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C O N S U L T I N G E N G I N E E R S

CIVIL ENGINEERING
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SOILS & SUBSURFACE INVESTIGATION
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December 3, 1975

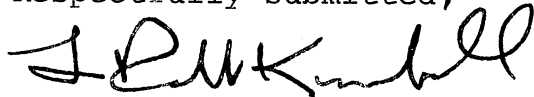
Maurice K. Goddard
Secretary
Department of Environmental Resources
Commonwealth of Pennsylvania
P.O. Box 1410
Harrisburg, Pennsylvania 17120

Dear Secretary Goddard:

In accordance with the terms of our Engineering Agreement dated September 9, 1973 and Amendments, we are submitting, our engineering report entitled, "Southern Latrobe Syncline Mine Drainage Pollution Abatement Project, SL 103-4". The report presents the results of our studies, a recommended abatement plan and estimated costs.

We are available at your convenience for discussion of this report.

Respectfully submitted,



L. Robert Kimball, P.E.

LRK/crm

3.2.5.2 Lime Slurry Tank - TK-2

The level indicator shall indicate the level of 10% lime slurry inventory in the tank. Upon high level signal, the controller shall shut down the lime feeder LF-1, lime slaker LS-1 and the transfer pump, P-10. Upon low level signal the controller shall shutdown the lime slurry feed pumps, P-11 & P-12. Alarms shall sound upon either low level or high level signal.

3.2.5.3 Ion Exchange Units - IE-1, IE-2, IE-3, IE-4

The level controller shall upon signal close the draindown valves as described in Specification Section 3.10.1 Automatic Sequence Program - Ion Exchange Regeneration Cycle.

3.3 Loss of Head Measurement

3.3.1 Differential Pressure Cells

Transmitters for transmitting signals from differential producing primary elements shall be of the differential pressure cell type. Output of the transmitter shall be either 1-5 volt dc or 10-50 ma dc and shall be compatible with all instruments receiving the signals. The signal shall be linear with pressure drops. Transmitters shall have an accuracy of $\pm 0.5\%$ of output span and repeatability of $\pm 0.15\%$ output span with temperature compensation over a range of -40 to 250°F. Cells shall be constructed of corrosion proof metal, type 316 stainless steel or equal; cell housing shall be cadmium plated carbon steel. The entire transmitter shall be housed in a corrosion resistant case with gasketed cover, meeting all requirements of NEMA I enclosure.

3.3.2 Loss of Head Indicator

The indicator shall be activated by a 1 to 5 volt signal or 10-50 ma dc signal. The meter module shall include precision series resistance circuit, a range adjusting resistor, a terminal strip and a 3½ in. by 2½ in. indicating scale graduated over an arc of 100°. The indicator shall be adjustable from the front. The accuracy shall be within $\pm 2\%$ of maximum scale reading.

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DEPARTMENT OF ENVIRONMENTAL RESOURCES
REVIEW NOTICE

This report, prepared by outside consultants, has been reviewed by the Department of Environmental Resources and approved for publication. The contents indicate the conditions that are existing as determined by the consultant, and the consultant's recommendations for correction of the problems. The foregoing does not signify that the contents necessarily reflect the policies, views, or approval of the Department.