CUSTOMER SERVICE LABORATORY
TEST REPORT

TEST NO: EX-548 March 8, 1962

MACHINE: TURBULIZER
CUSTOMER: E. I. DUPONT,
NEWPORT, DEL.
FIELD REPRESENTATIVE: HARRY F. OGDEN, JR.
MATERIAL: PIGMENT PRESS CAKE

PURPOSE: The purpose of this test is to determine if the pigment press cake can be dried in the Turbulizer from 70% moisture down to less than 1% moisture.

RESULTS: Several problems were encountered when handling the pigment press cake. The first was a feeding problem. In the beginning of the test we tried to feed the pigment through the use of a screw feeder by maintaining a constant head on the material, however, the material would fill the screw and then rotate with the screw and no material would feed to the machine, thus giving us a very uneven feed rate and unstable conditions.

We found that by putting the pigment press cake in the 2 cu. ft. ribbon blender we could fluidize the material to an extent where it could be pumped to the Turbulizer through the use of a Viking pump. With this set-up we could come up with a fairly stable feed rate to the machine. The pumping system was used through the remainder of the test.

In runs 1, 2 and 3, we attempted to process the pigment through the Turbulizer at a shaft speed of 2200 R.P.M., however, as the machine loaded up the power requirements increased to a point where the machine was severly overloaded and was taken from service. When we examined the inside of the Turbulizer it was found that the pigment press cake became somewhat like real hard gumbo clay as the moisture is removed. When it reached this state in the Turbulizer it started to agglomerate in large chunks adhering to the walls of the Turbulizer and severly overloading the machine.

When we examined the material that did discharge from the machine we decided that if we could produce agglomerates with some dry material from the Turbulizer in one pass, perhaps then the material could be recycled a second pass to complete the drying cycle. In run #4, the capacity to the Turbulizer was decreased to 850 R.P.M. and we fed a 38 lb. sample of material to the Turbulizer in 10 min. for a rate of 230 lbs./hr. During this run the machine would build-up in power to approximately 25 H.P. and then shed itself during this operation. The material that was discharged from the Turbulizer contained approximately 25 1/2% moisture. From the observations of this run it is quite possible that the Turbulizer could be made to operate in this manner discharging agglomerates of material and also some dry powder in a first stage unit.

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