



STATE OF OREGON

INTEROFFICE MEMO

TO: DON

DATE: MAY 29, 1990

FROM: FRANK R. HLADKY

SUBJECT: LININGER TRU-MIX INC.: SAND, GRAVEL, CRUSHED ROCK
OPERATIONS IN MEDFORD VALLEY

On May 18, I visited Lininger Tru-Mix's (LTM) Kirtland Road and High Banks Road facilities near Central Point, hosted by general manager Bud Lininger. The tour included sand and gravel milling and quarry operations and rock quarrying operations. On May 23, Tom and I revisited the Table Rock (basalt)-gravel contact in one of LTM's pits accompanied by Rogue Aggregate manager Bill Leavens. The same day we visited a competitor, Crater Sand and Gravel, accompanied by owner Don Savage. Investigation of principal producers is on-going.

Location

LTM's Kirtland plant is located north and slightly west of Central Point in section 49 (20), T. 36 S., R. 2 W. Sand and gravel quarries are located at the plant and in sections 17 and 45 (16). Access is via the northernmost I-5 exit to Central Point, then north on Blackwell Road to Kirtland Road where the plant is located.

Current Status

LTM is the number one producer of sand and gravel in the Medford Valley, providing about 70% of the valley's needs according to Mr. Lininger, who also oversees LTM's affiliate, Rogue Aggregates Inc. which produces crushed rock. Combined sales for 1989 totaled approximately \$22 million (April-May, 1990, The Miner's News).

History

The Lininger family started a sand and gravel company bearing the family name in the 1920's. The Lininger family founded Rogue Aggregates Inc. In 1988 M. C. Lininger and Sons, Inc. merged with Tru-Mix Construction Co. to form LTM. In April, 1990 Inspiration Resources Corp. (IRC) purchased LTM and Rogue Aggregates. The Lininger family now manages the operations they previously owned.

The Medford Valley's rock products industry is now in large measure integrated within an international mining network. Luxemburg-based Minorco holds a majority interest in New York-based IRC. Minorco, in turn, is the investment arm of Harry Oppenheimer's conglomeration of mining companies which

include such South African giants as Anglo American Corporation (gold) and DeBeers (diamonds).

Local Geology

LTM's sand and gravel deposits include upper and lower Quaternary floodplain deposits, which are progressively more compact with depth. Crushed rock is quarried from basalt flows from the Roxy Formation in the Medford Valley.

Ore Bodies

Holocene and Pleistocene(?) fluvial sand and gravel up to 80 feet thick comprise LTM's resource. Mining is currently proceeding to about 50 foot depths.

Reserves--CONFIDENTIAL

Mr. Lininger quoted an outside engineering report which the author was allowed to view:

Sand & Gravel	50 million tons
Quarry rock	35 million tons

LTM holds 583 acres of land zoned for sand and gravel in the vicinity of its Kirtland Road plant; 120 acres are north of the Rogue River. Reserves are based upon average thicknesses of about 50 feet although gravel depths locally exceed 80 feet. LTM also holds 600 acres of quarry rock (basalt) with a minimum accessible thickness of 40 feet.

Mr. Lininger estimated total Medford Valley sand and gravel production for 1989 at between 1.4 and 1.6 million tons and provided the following approximate LTM/Rogue production figures for sand, gravel and crushed rock:

1988 (last 7 mo)	800,000 tons
1989	1 million tons
1990 (forecast)	800,000 tons

Analysis and Summary

In 1970 Schlicker and Deacon predicted that Bear Creek and Rogue River Valley sand and gravel deposits would be exhausted by 1982 and peripheral terrace and bench deposits depleted between 1990 and 2000. They estimated 64 million tons of sand and gravel reserves for the Medford area within an area of approximately 90 square miles. Based upon per-capita consumption and population growth Schlicker and Deacon (1970) estimated that production of sand and gravel in the area would reach 2 million tons by 1991.

Sand and gravel deposits in the Medford area are much more extensive than indicated in the Schlicker and Deacon (1970) report. Supplies that were predicted to have been exhausted by 1982 are currently being mined, and gravel reserves within LTM's 583-acre tract rival those estimated for the entire Medford area. The present far greater reserve base can be directly attributable to the much greater gravel thicknesses encountered by industry. Deeper gravels are lower quality, but as Mr. Lininger indicated, LTM utilizes a variety of scrubbing techniques to upgrade its deep reserves. Demand for rock products has remained relatively constant over the past three years and demand is not as high as predicted. Mr. Lininger pointed out large tracts of land zoned AR (aggregate resource) adjacent to LTM's property which have been leased to sand and gravel operators periodically and which are potentially available. Several tracts are currently being leased or purchased by competitors Medford Ready-Mix and Crater Sand & Gravel.

The status of the Medford aggregate industry might well be summarized by Mr. Lininger's estimate that LTM by itself has sufficient reserves on its 1200 acres to handle Medford's needs for at least the next 30 years. LTM, and I might add IRC, expect to be at the forefront of the aggregate industry in southwest Oregon for some time to come.

References

Schlicker, H. G., and Deacon, R. J., 1970, Sand and gravel, Bear Creek and Rogue River valleys, Jackson County, Oregon: Oregon Department of Geology and Mineral Industries Open-File Report O-70-01, 28 p.

The Miner's News, April-May, 1990, v. 5, issue 2, p. 4B.

FRH:fh
HULLTM.MEM

xc: file

Minorco: principal investments and cross-relationships with other major mining groups

(Equity interest in %)

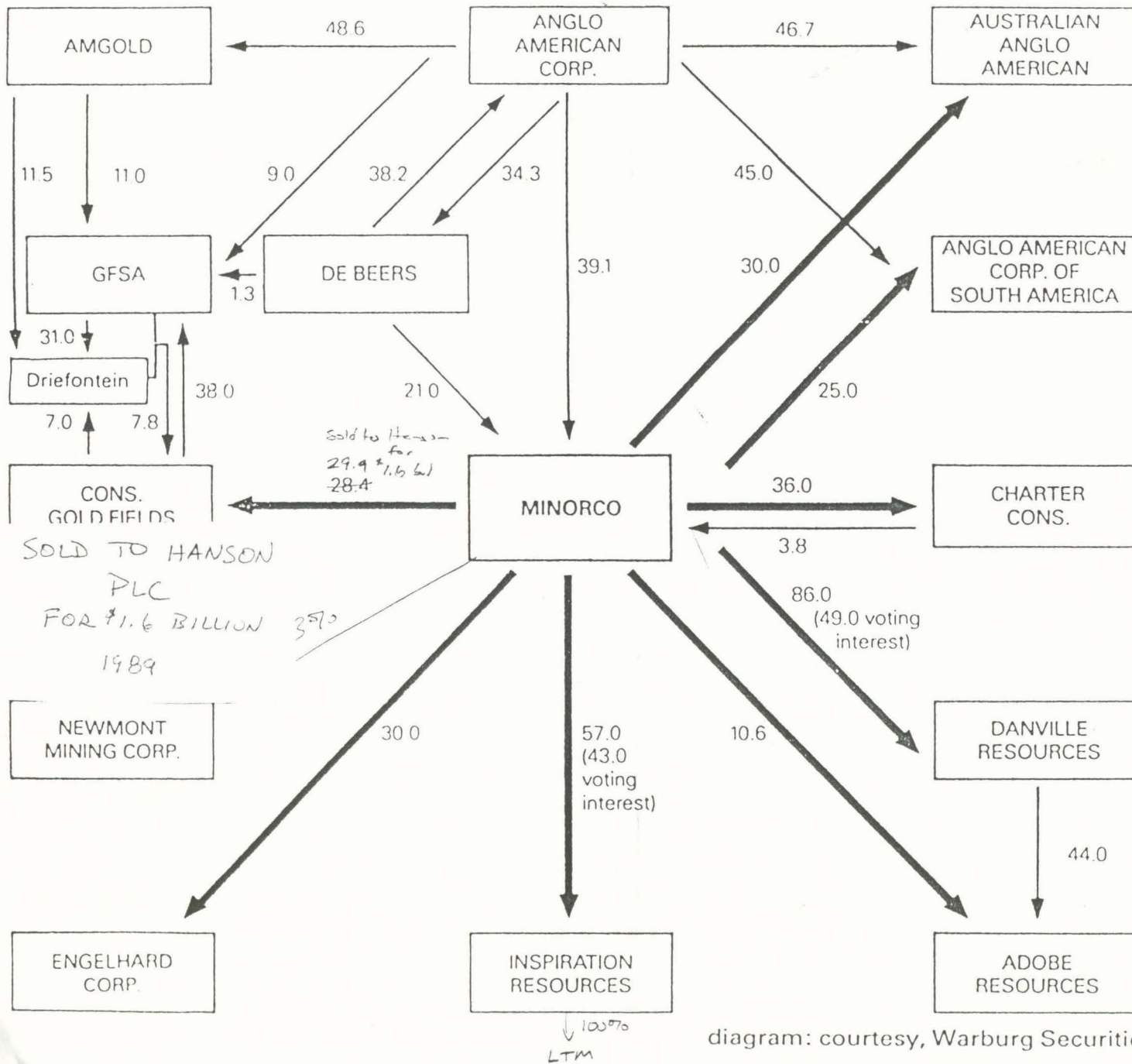


diagram: courtesy, Warburg Securities