ANDERSON SCREENING TANK AND GROUP OIL COOLING SYSTEM

The recommended method of oil cooling for a group of several Anderson Expeller® presses, and even for only one Expeller press, is to provide a special Anderson Oil Screening Tank which serves as a combination oil cooling supply tank and foots settling tank. Most of the fine foots and all of the coarse foots are settled out in this tank.

Anderson Screening Tanks are made in two sizes designated as No. 12 and No. 18. No. 18 tank has 40% greater holding capacity than the No. 12 tank. Illustrated in Figure 1 is an outline showing design and function of this equipment. Both of the tanks are rectangular in shape and are divided into sections to facilitate settling of the foots (meal particles) from the oil.

After the oil which is being produced by the Expeller presses has filled the tank to the proper level, the cooling oil for the Expeller cooling system is continuously withdrawn from the tank at the outlets indicated on the drawing. This oil is first pumped through heat exchangers, where it is cooled to the desired temperature. Then the oil is pumped over the barrels of the Expeller presses at the rate of 35 or 50 g.p.m. per Expeller (depending on the size) by means of a circulating oil pump specifically provided for this purpose. The cooling oil outlet is located in a quiescent (quiet oil) section of the tank containing oil relatively clear of foots.

The cooling oil flowing over the barrels of the Expeller presses combines with the product oil being produced by the Expeller presses and gravitates into the Expeller bed. The combined oil (yellow), together with any foots (brown) which it may contain, then re-enters the tank at the opening shown on the drawing. The oil is then directed through the chamber sections of the tank which are formed by the placing of partitions and baffles at various locations. This partitioning of the tank reduces the currents and turbulence which may be caused by the inrush of oil, and promotes effective settling of the foots.

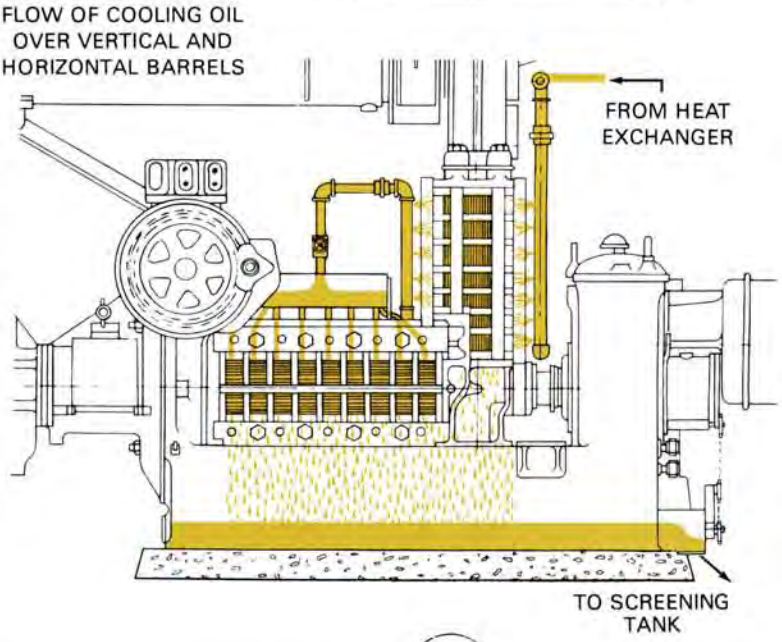
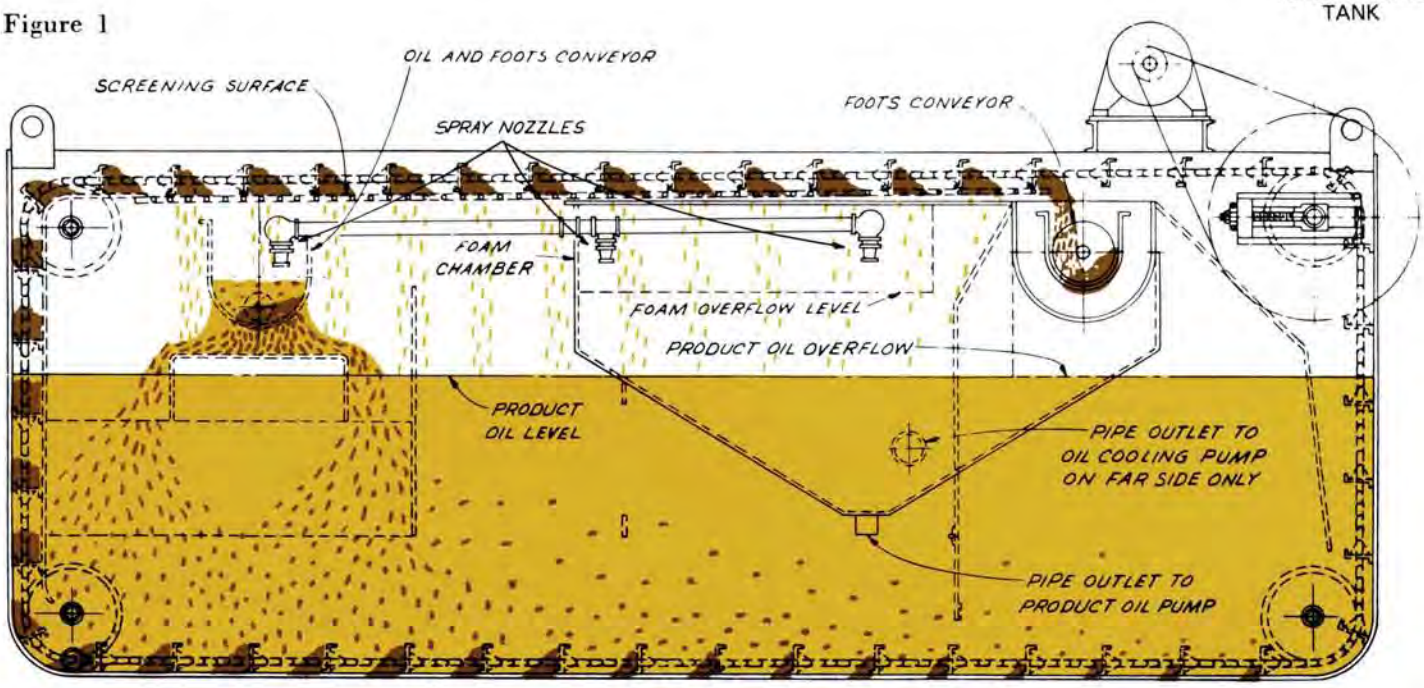


Figure 1



The product oil representing the excess over the amount being used for oil cooling, flows out the product oil overflow outlet into the oil chamber on the side of the tank. The product oil pump delivers the product oil into a separate holding tank for final filtering. It should be noted from the drawing that the product oil overflow outlet is located so that the flow oil in the tank is directed through the various chambers before overflowing into the foam chamber. Thus the overflow oil is retained in the tank for the maximum length of time. The retention of the oil in this manner allows additional fine foots to settle out of the oil before the oil goes to the unfiltered product oil holding tank, resulting in a substantial reduction in the filter press cycle.

The settled foots are collected by paddles mounted at fixed intervals on a motor driven continuous drag chain which travels around inside the tank. These paddles drag the foots up and out of the oil chamber and then horizontally across a wedgewire screen mounted in the top of the tank, which allows the free oil to drain from the foots.

In the course of the drainage process, the foots are carried along to the end of the screen where they fall into the feed screw conveyor inserted into the opening for that purpose. They are then continuously and regularly fed back into the stream of prepared material being conveyed to the Expeller press. Thus they are thoroughly mixed in with the fresh material and repressed as fast as produced, insuring highest oil quality and maximum Expeller press efficiency.

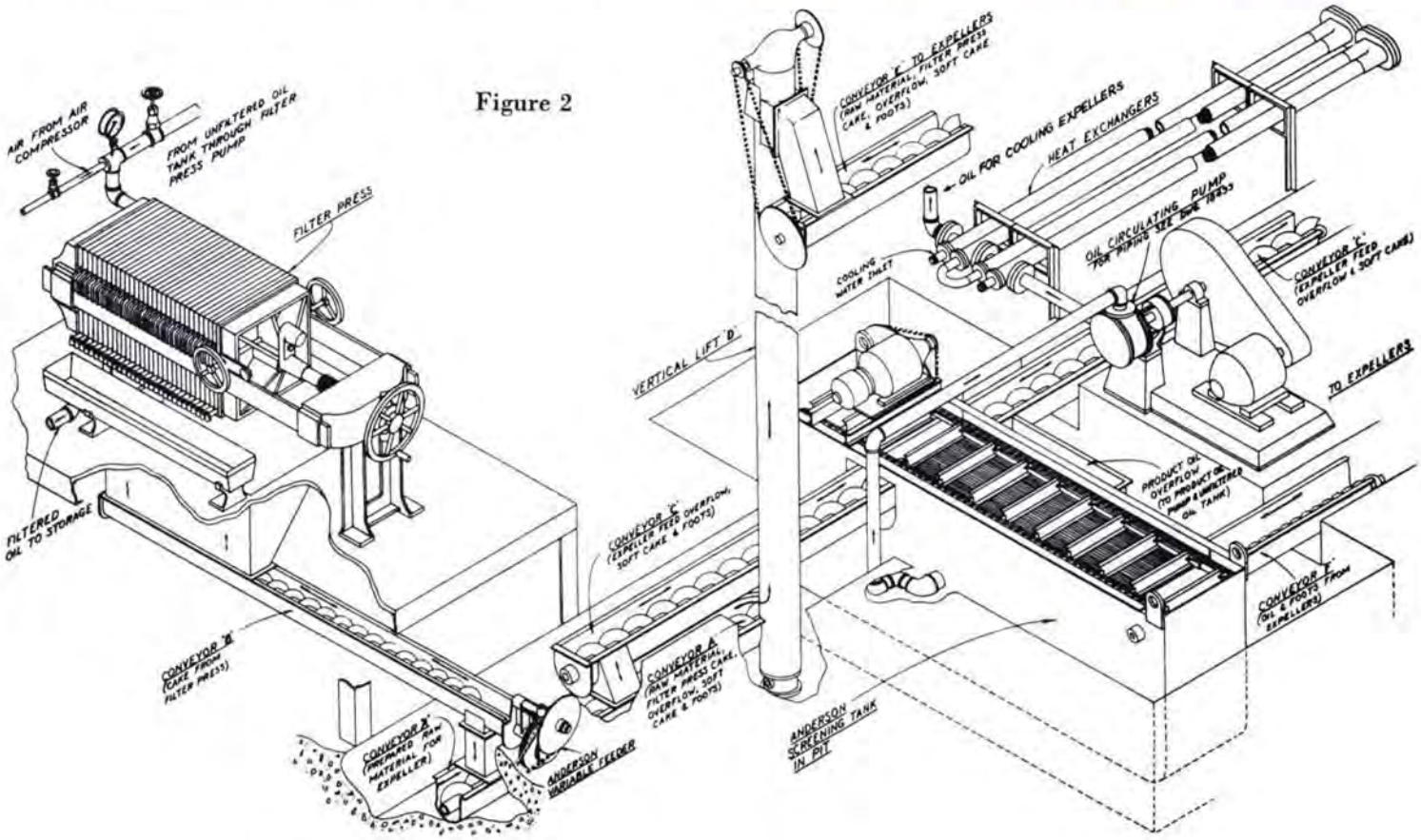
A schematic drawing of this important system is shown in Figure 2.

When shutting down the plant, the Screening Tank can be emptied through the use of a discharge pipe line connecting an outlet in the lower corner of the tank with the product oil pump. The oil then is pumped through the regular product oil pipe line to the product oil holding tank.

Tank Size	Overall Dimensions		
	Width	Height	Length
No. 12 Screening Tank	5'-11¾"	7'-5⅞"	16'-2"
No. 18 Screening Tank	8'-1¾"	7'-5⅞"	15'-10"

Tank Size	Shipping Weight Domestic	Export Specifications		
		Cu. Ft.	Net Wt. In Pounds	Gross Wt. In Pounds
No. 12 Screening Tank	8100#	798	8100	10400
No. 18 Screening Tank	10900#	999	10900	12600

Figure 2



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