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MAY 22 1956

September 24, 1948

300 AREA
CLASSIFIED FILES

C. E. GROSS

200 AREAS SAND FILTER PROGRAM

ATTENDANCE:

R. S. Bell, Chairman
J. S. McMahon
S. D. Smiley
C. E. Lapple
J. B. Work
V. W. Wood
F. A. R. "taiken"

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By Authority of TID-1116

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By J. E. Savely 12-28-48

AM Eick 3-12-99

A meeting of the above group was called in the office of the Chairman at 2:30 P. M., September 23, 1948, in order to discuss the immediate future sand filter program, particularly as related to the B Plant installation.

A resume of the tests already run on samples of the Type O sand from Eau Claire, Wisconsin and Monterey, California was presented by Dr. Work.

Two test runs, approximately 2 1/2 hours duration, were made with each type of sand. The sand bed depth in each case was 2 1/2 inches, and test filters were analysed by two individuals. All tests were made at an air flow rate of 6 cfm. Efficiencies ranged from 99.3 percent to 99.95 percent.

Comparing similar tests made with local (White Bluffs) sand of 30 - 40 mesh, Mr. Lapple observed that this sand passed approximately one-tenth the contamination passed by the two imported sands under similar conditions. Accordingly, another test unit is being prepared to test again a new sample of local sand. Should the original observations be substantiated, it is felt that either a chemical difference, which might account for increased iodine absorption, or a physical difference exists. To evaluate this latter possibility, an order was placed for crushed flint in the 30 - 40 mesh range. Evaluation of this material should be fair" complete by September 29, 1948.

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Another observation, recently made, using a permeability apparatus showed as much as 100 percent increase in pressure drop through a sand layer which was packed by wrapping the sides of the tube. Although it seems unlikely that any such comparable packing could occur in the full scale unit, the extreme necessity of avoiding walking on the sand as placed in the filter was stressed. It was agreed that plywood panels would be employed while placing the sand layers in the T Plant installation. It was also noted that the continuous run test sand filter has now operated twenty days without increase in pressure drop.

In considering engineering features related to increased capacity and efficiency, Mr. Lapple strongly recommended the use of a deeper sand layer with its attendant increase in pressure drop rather than increased area of the filter. This recommendation is substantiated by the fact that a sand bed doubled in depth would be more efficient and would entail only a larger capacity fan, whereas a filter doubled in area would double the cost.

It was agreed that the Project Engineering Division would investigate the procurement of a larger fan, even though a mild steel unit might be procured subsequently to be replaced by a stainless steel unit. The consideration of an increased sand depth in the B Plant unit will be based on the fan availability.

It was also agreed that the Project Engineering Division would investigate the changes necessary in order to operate the T Plant sand filter with two ventilation fans in series. This is to be done in the event the flow of air with one fan is insufficient to maintain satisfactory process ventilation conditions. Mr. Lapple stated it was possible that this flow might be less than 18,000 cfm.

In order to investigate possible effects of such a reduction in air flow, it was agreed that the S Division would make tests in the B Plant, as directed by Mr. Lapple, to throttle the air flow by loading the ventilation fan discharge damper.

One further agreement between the Technical and S Divisions provides for deferring the installation of cell filters in Cells 6R, 8R, 9L and 12R until after September 29, 1948, in order that the activity of process ventilation air may remain high for evaluation purposes.

S DIVISION

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