December 8, 1987

TO: File

FROM: Rick P. Summers, Reclamation Hydrologist RPS

RE: Conditional Approval of PAP amendment; Enlargement of Portal Area Sedimentation Pond/ Decant Modification, Utah Fuel Company, Skyline Mine, ACT/007/005, Carbon County, Utah

Summary

This submittal consists primarily of the stage-discharge curve as required by our conditional approval. Using values clarified by this submittal, it can be demonstrated that the spillway system is sized to discharge the 100 yr - 24 hr precipitation event with adequate capacity for the expected mine water discharge rate (see attached calculations). The submittal is considered complete except for two minor items: 1) The design is not certified by a Professional Engineer (PE); and 2) The coefficient for orifice flow used was 0.8, where literature suggests the use of 0.6 for sharp-crested spillways.

Recommendations

Consider the application approved at this time. The aforementioned items will be corrected during the upcoming five-year permit renewal process. It is important to note that this modification approval is for the increase of the spillway height. The spillway system has been shown to be sized adequately for the design discharge. However, this approval should not be interpreted as a complete approval for the pond system. Specifically: mine water volumes treatable in the pond, pond operating procedures, and enforceability issues will be addressed in the upcoming permit review.

jr
Attachment
cc: Randy Harden
Wayne Hedberg
Sue Linner
Kent Wheeler
1385R/1

12/87 RBS/SKG 2 of 3

Stage - Q curve:

Inputs		Ref.
Dia riser	48"	DWG. ST 4D 010
Dia barrel	30"	"
Elev. Junc.	8566.9	"
Ht. riser	12.7'	calculated
n	0.024	
Ke	1.0	assumed (Red book)
Corifice	0.6	"
Kb	0.5	
Kf	1.5	(calc.)
OUTLET ELEV.	8550.0'	
MAX. elev	8582.75'	
Total L	35 + 13'	FIG. 3.2.1-2
1° elev.	8579.6'	DWG. TO-4-D-001
Total Ht.	29.6	
Head avail.	3.15'	calculated

Head	Qw	Q orifice	Q pipe
0.2	3.7	27.06	104.72
0.5	14.6	42.8	
0.7	24.2	50.6	
1.0	41.5	60.5	
1.3	61.7	68.9	
1.5	76.6	74.1	
2.0	118.5	85.6	
2.5		95.7	
3.15		107.39	

no need

So, assume 78 cfs for Q100-24

@ 3.15' available capacity is 108 cfs - 78 cfs = 30 cfs

30 cfs = 13,440 gpm for mine water

approve

Project: Skyline Pond Dam modification

Date: December 8, 1987

Reviewer: R. Summers

I. PEAK FLOWS

INPUT	DOGM	Reference
1) - AREA TO POND	31.5	#1), 5) DWG. 1-101-C
2) - CN	90	
3) - Ppt 10-24	2.45	MRP
- Ppt 25-24	2.92	
- Ppt 100-24	3.62	
4) Slope	45.3%	using % = 2(C.I)(C.I.) / Area
5) Hyd. Length	1650'	

Results

	QP	Volume
10-24	47 cfs	169,964 ft.³
25-24	58.5 cfs	
100-24	77.2 cfs	

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