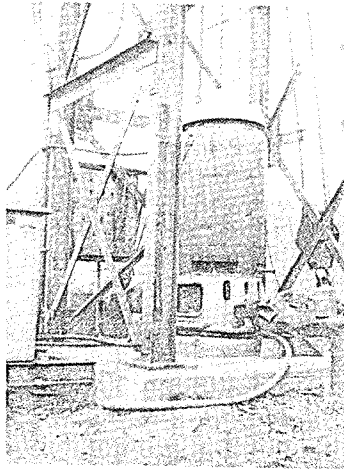


CASE HISTORY NO. 3-2

ADJUSTMENT OF PUMP DISCHARGE TO FIT DISCHARGE REQUIREMENTS

*Deep Well Pump Installation
Drawing Water from Mine
Sump 370 Feet Below*



MINING METHOD: Mechanized underground mining.

LOCATION: Western Pennsylvania, Pittsburgh Seam Coal.

RESULT ACHIEVED: Water seeping into the pool contacts less gob and picks up less acid and iron. The pH of the discharge has changed from 6.0 to 6.7 and the iron content from about 200 mg/l to the neighborhood of 50 mg/l.

DESCRIPTION: Abandonment of the existing borehole discharges on retreat sections allowed a large pool of water to form and threatened to inundate the main haulage area. Two deep well pumps were installed in a borehole 370 feet deep. At the outset of the operation of these pumps the level of water was at elevation 760 and the area covered was quite large. The iron content of the water was prohibitive and discolored the receiving stream for a distance of ten miles. Several methods of pumping were tried, varying the time and interval of pumping periods. Finally, the pumps were operated continuously and the water level was lowered to elevation 710. This diminished the area covered by water and improved the water quality. The seepage water is of an alkaline nature and since this area is abandoned and has no circulating air currents, the exposed gob area apparently does not oxidize rapidly. Today the stream is discolored for a short distance below the discharge point and from there on the stream is clear and contains an abundance of aquatic life.