

moving the road, and if this is done before the ditches are needed, the road crossings will not be required.

In spite of our hurry, the river rose before the well could be dug as deep as our plans called for. This will prevent the use of the pumping plant when the river is very low. There will not likely be any trouble in the fall, but there might be in the early spring. During the low water period this fall or next spring, the well should be deepened 2 feet and the connecting box uncovered and lowered the same amount. This will probably cost less than \$100.00.

In previous year, some 10 or 12 acres of the most favorably located land has been irrigated by the use of the following machinery, which will not be needed any more in its present location:-

- 1 - 4" x 8" gasoline engine belt-connected to
3" centrifugal pump.
- 1 - 4" x 6" gasoline engine belt-connected to
2" centrifugal pump.
- 2 - windmills and well pumps.
One windmill wheel broken.

On June 14th., we made a test of the new pumping plant to determine its general capacity and efficiency. The plant was supposed to deliver 1000 gallons (U.S.) per minute or 2.2 cubic feet per second, at a static head of 50 feet. When the test was made the river was high and the head was only 41 feet. This decrease would be expected to cause an increase in the capacity and probably a decrease in the efficiency.

The actual test gave a discharge of 2.7 cubic feet per second or 1200 gallons per minute, which shows that the plant was the required capacity. The efficiency of the machinery, making an allowance of 16 feet for friction loss in the pipes and elbows, was 59%, which is considered quite satisfactory for this type of pump, especially when operating under a varying head.

The actual ratio of the useful work^{done} in lifting the water to the amount of power through the meter, which gives the over-all efficiency of the plant, was 42%. When the river is lower, there will be a smaller discharge and the friction loss will