



CYPRUS Industrial Minerals

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LABORATORY REPORT
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CHIPPY CREEK, MT, BARITE
MOUNTAIN MINERALS, MT, BARITE
METALLINE FALLS, WA, TALC
Project No. 90-388

Your samples of barite from Montana were characterized in terms of mineralogy, color, and GE brightness. The Chippy Creek barite was found to be high purity (97.5% barite) with good brightness (91 GEB). The barite sample from Mountain Minerals' stockpile was found to be of good purity (96% barite), with lower brightness (86 GEB) than the Chippy Creek barite. The sample of talc from Metalline Falls, WA, is only 90% talc with 10% quartz. The Metalline Falls talc is similar in the crystallinity of the talc itself to Beaverhead talc, but is slightly more coarse.

	Chippy Creek barite	Mountain Minerals barite	Metalline Falls talc
Mineralogy			
Barite	97.5%	96 %	nd
Talc	nd	nd	90 %
Quartz	2.0	3.5	10
Clay	0.5	nd	nd
Carbonate	nd	0.5	nd
LOI @ 1000C	0.11%	0.29%	4.3%
Median size			
(granulometer)	13.5 microns	15.8	10.3
GE brightness			
(Technidyne)	91.0	86.3	90.1
Hunter Color			
L	96.9	93.6	96.3
a	-0.27	-0.21	-0.05
b	2.37	1.03	1.60
X	92.0	85.7	91.0
Y	94.0	87.5	92.8
Z	107.1	101.7	107.0

Color and brightness values were determined from samples ground in a Spex ball mill. The median size listed above is that of the sample from which brightness and color were determined. The samples were ground further in a McCrone Micronizer prior to XRD analyses to provide more accurate determination of quartz concentration.

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EXHIBIT
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