

June 13, 1986

To: Technical File

FROM: Dave Cline, Hydrologist *DC*RE: Request to Construct New Borehole Facility, Consolidation Coal Company, Emery Deep Mine, ACT/015/015, Emery County, Utah

The proposal by the Consolidation Coal Company to construct a new borehole pump facility was reviewed in order to determine if the existing sedimentation pond (pond #1) is capable of treating the discharge from the new facility as well as the discharge from the current pumping facility. The construction of the new borehole pump facility will not increase the amount of discharge out of the mine. The new facility is being constructed so that the southern extent of the mine workings will be pumped more easily. Currently, water made in the mine in the southern portion of the workings is being pumped underground to a sump located below the current borehole pump facility. The construction of the new borehole pump facility will allow the operator to pump directly from a sump in the southern workings area to the sedimentation pond on the surface. The amount of mine discharge will be the same with the new facility as it is currently with only one borehole pump facility in operation.

The capacity of the sedimentation pond was reviewed to make sure that it is properly sized for the amount of mine water discharge being treated. The enclosed attachment shows that the pond is more than adequate to treat the mine water discharge from both pumping facilities.

Therefore, it is recommended that the MRP Amendment to construct the new borehole pump facility be approved by this reviewer.

cc: Wayne Hedberg

Project: Consolidation Coal, Emery Deep,
Request to Construct New Borehole
Pump & Facility, ACT/015/015

Date: 6/12/86

Reviewer: Dave Cline Hydrologist

Purpose: to determine if sedimentation pond #1
is adequate to treat mine water discharge
from existing + proposed borehole pump
facilities

Existing conditions - pond has 16.1 AF storage
design flow = 1,401,150 gpd
retention time required - 36 hrs
Pond surface area = 116' x 825'
present flow avg. = 600,000 gpd
brine inflow = 6,000 gpd

Review \Rightarrow

Total inflow to pond = mine Q + brine Q + precip Q
+ sed.

$$\text{Precip. Q (10 yr 24 hr)} = \frac{(1.5 - 0.25)^2}{P + 0.05} \quad ; \quad CN = 100$$

$\therefore S = 0$

$$Q = 1.5 \text{ inches}$$

$$\begin{aligned} \text{Volume} &= 1.5'' \times 825' \times 116' \times \frac{1}{12} \\ &= 11,962.50 \text{ ft}^3 \end{aligned}$$

$$\begin{aligned} \text{Mine Q} &= 416 \text{ gpm} \times 2160 \text{ min} = 898,560 \text{ gal} \\ &= 120,128.34 \text{ ft}^3 \end{aligned}$$

$$\begin{aligned} \text{Brine } Q &= 4.2 \text{ gpm} \times 2160 \text{ min} = 9,072 \text{ gal} \\ &= 1,213 \text{ ft}^3 \end{aligned}$$

$$\text{Sed. volume} = 1.0 \text{ AF} / 5 \text{ yrs} = 43,560 \text{ ft}^3$$

$$\begin{aligned} \therefore \text{Total inflow volume} &= 43,560 + 1,213 + 120,129 + 11,963 \\ &= 176,865 \text{ ft}^3 = 4.1 \text{ AF} \end{aligned}$$

Pond has 16.1 AF total storage and needs 4.1 AF of storage for 36 hr retention time for existing inflow of 600,000 gpd \therefore
Pond is more than adequate