

MINERALS *Research*

P.O. BOX 591
CLARKSON, NEW YORK 114430

July 21, 2002

Mr. George Yelich
KMI Zeolites, Inc.
HCR 31 - Box 52
Sandy Valley, Nevada 89019

Dear George,

At your request, I have summarized below my thoughts regarding the nature of KMI's zeolite deposit west of Death Valley Junction, California. As you know, I commonly refer to this deposit as the Amargosa Valley (AV) zeolite deposit, to distinguish from what I have called the Death Valley Junction (DVJ) zeolite deposit a few miles east of Death Valley Junction (also known as the Ash Meadows deposit).

From the mine maps you showed me in your office in Sandy Valley and from my two visits to the deposit on the ground, KMI's Amargosa Valley deposit appears to be extremely large, probably containing several tens of millions tons of zeolite ore. Although several faults appear to be present, the amount of ore in any one of fault blocks appears to be sufficient to support a viable mine for many years to come, with a minimum (a few inches to a few feet) of unconsolidated overburden to be removed.

My X-ray diffraction examination of about fifty drill-hole and surface samples of ore submitted by you and collected by myself from outcrops all show an abundance of the zeolite clinoptilolite and trace to minor amounts of cristobalite (opal-CT) and calcite. The clinoptilolite content appears to average at least 75-80%, with many samples exceeding 90-95%. This is unquestionably one of the largest and highest grade clinoptilolite deposits in the United States. The ore is relatively hard, which is good or bad, depending on the proposed end use. Good, if attrition resistance is desired (e.g., in water treatment and purification applications, where constant agitation might cause a softer ore to disintegrate), and bad, if ease of pulverization and softness to the touch is a desired quality (e.g., for cosmetic or pharmaceutical use).

The NH_4 cation-exchange capacity (CEC), determined on six samples, ranged from about 1.5 to 1.7 meq/g, slightly less than the DVJ material and the Castle Creek, Idaho, and Hector, California, ores, but still greater than most clinoptilolite-rich products from other deposits. The exchange cations are mainly sodium and potassium, with some calcium, a common mixture of cations found in most zeolites. The water loss (LOI) also appears to be within the normal range for clinoptilolite (15-20%). The color is light green, similar, but slightly darker than the DVJ ore.

Bearing the caveat in mind that the practical value of a zeolite ore is determined only by how well it works in a given application, KMI's clinoptilolite deposit west of Death Valley Junction, California, is one of the best that has been found to date.

Sincerely yours,


F. A. Mumpton
MINERALS RESEARCH

Service

Consulting

Research