trucks dump directly from a ramp into boxcars, which carry approximately 50 tons of material. At Allamoore and Eagle Flat crude talc is put into boxcars with a front-end loader.

Production.—Production schedules in Hudspeth's talc district range from the 40 to 50 cars per month shipped by the Southwestern Talc Corp., to desultory shipments of a few cars per month from smaller operations. In October 1957, the following production was credited to the district: 1. Southwestern Talc Corp.—40 to 50 cars per month from their No. 4 pit. 2. Texas Talc Co.—12 cars per month, 8 from Rossman mine and 4 from the Chandler and Maloney pit. 3. Southern Clay Products Co.—10 cars per month from their section 8 pit. 4. The Milwhite Co., Inc.—15 cars per month from their section 28 property. 5. Lone Star Mining Co.—idle for more than a year; previously shipped about 7 cars per month from their section 8 pit. 6. Glenn-Rey Corp.—not producing; only a small previous production, mostly for testing purposes.

As of October 1957, 2,004 cars had been loaded and shipped from Talc Rock at the western end of district. This represents output from Southwestern Talc Corp. and the Texas Talc Co., and amounts to a total of 100,200 tons from two properties—the Rossman mine (Loyce No. 1 and 2 claims) and Southwestern No. 4. It comprises about 85% of area's total output. Production from the Dees ranch area to the east is not so well documented. It is estimated that eastern properties achieved a production of 20 cars per month in 1957, 10 cars per month in 1956, and a total of 25 cars in 1955 for a total output of 18,500 tons. Entire production of Hudspeth County district to date is in the neighborhood of 120,000 tons.

Costs and markets.—Because of easy open-pit near-surface mining conditions and proximity to railroad, Hudspeth County's talc district enjoys very favorable economics. Costs of mining, transportation, and loading into cars range from $1.75 to $3.00 per ton. Some of the talc is sold crude and some is freighted to eastern points and milled. Southwestern Talc Corp.'s mill is located at Llano, Tex.; Southern Clay Products processes the Hudspeth County talc at Gonzales, Tex. The final product is sold ground and sacked in 50-lb bags.

Nearly 90% of district's output is sold as ceramic talc and goes into the manufacture of wall tile; about 10% is marketed as insecticide carrier.

General market area ranges from Monterrey, Mexico, which absorbs approximately 25% of the area's entire output to as far east as Mississippi and Tennessee. The Texas market includes San Angelo, Santa Anna, Woodville, Tyler, Dallas, Fort Worth and Brownsville. Hudspeth County talc is a superior ceramic talc with excellent pressing, early strength, and firing characteristics.

Future.—District is in its infancy, and current operators are developing their own markets. Although a few properties have been explored by drilling, there has not yet been a comprehensive study made of the district's reserves. They appear to be large. All known properties could sustain a higher production if the market permitted. According to production curves, a substantial increase in output is indicated for the next five years.

The author wishes to express appreciation to Mr. J. B. Upton of the Southwestern Talc Corp. and Mr. Cary Ard of the Texas Talc Co. for generously furnishing information on their operations, and to Messrs. Robert and Charles Dees for data on the talc operations on the Dees ranch area in the eastern part of the district.