

Permit Number	ACT\015\025	Report Date	9/27/99
Mine Name	Bear Canyon Mine		
Company Name	C.W. Mining Company		
Impoundment Identification	Impoundment Name	Sediment Pond "A"	
	Impoundment Number	002A	
	UPDES Permit Number	UTG040006	
	MSHA ID Number	N/A	

IMPOUNDMENT INSPECTION

Inspection Date	9/27/99
Inspected By	Miles Stephens
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Quarterly

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.
 The pond's dam and banks appeared sound with no signs of instability, erosion or other hazardous conditions.

Required for an impoundment which functions as a SEDIMENTATION POND.	2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment. Sediment storage capacity = 39,500 ft ³ 60% cleanout elevation = 7,086 100% sediment storage elevation = 7,087.9 Existing sediment elevation = 7,084.5
	3. Principle and emergency spillway elevations. Principle spillway elevation = 7,088 Emergency spillway elevation = 7,094.5

4. Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.
 The pond contains approximately 24" of water all on the south end. The pond was last cleaned in August, 1997. Embankment slopes are stable with good vegetation.

5. Field Evaluation. Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.
 The existing sediment volume is approximately 13,890 ft³. The existing runoff storage capacity is 98,911 ft³ which is greater than the 64,951 cubic feet required in the permit.

Qualification Statement	I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability. Signature: <i>Miles Stephens</i> Date: <i>9-27-99</i>
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Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

- | | | |
|-----|--|---|
| (1) | Potential Safety Hazards | <u>None Apparent.</u>

_____ |
| (2) | Slope Stability | <u>Good. Slope on North end of pond repaired and stabilized.</u>
_____ |
| (3) | Erosion | <u>None Apparent.</u>

_____ |
| (4) | Construction and Maintenance Performance Standards | <u>No sediment in the South end of pond by the sediment level indicator.</u>
_____ |
| (5) | Recommendation/Comments | <u>Pond contains 4.5' of standing water.</u>

_____ |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9-26-97
Date

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 3	
Permit Number	ACT\015\025	Report Date	12/30/97
Mine Name	Bear Canyon Mine		
Company Name	Co-Op Mining Company		
Impoundment Identification	Impoundment Name	Sediment Pond "A"	
	Impoundment Number	002A	
	UPDES Permit Number	UTG040006	
	MSHA ID Number	N/A	
IMPOUNDMENT INSPECTION			
Inspection Date	12/18/97		
Inspected By	Charles Reynolds		
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Annual/Quarterly		
<p>1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.</p> <p>The pond's dam appeared sound with no signs of instability or hazardous conditions.</p>			
Required for an impoundment which functions as a SEDIMENTATION POND.	<p>2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.</p> <p>Sediment storage capacity = 39,500 cubic feet 60% cleanout elevation = 7,086 100% sediment storage elevation = 7,087.9 Existing sediment elevation = 7,082.1</p>		
	<p>3. Principle and emergency spillway elevations.</p> <p>Principle spillway elevation = 7,088 Emergency spillway elevation = 7,094.5</p>		

4. **Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

The pond contains 4 inches of water. There is minimal sediment in the pond, all contained on the North end. The sediment pond was last cleaned in August, 1997.

5. **Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

The existing sediment volume is approximately 3,000 cubic feet. The existing storage capacity is 101,451 cubic feet which is greater than the 64,951 cubic feet required in the permit.

**Qualification
Statement**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: _____

Charles Reynolds

Date: _____

12/30/97

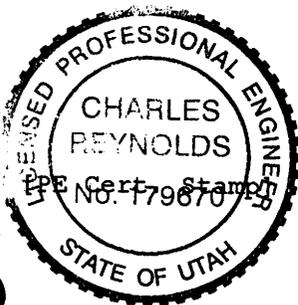
CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)

	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	X	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	X	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	X	

COMMENTS AND OTHER INFORMATION

Certification Statement:



I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Charles Reynolds, P.E.
 (Full Name and Title)

Signature: Charles Reynolds Date: 12/30/97

P.E. Number & State: 179670 Utah

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Sediment elevation is 7085.5, 6" below
the sediment cleanout level. Cleaning
of the pond will resume in July.

(5) Recommendation/Comments

Complete sediment cleanout.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6-27-97
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Pond is covered with snow and ice.
The Cleanout is scheduled to be resumed
as soon as weather conditions permit.

(5) Recommendation/Comments

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/26/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

- | | | |
|-----|---|---|
| (1) | Potential Safety Hazards | <u>None Apparent.</u>

_____ |
| (2) | Slope Stability | <u>Good.</u>

_____ |
| (3) | Erosion | <u>None Apparent.</u>

_____ |
| (4) | Construction and Maintenance
Performance Standards | <u>Sediment elevation is 7085.5, 6" below</u>
<u>the sediment cleanout level.</u>
<u>Cleanout has begun on the sediment pond.</u> |
| (5) | Recommendation/Comments | <u>Complete the cleanout of the pond as</u>
<u>soon as the water conditions in the pond</u>
<u>allow access to the sediment.</u> |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6/28/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Sediment elevation is 7085.5, 6" below
the sediment cleanout level.
Sediment pond is currently being cleaned.

(5) Recommendation/Comments

Water is to be pumped to Pond "B" to
allow the cleanout to be completed.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9/2/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Water elev. is approx. 7086.8. The pond is
frozen. South sediment elev. is approx.
7085. Elev. is 7087 on North end.

(5) Recommendation/Comments

Sediment is near 60% capacity.
The pond should be cleared when
conditions permit.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3/28/96

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Much of slope is Well vegetated.

(3) Erosion

Some erosion was observed on the slope
in the NorthEast corner.

(4) Construction and Maintenance
Performance Standards

Water elev. is approx. 7084, 4 ft. below
the decant level and 2 ft. below the 60%
sediment cleanout level.

(5) Recommendation/Comments

Scheduled erosion repair with Marlow.
I recommend some additional reseeding
of slope following repair.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds

Inspector

3-2-95

Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Much of slope is Well vegetated.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Water elev. is approx. 7085.7, 0.3 ft.

below the 60% cleanout level and 2.3 ft.

below the decant level.

(5) Recommendation/Comments

Pond appears to be functioning well

after Spring runoff. No discharge has

occurred from the pond.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

5-31-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Much of slope is Well vegetated.

(3) Erosion

A small rill has formed on the North
slope of the Pond.

(4) Construction and Maintenance
Performance Standards

Water elev. is approx. 1 ft. below the
decant level. Pond discharge during 8/23
storm event.

(5) Recommendation/Comments

Repair rill on North pond slope.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9-29-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Water elev. is approx. 7086. The pond is
frozen. South sediment elev. is approx.
7085. Elev. is 7086 on North end.

(5) Recommendation/Comments

No discharge has occurred from the pond
during this quarter.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12-29-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good. Some Vegetation
exists on slopes.

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

Water in Pond is Approximately
4 feet below decant.

(5) Recommendation/Comments

None

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3/28/94
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None Apparent

(2) Slope Stability

Good

(3) Erosion

None

(4) Construction and Maintenance
Performance Standards

Pond Cleaned During the 4th Quarter
Of 1993.

(5) Recommendation/Comments

Pond Nearly Dry.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6-20-94
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: BEAR CANYON

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Water level is approx. 4' below the decant
elevation.

(5) Recommendation/Comments

None.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9/26/94
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Slopes covered with snow and moderate vegetation.

(3) Erosion

None Apparent.

(4) Construction and Maintenance Performance Standards

Good. Pond is frozen with 3" of snow covering the ice and slopes.

(5) Recommendation/Comments

Ice level is 7084.5, 3.5 feet below the decant and 1.5' below the sediment cleanout level.

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/26/94
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon

- (1) Potential Safety Hazards None apparent.
- (2) Slope Stability Good.
- (3) Erosion None Apparent.
- (4) Construction and Maintenance Performance Standards Water level is 2' below decant level.
Sediment level appears to be 1 to 2 feet
below water level. Pond covered with ice.
- (5) Recommendation/Comments No discharge has occurred from the pond.

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

2/26/93
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None apparent

(2) Slope Stability

Good

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

North end of pond is full of sediment.
Cleanout should be scheduled during the
summer. No discharge has occurred.

(5) Recommendation/Comments

Pond needs some cleaning.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

5/18/93
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon

- | | | |
|-----|---|--|
| (1) | Potential Safety Hazards | <u>None</u>

_____ |
| (2) | Slope Stability | <u>Good</u>

_____ |
| (3) | Erosion | <u>None apparent</u>

_____ |
| (4) | Construction and Maintenance
Performance Standards | <u>Pond needs cleanout</u>

_____ |
| (5) | Recommendation/Comments | <u>Pond should be cleaned as soon as</u>
<u>weather conditions and water levels</u>
<u>permit.</u> |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

8/25/93
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "A"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

Cleanout of pond has been completed.
Results of the composite samples are
Attached to this report.

(5) Recommendation/Comments

Attached is a statement of inspection
of the final placement of the pond waste
material.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/23/93
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Bear Pond "A"

Location: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good

(3) Erosion

Minor Erosion on North East
bank. Repair Recommended

(4) Construction and Maintenance
Performance Standards

Good - water level ~~at~~
below Percent

(5) Recommendations/Comments

Repair small Rills in
North East slope.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

2/14/92
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Bear Pond "A"

Location: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

Water level is 6' Below
Sediment Clearance Level

(5) Recommendations/Comments

No Discharge

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

5-14-97
Date

OND

Sed. Pond "A"

Location: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good, no failures

appears

(3) Erosion

None Apparent

(4) Construction and Maintenance

Water level 13.23' below

deeps level.

(5) Recommendations/Comments

Sediment cell below

clean out level

No Discharge

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Inspector: Charles Reynolds

Date

8-7-92

Mangum Engineering Consultants
Pond Inspection Report

POND: Bear S.D. Pond "A"

Location: Bear Canyon

(1) Potential Safety Hazards

None Apparent

(2) Slope Stability

Good Moderate Vegetation on slopes

(3) Erosion

No new erosion apparent.

(4) Construction and Maintenance

Performance Standards

Water in Pond is Low. Sediment level is not visible due to ice. Water level well below decant level.

(5) Recommendations/Comments

None

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds

Inspector

11/30/92

Date

Hydrology
Lead Identification Report

Pool: Pool-A

LOCATION: Barlengen

DATE: _____ REMARKS: _____

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

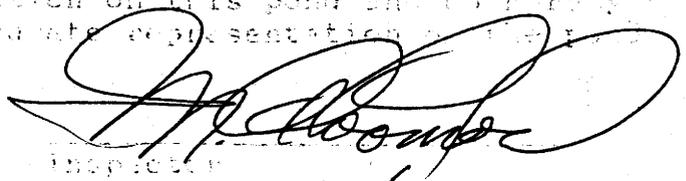
(4) Construction and Maintenance Performance Standards

Good

(5) Recommendations/Comments

Check Dye

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond of this type.



Inspector

Date

1/8/91

E.I.S Hydrology
Pond Inspection Report

POND: A:B

LOCATION: Bowling Green

ITEM REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance
Performance Standards

Good on A
B - 30% full

(5) Recommendations/Comments

None
No Discharge

I have performed the above inspection on this pond and do hereby
certify it to be a true and accurate representation of the pond
at this time.

J. H. Cooney
Inspector

2/28/9
Date

E.I.S Hydrology
Pond Inspection Report

POND: A & B

LOCATION: Bear Canyon

<u>ITEM</u>	<u>REMARKS</u>
(1) Potential Safety Hazards	<u>None</u>
(2) Slope Stability	<u>Stable</u>
(3) Erosion	<u>None</u>
(4) Construction and Maintenance Performance Standards	<u>Ponds Good Pond A Pumped Pumped to Pond B</u>
(5) Recommendations/Comments	<u>No Discharge</u>

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]
Inspector

7/29/91
Date

E.I.S Hydrology
Pond Inspection Report

POND: A

LOCATION: Bear Run
CO-92

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance
Performance Standards

Good

(5) Recommendations/Comments

No Discharge

I have performed the above inspection on this pond and do hereby
certify it to be a true and accurate representation of the pond
at this time.

[Signature]
Inspector

9/13/91
Date

E.I.S Hydrology
Pond Inspection Report

POND: "A"

LOCATION: Bar

ITEM	REMARKS
(1) Potential Safety Hazards	<u>None</u>
(2) Slope Stability	<u>Good</u>
(3) Erosion	<u>None</u>
(4) Construction and Maintenance Performance Standards	<u>Good</u>
(5) Recommendations/Comments	<u>No further work in good condition</u>

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]
Inspector

07/21
Date

E.I.S Hydrology
Pond Inspection Report

NO. A

LOCATION: Barry Lyon

ITEM _____ REMARKS _____

1. Potential Safety Hazards None

2. Slope Stability Stable

3. Erosion None

4. Construction and Maintenance Performance Standards Good

5. Recommendations/Comments Clean & Dry

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]
Inspector

6/29/90
Date

E.J.S Hydrology
Pond Inspection Report

POND: "A"

LOCATION: *Beard Creek*

ITEM _____ REMARKS _____

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance
Performance Standards

*Pond being cleaned
Water pumped to
Pond "B"*

(5) Recommendations/Comments

No Discharge

I have performed the above inspection on this pond and do hereby
certify it to be a true and accurate representation of the pond
at this time.

[Signature]
Inspector

Date *9/30/80*

E.I.S Hydrology
Pond Inspection Report

PCID: "A"

LOCATION: Bear Crag

ITEM	REMARKS
(1) Potential Safety Hazards	<u>None</u>
(2) Slope Stability	<u>Stable</u>
(3) Erosion	<u>None</u>
(4) Construction and Maintenance Performance Standards	<u>Good. Pond Clean</u>
(5) Recommendations/Comments	<u>None</u>

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]
Inspector

10/16/90
Date

POND INSPECTION REPORT

POND: "A"

LOCATION: Beavercreek

ITEM
(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

Minimal of inlet

(4) Construction and Maintenance Performance Standards

Good

(5) Recommendations/Comments

No Dredging

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]
2/19/89

POND INSPECTION REPORT

0:

A

LOCATION:

Raw Canyon

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance Performance Standards

Good to Discharge

(5) Recommendations/Comments

Check and haul
dred build up

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]

8/15/89 - 7:45 AM

POND INSPECTION REPORT

POND: "A"

LOCATION: Bentley

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

Minor on inlet

(4) Construction and Maintenance Performance Standards

Minor build up on inlet

(5) Recommendations/Comments

None

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

J. P. [Signature]

8/27/89
Date

POND INSPECTION REPORT

POND: "A"

LOCATION: Bear Creek

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance Performance Standards

Pond Partially Chained
(100%)

(5) Recommendations/Comments

No Discharge

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]

10/25/88

POND INSPECTION REPORT

POND:

Pond #11

LOCATION:

Basin

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance Performance Standards

Good drainage on
upper end

(5) Recommendations/Comments

No discharge

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]

7/17/58
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

- (1) Potential Safety Hazards None Apparent.

- (2) Slope Stability Good.

- (3) Erosion None apparent.

- (4) Construction and Maintenance Performance Standards Sediment elevation is at 7063.5, 1.3 feet below the decant. Water level is 2" below the decant.

- (5) Recommendation/Comments Recommend cleaning out the pond.

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9-26-97
Date

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 3	
Permit Number	ACT\015\025	Report Date	12/30/97
Mine Name	Bear Canyon Mine		
Company Name	Co-Op Mining Company		
Impoundment Identification	Impoundment Name	Sediment Pond "B"	
	Impoundment Number	003A	
	UPDES Permit Number	UTG040006	
	MSHA ID Number	N/A	
IMPOUNDMENT INSPECTION			
Inspection Date	12/18/97		
Inspected By	Charles Reynolds		
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Annual/Quarterly		
<p>1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.</p> <p>The pond's dam appeared sound with no signs of instability or hazardous conditions.</p>			
Required for an impoundment which functions as a SEDIMENTATION POND.	<p>2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.</p> <p>Sediment storage capacity = 3,670 60% cleanout elevation = 7,062.9 100% sediment storage elevation = 7,063.4 Existing sediment elevation = 7,063.0 (Average)</p>		
	<p>3. Principle and emergency spillway elevations.</p> <p>Principle spillway elevation = 7,064.9 Emergency spillway elevation = 7,068</p>		

- 4. Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

The pond contains 1.5 feet of water in the North end. The South end of the pond is filled with sediment. No discharge has occurred in 1997. No water samples were taken. No erosion problems were observed on the pond bank. The sediment pond was last cleaned out in June, 1996. An attempt was made to clean the pond on December 18, 1997, but the material was frozen. Although the pond still has capacity on the North end, the pond should be cleaned as soon as weather and temperature conditions permit.

- 5. Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

The existing sediment volume is approximately 2,610 cubic feet. The existing storage capacity is 10,155 cubic feet which is greater than the 9,095 cubic feet required in the permit.

Qualification Statement

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: _____

Charles Reynolds

Date: _____

12/30/97

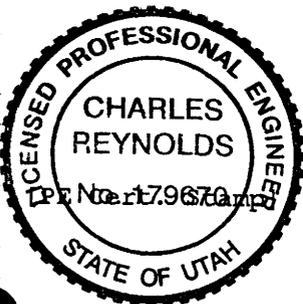
CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	X	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	X	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	X	

COMMENTS AND OTHER INFORMATION

Pond should be cleaned as soon as weather conditions permit.

Certification Statement:



I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Charles Reynolds, P.E.
 (Full Name and Title)

Signature: Charles Reynolds Date: 12/30/97

P.E. Number & State: 179670 Utah

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

- (1) Potential Safety Hazards None Apparent.

- (2) Slope Stability Good. The pond inlet, which was
reinforced last year, is functioning well.

- (3) Erosion None apparent.

- (4) Construction and Maintenance Performance Standards Water elevation is at 7063.5, 1.3 feet below
the decant.

- (5) Recommendation/Comments The pond is functioning well.

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6-27-97
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

- | | | |
|-----|---|--|
| (1) | Potential Safety Hazards | <u>None Apparent.</u>

_____ |
| (2) | Slope Stability | <u>Good.</u>

_____ |
| (3) | Erosion | <u>None apparent.</u>

_____ |
| (4) | Construction and Maintenance
Performance Standards | <u>Pond is covered with snow and ice. snow
level is 2.3' below the decant level.</u>

_____ |
| (5) | Recommendation/Comments | <u>The pond is functioning well.</u>

_____ |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/26/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Water elevation is at 7062.3, 2.6 feet
below the decant. Sediment level is at
elevation 7062.1.

(5) Recommendation/Comments

The pond is functioning very well.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6/28/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Sediment level is at elevation 7062.23,
2.67 feet below the decant.

(5) Recommendation/Comments

The pond is functioning very well.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9/2/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Water elevation is at 7062.5, 2.5 feet
below the decant.

(5) Recommendation/Comments

Pond is functioning very well.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3/28/96
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Slopes well vegetated.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Water elev. approx. 7062.5, 2.5 ft. below
the decant elev. and 6 in. below the 60%
sediment cleanout level.

(5) Recommendation/Comments

The top of the pond embankment on the
North end adjacent to the Bathhouse road
should be reseeded.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3-2-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Slopes well vegetated.

(3) Erosion

None apparent. A portion of the inlet riprap
needs regrouting.

(4) Construction and Maintenance
Performance Standards

The sediment level is 7062.5, 6 in. below
the 60% sediment cleanout level.

(5) Recommendation/Comments

The pond should be cleaned by fall.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

5-31-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

- | | | |
|-----|---|---|
| (1) | Potential Safety Hazards | <u>None Apparent.</u>
<u> </u>
<u> </u> |
| (2) | Slope Stability | <u>Pond inlet needs regrouting subsequent to</u>
<u>8/22 and 8/23 storm events.</u>
<u> </u> |
| (3) | Erosion | <u>None apparent.</u>
<u> </u>
<u> </u> |
| (4) | Construction and Maintenance
Performance Standards | <u>The pond filled to capacity during storm</u>
<u>events. Pond cleanout is approx. 70%</u>
<u>completed.</u> |
| (5) | Recommendation/Comments | <u>Pond discharged due to 8/22 and 8/23</u>
<u>flooding. Complete pond cleanout and</u>
<u>repair the pond inlet.</u> |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9-29-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Pond cleanout was completed on October
10, 1995. Slopes and bank have been
reseeded.

(5) Recommendation/Comments

Pond has approx. 4" of standing water.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

10/22/95

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon

- (1) Potential Safety Hazards None
- (2) Slope Stability Good. Slopes appear well vegetated.
- (3) Erosion None Apparent
- (4) Construction and Maintenance Performance Standards Pond is nearly dry.
Structure is functioning well.
- (5) Recommendation/Comments None

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3/28/94
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None Apparent

(2) Slope Stability

Good. Slopes Well Vegetated.

(3) Erosion

None

(4) Construction and Maintenance
Performance Standards

Pond Contains approx. 6 inches of water.

The water is the result of the water truck
overflowing during filling.

(5) Recommendation/Comments

Water 2.3 ft. below decant elevation.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6-20-94
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: BEAR CANYON

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good. Slopes moderately vegetated.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Pond contains water from the water truck
overflow. Water level is approx. 2.5' below
the decant level.

(5) Recommendation/Comments

Sediment level is well below the required
cleanout level.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9/26/94
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Slopes well vegetated.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Good. Pond is frozen with snow covering
the bottom and slopes.

(5) Recommendation/Comments

Ice level is 7062.5, 0.4 feet below sediment
cleanout level and 0.9 feet below decant
level. Ice covered with 3 in. of snow.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/26/94
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Sediment level on west side of pond is
about 6" below decant. East side covered
with 2' snow. Snow about 3" above decant.

(5) Recommendation/Comments

No discharge has occurred from the pond.
Sediment should be cleaned as soon as
ground conditions permit.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

2/26/93
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None apparent

(2) Slope Stability

Good

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

Most of pond has been cleaned.

South end of pond still has sediment

that needs to be removed.

(5) Recommendation/Comments

Complete cleaning of pond.

No discharge has occurred from pond.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

5/18/93
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good

(3) Erosion

None apparent

(4) Construction and Maintenance
Performance Standards

Pond contains a small amount
of water. Cleanout of the pond has
been completed.

(5) Recommendation/Comments

None

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

8/25/93
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "B"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

No discharge has occurred.

*Water is frozen.

(5) Recommendation/Comments

Water is approx. 2.8' below

the decant level. The only sediment

exists at the North end of the pond.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/23/93
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Bear Pond "B"

Location: Bear Canyon

(1) Potential Safety Hazards

None

(2) Slope Stability

Good

(3) Erosion

None Apparent

(4) Construction and Maintenance

Performance Standards

water level well below

Percent level

(5) Recommendations/Comments

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

2/14/92
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Bear Pond "B"

Location: Bear Cañon

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable, well vegetated

(3) Erosion

None Apparent

(4) Construction and Maintenance

Performance Standards

Pond is Dry. Sebnat
level is 3' below
Sebnat cleanest level

(5) Recommendations/Comments

No Discharge

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

5-14-92
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sed Pond "B"

Location: Bear Canyon

(1) Potential Safety Hazards

None Apparent

(2) Slope Stability

Good. ~~Apparent~~
Slopes well vegetated

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

Good. Water Level 6"
Below Design Level. (Inspection
followed a major storm event)

(5) Recommendations/Comments

Sediment well below
clearout level
no discharge

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

8-7-92
Date

Mangum Engineering Consultants
Pond Inspection Report

OND: Bear S.D. Pond "B"

Location: Bear Canyon

(1) Potential Safety Hazards

None Apparent

(2) Slope Stability

Good Slopes well
vegetated.

(3) Erosion

None Apparent.
Inlet vegetated.

(4) Construction and Maintenance
Performance Standards

Pond Dike Top Sediment
Frozen, Sediment Level
6" Below crest on South End.

(5) Recommendations/Comments

The Pond should be
cleaned as soon as
the ground thaws.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

11/30/92
Date

E.I.S Hydrology
Pond Inspection Report

POND: B

LOCATION: Red Canyon

ITEM	REMARKS
(1) Potential Safety Hazards	<u>None</u>
(2) Slope Stability	<u>Stable</u>
(3) Erosion	<u>Minor on inlet</u>
(4) Construction and Maintenance Performance Standards	<u>Pond at approx 100% Sed level -</u>
(5) Recommendations/Comments	<u>No Discharge</u>

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]
Inspector

9/13/21
Date

E.I.S Hydrology
Pond Inspection Report

POND: B

LOCATION: Red Canyon

ITEM REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance
Performance Standards

Good - (see) end
has 10% deposit

(5) Recommendations/Comments

No structure build
may need cleaning
gravel bank

I have performed the above inspection on this pond and do hereby
certify it to be a true and accurate representation of the pond
at this time.

[Signature]
Inspector

10/17/91
Date

F.I.S Hydrology
Pond Inspection Report

USPS

B

LOCATION:

Bar Canyon

ITEM

REMARKS

1. All potential Safety Hazards

None

2. Slope Stability

Stable

3. Erosion

Minor erosion noted

4. Construction and Maintenance
Performance Standards

Good - Rd at 50%

5. Recommendations/Comments

No Discharge

I have performed the above inspection on this pond and do hereby
certify it to be a true and accurate representation of the pond
at this time.

[Signature]
Inspector

5/30/90
Date

F.I.S Hydrology
Pond Inspection Report

POND: "B" _____

LOCATION: Bear _____

ITEM _____

REMARKS _____

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

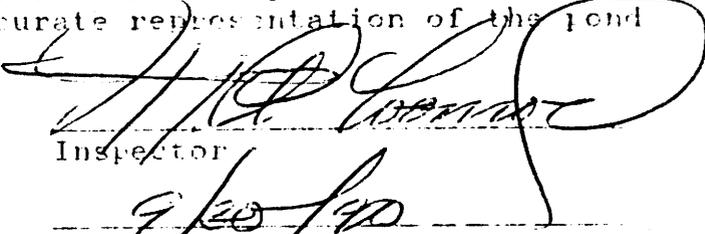
(4) Construction and Maintenance
Performance Standards

Good

(5) Recommendations/Comments

Pond at 10% Cap
Water from "A"
No Discharge

I have performed the above inspection on this pond and do hereby
certify it to be a true and accurate representation of the pond
at this time.


Inspector

Date

9/20/70

E.I.S Hydrology
Pond Inspection Report

NO: "B"

LOCATION: Bad Boyon

ITEM	REMARKS
(1) Potential Safety Hazards	<u>None</u>
(2) Slope Stability	<u>Stability</u>
(3) Erosion	<u>None</u>
(4) Construction and Maintenance Performance Standards	<u>Good</u>
(5) Recommendations/Comments	<u>None</u>

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

J. P. P. P.
Inspector

Date 10/16/90

POND INSPECTION REPORT

POND:

B

LOCATION:

Barbours

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Good

(3) Erosion

None

(4) Construction and Maintenance Performance Standards

Good

(5) Recommendations/Comments

None

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]

7/19/89

POND INSPECTION REPORT

LOCATION: Deer Canyon

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

Minor - on bank

(4) Construction and Maintenance Performance Standards

Good

(5) Recommendations/Comments

No Recommendations

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]
8/15/89
Date

POND INSPECTION REPORT

POND:

B

LOCATION:

Beaumont

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance Performance Standards

Stable

(5) Recommendations/Comments

No Overlays

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]

8/24/89
Date

POND INSPECTION REPORT

POND: R

LOCATION: Rear Entry

ITEM

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Stable

(3) Erosion

None

(4) Construction and Maintenance Performance Standards

Good - Pond Clean
1' Dry

(5) Recommendations/Comments

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]

10/25/98
Unit

POND INSPECTION REPORT

POND: Pond "B"

LOCATION: CLP

<u>ITEM</u>	<u>REMARKS</u>
(1) Potential Safety Hazards	<u>None</u>
(2) Slope Stability	<u>Stable</u>
(3) Erosion	<u>None</u>
(4) Construction and Maintenance Performance Standards	<u>Good</u>
(5) Recommendations/Comments	<u>None</u> <u>No Discharge</u>

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

[Signature]

9/17/88
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

- (1) Potential Safety Hazards None apparent.

- (2) Slope Stability Good.

- (3) Erosion None apparent.

- (4) Construction and Maintenance Performance Standards Sediment level is 7027.8, 2.5' below cleaning level.

- (5) Recommendation/Comments Pond contains 1' standing water.

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9-26-97
Date

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 3	
Permit Number	ACT\015\025	Report Date	12/30/97
Mine Name	Bear Canyon Mine		
Company Name	Co-Op Mining Company		
Impoundment Identification	Impoundment Name	Sediment Pond "C"	
	Impoundment Number	006A	
	UPDES Permit Number	UTG040006	
	MSHA ID Number	N/A	
IMPOUNDMENT INSPECTION			
Inspection Date	12/18/97		
Inspected By	Charles Reynolds		
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Annual/Quarterly		
<p>1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.</p> <p>The pond has been constructed and maintained in accordance with the approved plan. The pond's dam appeared sound with no signs of instability or hazardous conditions.</p>			
Required for an impoundment which functions as a SEDIMENTATION POND.	<p>2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.</p> <p>Sediment storage capacity = 5,282 60% cleanout elevation = 7,030.3 100% sediment storage elevation = 7,031.4 Existing sediment elevation = 7,027.9</p>		
	<p>3. Principle and emergency spillway elevations.</p> <p>Principle spillway elevation = 7,032.3 Emergency spillway elevation = 7,035.3</p>		

4. **Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

The pond contains 3-4 inches of water. No discharge has occurred in 1997. No water samples were taken. No erosion problems were observed on the pond bank. The sediment pond was last cleaned out in June, 1996.

5. **Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

The existing storage capacity was 4,795 cubic feet, which is greater than the 126 cubic feet required by the approved plan.

**Qualification
Statement**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: _____

Charles Reynolds

Date: _____

12/30/97

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)

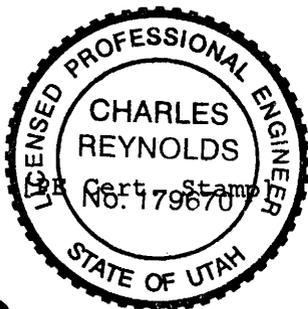
YES

NO

1. Is impoundment designed and constructed in accordance with the approved plan? X
2. Is impoundment free of instability, structural weakness, or any other hazardous condition? X
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection? X

COMMENTS AND OTHER INFORMATION

Certification Statement:



I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Charles Reynolds, P.E.
 (Full Name and Title)

Signature: Charles Reynolds Date: 12/30/97

P.E. Number & State: 179670 - Utah

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

- | | | |
|-----|---|--|
| (1) | Potential Safety Hazards | <u>None apparent.</u>

_____ |
| (2) | Slope Stability | <u>Good.</u>

_____ |
| (3) | Erosion | <u>None apparent.</u>

_____ |
| (4) | Construction and Maintenance
Performance Standards | <u>Pond is functioning well, and is receiving
minimal amounts of sediment.</u>

_____ |
| (5) | Recommendation/Comments | <u>The pond is dry.</u>

_____ |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6-27-97
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

The top of the snow is approximately
4' below decant level.

(5) Recommendation/Comments

The pond is covered with snow.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/26/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Sediment cleanout has been completed.

Sediment level is 7027.2, 5.1 ft. below the
decant level.

(5) Recommendation/Comments

Pond is functioning well.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6/28/96
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Sediment level is 7027.2, 5.1 ft. below the
decant level.

(5) Recommendation/Comments

Pond is dry.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9/2/96
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Pond cleanout should be completed.

Pond is dry.

(5) Recommendation/Comments

Complete Sediment cleanout.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3/28/96
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good. No sloughage has occurred
on the pond slopes.

(3) Erosion

2 Minor erosion channels are beginning
to form. The area should be reseeded
and watched for any increase in erosion.

(4) Construction and Maintenance
Performance Standards

Pond is Frozen. Ice elev. is approx. 7028.
Sediment elev. is approx. 7027, 3.3' below
60% sediment cleanout level.

(5) Recommendation/Comments

Entire pond should be reseeded in
1995.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3-2-95
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good. Slopes are beginning to show
some vegetative growth.

(3) Erosion

No major erosion is apparent on the slopes

(4) Construction and Maintenance
Performance Standards

Water level is 7029.3, 3 ft. below the
decant level.

(5) Recommendation/Comments

Pond appears to be functioning well.

No discharge has occurred from the pond.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

5-31-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

- (1) Potential Safety Hazards None apparent.
- (2) Slope Stability Good. Slopes are moderately vegetated.
- (3) Erosion None apparent.
- (4) Construction and Maintenance Performance Standards Sediment level is near 60% cleanout level from 8/23 Bear Creek flooding, during which pond discharged.
- (5) Recommendation/Comments Pond functioned well. Pond should be cleaned as soon as room is available in the temporary storage area.

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9-29-95
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None apparent.

(2) Slope Stability

Good. Slopes are moderately vegetated.

(3) Erosion

None apparent.

(4) Construction and Maintenance
Performance Standards

Sediment elev. is 7030. Pond is in the
process of being cleaned.

Pond is dry.

(5) Recommendation/Comments

Complete Sediment cleanout.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12-29-95
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon

- | | | |
|-----|---|--|
| (1) | Potential Safety Hazards | <u>None</u>

_____ |
| (2) | Slope Stability | <u>Good.</u>

_____ |
| (3) | Erosion | <u>None Apparent</u>

_____ |
| (4) | Construction and Maintenance
Performance Standards | <u>Pond is dry.</u>

_____ |
| (5) | Recommendation/Comments | <u>None</u>

_____ |

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

3/28/94
Date

Mangum Engineering Consultants

Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon

(1) Potential Safety Hazards None Apparent

(2) Slope Stability Good.

(3) Erosion None.

(4) Construction and Maintenance Performance Standards Pond is dry.

(5) Recommendation/Comments

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6-20-94
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: BEAR CANYON

- | | | |
|-----|---|---|
| (1) | Potential Safety Hazards | <u>None apparent.</u>

_____ |
| (2) | Slope Stability | <u>Good. Some vegetation was observed</u>
<u>from 1993 seeding.</u>
_____ |
| (3) | Erosion | <u>None apparent.</u>

_____ |
| (4) | Construction and Maintenance
Performance Standards | <u>Pond is Dry.</u>

_____ |
| (5) | Recommendation/Comments | <u>None.</u>

_____ |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

9/26/94
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon Mine

(1) Potential Safety Hazards

None Apparent.

(2) Slope Stability

Good. Slopes covered with snow and
sparse vegetation.

(3) Erosion

None Apparent.

(4) Construction and Maintenance
Performance Standards

Good. Pond is frozen with snow covering
the bottom and slopes.

(5) Recommendation/Comments

Ice level is 7028, 2.3 feet below the
sediment cleanout level.

Ice covered with 3 in. of snow.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/26/94
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon

(1) Potential Safety Hazards

None apparent

(2) Slope Stability

Slopes currently under construction.

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

Topsoil has been stripped from surface.

Pond is being constructed in accordance
with the approved design.

(5) Recommendation/Comments

Pond embankments are being constructed
with cut only. Embankment consists of
native undisturbed ground.

I have performed the above inspection on this pond and do hereby certify
it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

6/29/93
Date

Mangum Engineering Consultants
Pond Inspection Report

POND: Sediment Pond "C"

LOCATION: Bear Canyon

- | | | |
|-----|---|---|
| (1) | Potential Safety Hazards | <u>None</u>

_____ |
| (2) | Slope Stability | <u>Good</u>

_____ |
| (3) | Erosion | <u>None Apparent</u>

_____ |
| (4) | Construction and Maintenance
Performance Standards | <u>Pond is dry, with a minimal amount
of snow.</u>
<u>No discharge has occurred.</u> |
| (5) | Recommendation/Comments | <u>Pond received interim seeding in
October of this year.</u>
_____ |

I have performed the above inspection on this pond and do hereby certify it to be a true and accurate representation of the pond at this time.

Charles Reynolds
Inspector

12/23/93
Date

WA/015/004#7

Ken, The file

5

B.I.S. Hydrology
Road Inspection Report

NO: Beav

LOC: Beav Canyon

DATE: _____

REMARKS

(1) Potential Safety Hazards

None

(2) Slope Stability

Shld - 3" Snow
Cover

(3) Erosion

None Apparent

(4) Construction and Maintenance
Performance Standards

Road surface covered
at 4' below full
way

(5) Recommendations/Comments

No Changes

I have performed the above inspection on this road and do hereby
certify it to be a true and accurate representation of the road
at this time.

[Signature]
Inspector

Date 1/8/90

Pond Inspection -

Trail - 8/8/91 - 9:00 -

Pond Dry - Stable? Clean
No Discharge, Erosion
None -

Basin A - Muddy - No Discharge
Stable, No Erosion

Basin B Water @ 40% No Discharge
Stable, A Minor Erosion
on inlet.

No Safety Problem on any pond,

[Signature]

817.46

SEDIMENTATION POND DESIGN

#9

Height of dewatering device (maximum sediment storage)	35"	} 58" = 4.8 ft = 4.44F (200' x 4.8)
Height of water storage (dewatering level to spillway)	22"	
Freeboard (1' minimum and 4" allowance for water swell)	16"	
Total settled height of embankment	<u>74"</u>	
Construction height (allowance for settling)	80"	
Pond area	1 acre	
Disturbed area	4 acres	
Sediment storage (.75 per acre of disturbed area)	3 Acre feet	
10 year 24 hour rainfall experience	2.4 in.	
	times 4 acres	
	<u>9.6</u> =	.8 acre feet
Rainfall runoff	75% =	.6 acre feet
Water storage capacity of pond		1.83 " "
% of required capacity		300 %

Pond design is oversized in the event of future expansion, and for maximum evaporation. Dewatering device will consist of a vertical stand pipe connected to an outlet pipe with a manually operated valve, and will be installed on opposite end of pond from pond inlet. A skimming device will be placed at the pond inlet. Spillway will be 16" below top of settled height, 48 inches wide, and will include a concrete apron and/or other device to prevent erosion.

LOCATION: BEAR CREEK CANYON PORTAL

Co-op Mining Company ACT/015/025

PRECIPITATION:

10 year-24 hour 2.0 inch; 25 year-6 hour _____ inch

AREA:

Disturbed Area 5.4 acres

Undisturbed Area 0.0 acres

Pond Area 0.5 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area 0.49 acre-feet

Discharge Undisturbed Area 0.0 acre-feet

Direct Precipitation 0.0833 acre-feet

Sediment Storage 0.54 acre-feet

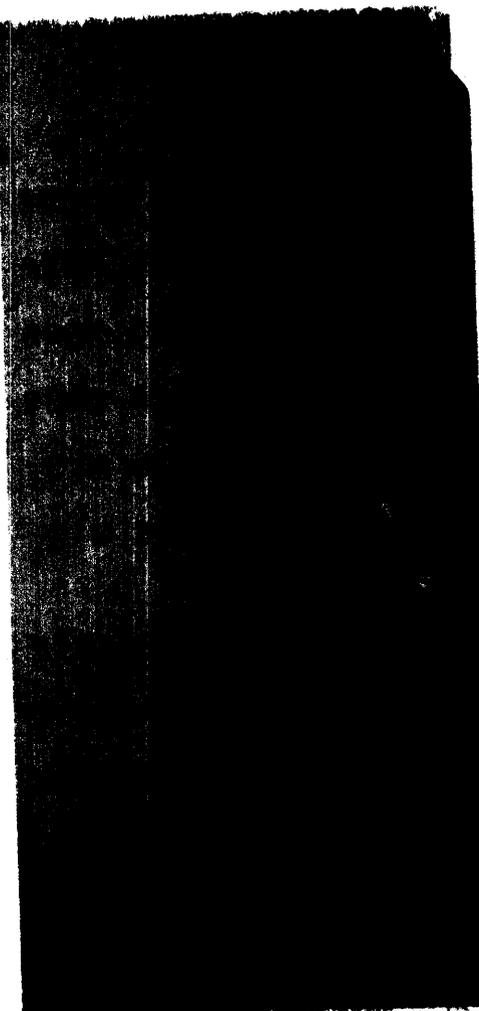
Total Storage 1.115 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs



CULVERT PROGRAM FORMATS

MINE NAME: BEAR CREEK CANYON PORTAL

WATERSHED: BEAR CREEK STREAM CROSSING

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.405

Y= 3.08%

S= 3.33

L= 12,000'

AREA (square mile): 2.65

DURATION OF STORM (hour): 6

RAINFALL DEPTH (inch): 1.5

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

SCS

PEAK DISCHARGE:

qp= 128.59 cfs Culvert Sizing: _____ inches

VOLUME:

Q= 0.1667 inches

CULVERT PROGRAM FORMATS

MINE NAME: BEAR CREEK CANYON PORTAL

WATERSHED: Adjacent to Sed. pond

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.178

Y= 55.676

S= 3.33

L= 2625

AREA (square mile): 0.06

DURATION OF STORM (hour): 6

RAINFALL DEPTH (inch): 1.5

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

SCS

PEAK DISCHARGE:

qp= 3.25 cfs Culvert Sizing: _____ inches

VOLUME:

Q= 0.1667 inches

TIME OF CONCENTRATION DETERMINATION
 * * * * *

MINE: BEAR CREEK CANYON PORTABLE
 PERMIT: ACT/015/025
 STRUCTURE: STREAM CROSSING (BEAR CREEK)
 DATE: _____

STRUCTURE	CURVE NUMBER	S	l(ft)	H(ft)	y(%)	L(hrs)	Tc(hrs)
Stream Crossing	70	4.29	12000	370	3.08	0.2797	0.466
"	75	3.33	12,000	370	3.08	0.243	0.405
"	80	2.50	12,000	370	3.08	0.209	0.349
Pond	70	4.29	2,625	1460	55.6	0.123	0.205
"	75	3.33	2,625	1460	55.6	0.107	0.178
"	80	2.50	2,625	1460	55.6	0.092	0.154

KENT'S FORMULA

$$T_c = L/0.6, \text{ hours}$$

L = watershed lag, hours

$$L = \frac{l^{0.8} (S + 1)^{0.7}}{1900 y^{0.5}}$$

l = length of the longest stream channel (ft)

S = (1000/CN) - 10, inches

y = average watershed slope in percent

Reference: Kent, K. M. 1973. A method of Estimating Volume and Rate of Runoff in Small Watersheds. U.S.D.A., SCS-TP-149 (Revised April 1973). ca. 80 pp.

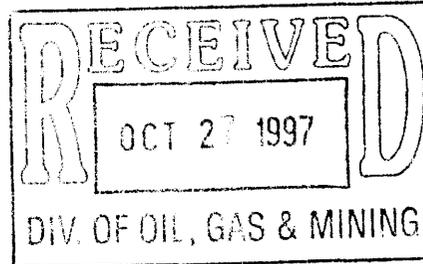
CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

Coal Program
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801



October 24, 1997

ACT/015/025
#7

To Whom It May Concern,

Re: Water Monitoring Report, 3rd Quarter, 1997, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/025, Emery County, Utah

Enclosed is the Water Monitoring Report for the 3rd Quarter of 1997.

If you have any questions, please call me at (435) 687-2450.

Thank You,

Charles Reynolds,
Compliance Coordinator

Enclosure (s)

CO-OP MINING COMPANY

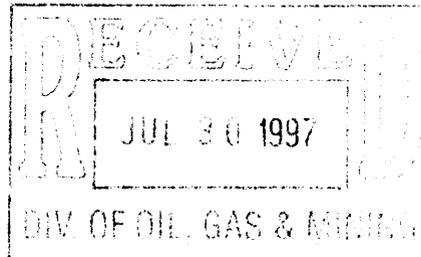
P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

July 23, 1997

Coal Program
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801



To Whom It May Concern,

Re: Water Monitoring Report, 2nd Quarter, 1997, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/025, Emery County, Utah

ACT/015/025 #7

Enclosed is the Water Monitoring Report for the 2nd Quarter of 1997.

If you have any questions, please call me at (801) 687-2450.

Thank You,

A handwritten signature in cursive script that reads "Charles Reynolds".

Charles Reynolds,
Compliance Coordinator

Enclosure (s)

CO-OP MINING COMPANY

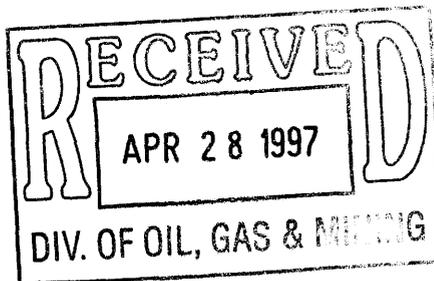
P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

April 23, 1997

Coal Program
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801



To Whom It May Concern,

Re: Water Monitoring Report, First Quarter, 1997, Bear Canyon Mine, ACT/015/025,
Trail Canyon Mine, ACT/015/021, Emery County, Utah

Copy letter

#7

Enclosed is the Water Monitoring Report for the 1st Quarter, 1997. No Water Monitoring was required in the First Quarter for the Trail Canyon Mine.

If you have any questions, please call me at (801) 687-2450.

Thank You,

A handwritten signature in cursive script that reads "Charles Reynolds".

Charles Reynolds,
Resident Agent

Enclosure (s)

jo

1996 ANNUAL IMPOUNDMENT CERTIFICATION REPORT

1. I, hereby certify, in accordance with the approved plan that with respect to the following facility.

Name of Permittee: Co-Op Mining Company
Permit No.: ACT/015/025
Mine Name: Bear Canyon Mine

Water Impoundment Identification: Sediment Pond "C"
Inspection Date: 6-29-96

2. I, or persons under my supervision have conducted adequate inspections of the maintenance of the structure; and
3. The maintenance has been performed in accordance with the Utah State Coal Program; and
4. The attached report is certified in accordance with the rules of professional conduct promulgated by the Utah Board of Examiners for Engineers; and
5. The attached report addresses the following points:
 - (a) any appearances of instability, structural weakness or other hazardous conditions
 - (b) depth and elevation of impoundment water;
 - (c) existing storage capacity;
 - (d) existing or required monitoring procedures and instrumentation; and
 - (e) any other aspects of the structure affecting stability.
6. Comments

Inspection was completed following removal of sediment material

1995 ANNUAL IMPOUNDMENT CERTIFICATION REPORT cont.

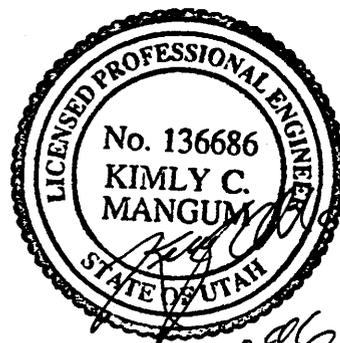
On 29 June 1996, an inspection of Co-Op Mining Company, Bear Canyon Mine Sediment pond "C" revealed the following:

- A. The pond has been constructed and maintained in accordance with the approved plan.
- B. The pond's dam appeared sound with no signs of instability or hazardous conditions.
- C. The sediment elevation was 7027.2 ft, 5.1 feet below sediment cleanout level (7030.3 ft (60 percent cleanout level)). The pond was dry.
- D. The existing storage capacity was 5,122 cubic feet which is greater than the 126 cubic feet required by the approved plan.
- E. Ponds are inspected quarterly for structural problems. Discharge monitoring is conducted monthly and reports are submitted to the Division and Utah Department of Health (UTG040006, Utah General Permit for Coal Mining. Discharge Point 006) as required in the approved plan. No discharge has been reported during 1996 as of this date.

Based on this field inspection, Pond "C" has been certified as required by R645-301-514.310 through R645-301-514.313. I do hereby certify that the above information is a true and accurate representation of the pond at this time.

Kimly C. Mangum
name

7-10-96
date



CO-OP MINING COMPANY

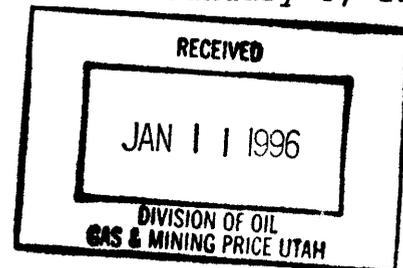
P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

Kenny then file
ACT/015/025 #7
January 8, 1996

Peter Hess
Utah Division of Oil, Gas & Mining
C.E.U. Box 169, 451 East 400 North
Price, Utah 84501-2699



Mr. Hess,

Re: Water Monitoring Report, Fourth Quarter, 1995, Bear Canyon
ACT/015/025, Emery County, Utah

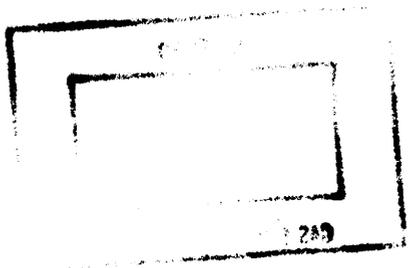
Enclosed is the Water Monitoring Report for the Fourth Quarter, 1995.

If you have any questions, please call me at (801) 687-2450.

Thank You,

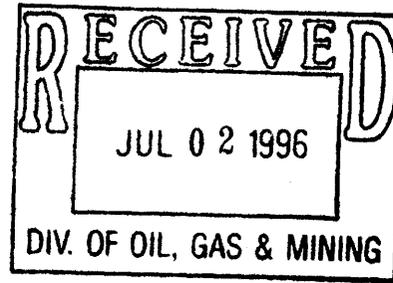
Charles Reynolds
Charles Reynolds,
Environmental Coordinator

Enclosure(s)



July 1, 1996

James Smith
Reclamation Specialist
Division of Oil, Gas, and Mining
1594 West North Temple, Suite 1210
P.O. Box 145-801
Salt Lake City, UT 84114



Subject: Compound Concentration and Isotopic Results from Groundwater and Mine Discharge Samples collected at the CO-OP Bear Canyon Mine.

Mr. Smith:

SECOR International Incorporated (*SECOR*) has received the analytical and isotopic results from the water samples collected from the Bear Canyon Mine. The samples collected from the mine include:

- 173558 - 7 ▶ Mine Discharge - Major Cation, Anions, Metals, Oil & Grease, TDS, Alkalinity, tritium, and stable isotopes.
- 173556 - 2 ▶ 3rd West South - Major Cation, Anions, Metals, Oil & Grease, TDS, Alkalinity, tritium, and stable isotopes.
- 173557 - 2 ▶ 3rd West Bleeders - Major Cation, Anions, Metals, Oil & Grease, TDS, Alkalinity, tritium, and stable isotopes.

The following Laboratories were used for the compound and isotopic analysis

Laboratory	Analysis
Quanterra Environmental Services 4955 Yarrow Street Arvada, CO 80002 (303) 421-6611	Cations, anions, metals, oil and Grease, and alkalinity
University of Miami Tritium Laboratory 4600 Rickenbacker Causeway Miami, FL 33149-1098 (305) 361-4100	Enriched tritium

GEOCHRON Laboratories
711 Concord Avenue
Cambridge, MA 02134
(617) 876-3691

Oxygen stable isotope ratio analysis (SIRA),
Hydrogen SIRA, carbon SIRA, and sulfur
and sulfide SIRA

During the underground sampling at the Bear Canyon Mine, coal samples were collected from the Bear Canyon and Tank Seams. However, the amount of sulfides in the coal was insufficient for separation and analysis so the coal samples were not delivered to the laboratory for Analysis.

Please call me at (801) 266-7100 if there are any questions concerning the analytical data from the samples collected in the CO-OP Bear Canyon Mine.

Sincerely
SECOR International Incorporated



Peter J. Nielsen, R.G.
Project Hydrogeologist

cc: Darrel Leamaster
Castle Valley Special Services

Attachments

ATTACHMENT 1
GROUNDWATER MAJOR ANALYTICAL RESULTS

CO-OP MINING COMPANY

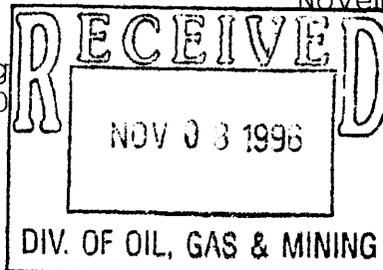
P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

November 5, 1996

Pamela Grubaugh-Littig
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801



Ms. Grubaugh-Littig,

Re: Water Monitoring Report, Third Quarter, 1996, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/021, Emery County, Utah

Ken then file #7

Enclosed is the Water Monitoring Report for the Third Quarter, 1996. No water monitoring was required in the Third Quarter for the Trail Canyon Mine.

If you have any questions, please call me at (801) 687-2450.

Thank You,

A handwritten signature in cursive script that reads "Charles Reynolds".

Charles Reynolds,
Environmental Coordinator

Enclosure(s)

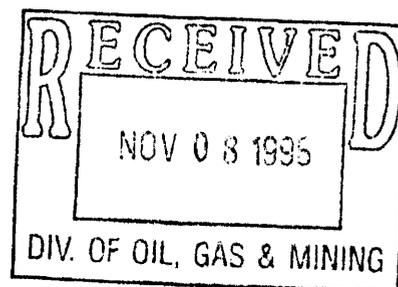
CO-OP MINING COMPANY

QUARTERLY WATER MONITORING REPORT

THIRD QUARTER, 1996

BEAR CANYON MINE
ACT/015/025

TRAIL CANYON MINE
ACT/015/021



CO-OP MINING COMPANY

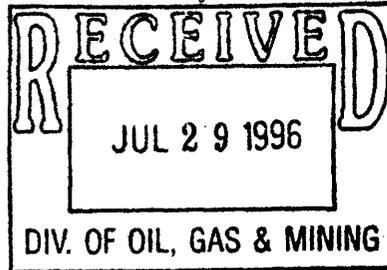
P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

Pamela Grubaugh-Littig
Utah Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

*Ante to Ken, Mary
file ACT/005/025*
July 25, 1996



#7

Ms. Grubaugh-Littig,

Re: Water Monitoring Report, Second Quarter, 1996, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/021, Emery County, Utah

Enclosed is the Water Monitoring Report for the 1st Quarter, 1996. No water monitoring was required in the First Quarter for the Trail Canyon Mine.

If you have any questions, please call me at (801) 687-2450.

Thank You,

Charles Reynolds

Charles Reynolds,
Environmental Coordinator

Enclosure(s)

CO-OP MINING COMPANY

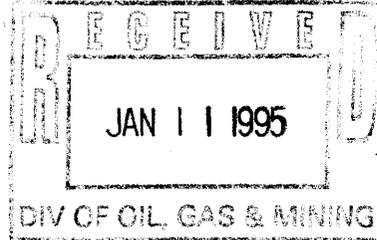
P.O. Box 1245
Huntington, Utah 84528



(801) 381-5238
Coal Sales (801) 381-5777

January 9, 1995

Pamela Grubaugh-Littig
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203



*Routed to
Ken Ren
file
ACT 015/025
#7*

Ms. Grubaugh-Littig,

Re: Water Monitoring Report, Fourth Quarter, 1994, Bear Canyon
Mine, ACT/015/025, Trail Canyon Mine, ACT/015/021, Emery
County, Utah

Enclosed is the Water Monitoring Report for the Fourth Quarter, 1994.

If you have any questions, please call Charles Reynolds at (801) 687-2450.

Thank You,

Wendell Owen,
Resident Agent

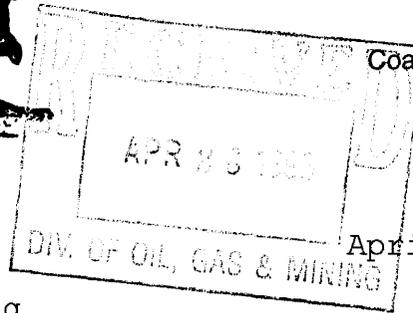
Enclosure(s)
cr

CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777



April 18, 1996

Pamela Grubaugh-Littig
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Ren, Transfer

Ms. Grubaugh-Littig,

Re: Water Monitoring Report, First Quarter, 1996, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/021, Emery County, Utah

#7

Copy to #7

Enclosed is the Water Monitoring Report for the 1st Quarter, 1996. No water monitoring was required in the First Quarter for the Trail Canyon Mine.

If you have any questions, please call Charles Reynolds at (801) 687-2450.

Thank You,

Wendell Owen

Wendell Owen,
Resident Agent

Enclosure(s)
cr

CASTLE VALLEY SPECIAL SERVICE DISTRICT

P.O. BOX 877
CASTLE DALE, UTAH 84513
TELEPHONE (801) 381-5333

March 28, 1996

DORR W. HANSON
Chairman
DARREL V. LEAMASTER
Manager

C. W. Mining
P. O. Box 300
Huntington, Utah 84528

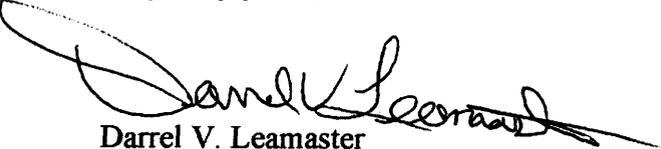
Attn: Wendell Owen

Re: Monthly Flow Report
Big Bear Spring

Dear Mr. Owen:

The flow rate recorded from the Big Bear Spring for the month of January was 5,975,000 gallons. This is an average flow of 143 gallons per minute. For the month of February the spring flow was 5,924,000 gallons. This is an average flow of 142 gallons per minute.

Very truly yours,


Darrel V. Leamaster
District Manager

CO-OP MINING COMPANY



P.O. Box 1245
Huntington, Utah 84528

Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

April 24, 1995

Pamela Grubaugh-Littig
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Ms. Grubaugh-Littig

Re: Water Monitoring Report, First Quarter, 1995, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/021, Emery County, Utah #7

See then file
Copy to
#7

Enclosed is the Water Monitoring Report for the First Quarter, 1995.

If you have any questions, please call Charles Reynolds at (801) 687-2450.

Thank You,

Charles Reynolds
Charles Reynolds,
Environmental Coordinator

Enclosure(s)

CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



Office (801) 687-2450
FAX (801) 687-5238
Coal Sales (801) 687-5777

September 12, 1995

Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Ut 84114-4870

Re: NPDES General Permit #UTG040006, August, 1995, Co-Op Mining Company, Emery County, Utah

Steve McNeil,

Co-Op Mining Company has had a report of discharge relative to the above permit during the month of August, 1995. Enclosed are the NPDES reports.

On August 22, 1995, Co-Op Mining Company received a storm event at 4:15 in the afternoon which resulted in 0.96 inches of rain in a duration of 50 minutes. A flash flood resulted in Bear Creek carrying rocks and debris which plugged the uppermost culvert in the creek at the Bear Canyon minesite. The creek flooded its banks and flowed into Sediment Pond "B" (003) at an estimated rate of 90 cfs and then back out the emergency spillway. The storm event filled Pond "A" (002) and Pond "C" (006) to near capacity, but no discharge occurred.

I notified you by telephone on August 23, 1995 of the upset condition, and we proceeded to unplug the Bear Creek culvert above the ponds.

However, at 12:15, another storm event occurred which resulted in 1.01 inches of precipitation, 0.75 inches occurring in a duration of 15 minutes. With the debris only partially removed from the Bear Creek culvert, the Creek again flooded its banks and flowed through Pond "B" (003). In addition, the flow which did pass through the culvert carried debris which partially blocked a culvert downstream above Pond "C" (006). This culvert remained functional, but did not handle the entire flow of the flood, and a small portion flowed from the Creek bed into Pond "C" (approx. 80 gpm).

In addition, excessive flows from offsite drainage areas above the minesite flooded into the minesite drainage area and into Pond "A" (002). Because both Ponds "A" and "C" were filled to near capacity, this storm resulted in discharge through the emergency spillways.

As a result of the back to back storm events and resulting floods of Bear Creek, points 002, 003 and 006 all discharged exceedances of settleable solids as well as total iron levels.

All culverts and ponds have been maintained and are again functional.

If you have any questions, please contact me at (801) 687-2450.

Sincerely,

Charles Reynolds
Charles Reynolds
Compliance Coordinator

Enclosure(s)

CO-OP MINING COMPANY



P.O. Box 1245
Cannonville, Utah 84528

(801) 381-5238
Coal Sales (801) 381-5777

February 16, 1994

Department of Environmental Quality
Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, Ut 84114-4870

FEB 17 1994

Re: NPDES General Permit #UTG040006, October, 1993, Co-Op Mining Company, Emery County, Utah

To Whom It May Concern,

It has recently come to our attention that the October DMR report for discharge point 004 contained a misprint in the original reporting with regard to the reporting of pH.

The report gave a pH daily maximum of 9.6. The correct value which was measured was 7.6. Please correct your records accordingly. We apologize for the inconvenience.

If you have any questions, please contact me at (801) 381-2450.

Sincerely,

Charles Reynolds
Compliance Coordinator

cc: EPA, Region VIII
UDOGM

CO-OP MINING COMPANY

P.O. Box 1245
Muntington, Utah 84528



(801) 381-5238
Coal Sales (801) 381-5777

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Route to Tom, Susan ?
April 12, 1994
Ken
Then file #7

ACT/015/025

APR 13 1994

Ms. Grubaugh-Littig,

Re: Water Monitoring Report, First Quarter, 1994, Co-Op Mining Company, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/021, Emery County, Utah

Enclosed is the First Quarter Water Monitoring Report for 1994 for the Bear Canyon and Trail Canyon Mines.

If you have any questions, please call Charles Reynolds at (801) 381-2450.

Thank You,

Wendell Owen
Wendell Owen,
Resident Agent

CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



(801) 381-5238
Coal Sales (801) 381-5777

JUL 21 1994

July 18, 1994

Pamela Grubaugh-Littig
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Ms. Grubaugh-Littig,

*Route to Tom [unclear]
then file ACT/015/025*

Re: Second Quarter Water Monitoring Report, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/105/021, Emery County, Utah # 7

Enclosed is the Quarterly Water Monitoring Report for the second quarter, 1994 for Co-Op Mining Company.

If you have any questions, please call Charles Reynolds at (801) 381-2450.

Thank You,

Wendell Owen
Wendell Owen,
Resident Agent

Enclosure(s)
cr

Appendix to S. B. Montgomery report dated January 19, 1993

RESPONSE NOTES of S. Bryce Montgomery, Geologist, on

"REVISED HYDROGEOLOGIC EVALUATION OF THE BEAR CANYON MINE PERMIT AND PROPOSED EXPANSION AREAS" dated July 23, 1992, by EARTHFAX ENGINEERING, INC. for CO-OP MINING COMPANY, Salt Lake City, Utah

Page 2-6, Par. 2: Increased flows of water will occur in the CO-OP Bear Canyon Mine as development continues to the north. Presently, flows discharged from the mine are reported to be 300 gpm. This is being subtracted from the groundwater system and diverted to the surface.

Par. 4: It is stated the mine water collected in the mine sumps is discharged to Bear Creek. What about the water not discharged from the mine? Would it not flow down-gradient into the caved mine workings and rock joint system?

Page 2-7, Par. 1: In the past, gypsum dust was used in the mine until lately. This gypsum dust is partially dissolved into the ground water, and that ground water remaining in and moving through the mine workings is degraded, and thence as it moves down-gradient and mixes with other recharge water degrades the groundwater recharge to the Big Bear Springs and possibly the Birch Spring.

Page 2-7, Par. 4: I question how they are using the term "regional aquifer" and the statement that the "regional aquifer in the study area is actually below the Star Point/Mancos Shale contact." The top of the Mancos Shale is the base of the actual regional aquifer. Locally within the bottom of a canyon which has been eroded into the Mancos Shale, pervious alluvial fill there could provide a limited perched aquifer lower than the original top of the Mancos Shale formation.

Par. 5: Why are not the drilling logs available for all of the exploratory holes drilled by CO-OP Mining Co.?

Page 2-9, Par. 2: The statement that previous exploratory holes drilled in the mine to the top of the Mancos Shale did not encounter ground water is contradictory to the latest three holes drilled which did encounter ground water. If the 300 gpm now being discharged from the mine was not originally a part of or tributary to the regional aquifer, before the mine encountered it, where did it flow to and exit? The regional aquifer is that from which the Big Bear and Birch Springs are discharging!

Par. 3: Earthfax discounts that the reported water

encountered in the four Nevada Power drill holes north of the Bear Canyon Mine was true ground water, and infers that it was drill water, yet the Bear Canyon Mine is reported to now be producing 300 gpm. Where is this water coming from? Before the mine's existence, where did this 300 gpm, now intercepted, discharge to?

Page 2-10, Par. 1: Earthfax acknowledges that most of the recharge from snow-melt enters the aquifer system through fractures. If this is so, cannot ground water encountered in the mine flow through such fractures to the aquifer within the Star Point Sandstone?

Par. 3: Earthfax does not recognize or take into consideration the re-diverted recharge from the south end of the Bear Canyon Mine into vertical joints and to the cliff face, and thence into vertical joints to the Big Bear Spring.

Page 2-12, Par. 1: Earthfax acknowledges that the movement of ground water in the study area is strongly controlled by faults and the dip of the strata (referring to Danielson of the U. S. G. S., stating that "most of the water movement in the study area is through fractures, faults, and partings between the beds."). And at the end of this paragraph Earthfax uses Danielson's statement: "If the movement occurs on the interior of the mountain, the lateral movement continues until other vertical permeable lithologies or zones of fracturing are encountered."

Par. 2: The statement "Fracture-enhanced permeability allows water to pass vertically through strata which would normally impede flow" and the rest of this paragraph acknowledges that "some hydraulic connection exists between the perched aquifers and the proposed regional aquifer; such transfer occurs as downward unsaturated flow from perched aquifers to the regional aquifer along the fractures and faults." What is to prevent this from being so for the ground water that has been encountered in the CO-OP Mine?

Par. 3: Earthfax acknowledges that "the major source of quantified discharge is springs." Thus, the 300 gpm now being produced in the Bear Canyon Mine, formerly discharged as springs!

Page 2-13, Figure 2-4: Earthfax's diagram shows the "regional aquifer" extending upward from the Star Point Sandstone into the Blackhawk Formation, and infers that the perched aquifers are in part supplying recharge to the regional aquifer. This diagram is correct in its presentation and was copied in the main from Figure 8 of G. C. Lines of the U. S. G. S. in Water-Supply Paper 2259. Yet, it contradicts Earthfax's statements in several places of their report stating that the regional aquifer is below the

Star Point Sandstone.

Page 2-15, Par. 1: Earthfax acknowledges that Birch and Big Springs discharge through fractures and faults from the lower member of the Star Point Sandstone.

Par. 2: Earthfax states that according to Wendell Owen, the Bear Creek Mine had water inflow to the old abandoned workings prior to the start of operations by CO-OP Mining Co. in 1982. I understand that Federal Mine Inspectors also found that CO-OP Mining Co. has also since discharged some in-mine-encountered water flows into their abandoned workings, in the south end of the properties.

Par. 3: Acknowledgement is made that 110 gpm of water has been encountered in the North Main Entries of the Bear Canyon Mine: "This flow occurred mainly from fractures and roof bolt holes, and has remained essentially constant since it was first encountered." Also, the statement is made that the water in this fracture system of the Blackhawk Formation is directed in its flow "to the southeast, along the dip of the beds."

Page 2-26, Par. 1: The statement is made that water encountered in the mine, not used for in-mine and culinary purposes, is discharged to Bear Creek. This is subtracting ground water from the original groundwater system, from which Big Bear and Birch Springs are discharging.

Page 2-17, Table 2-2: Electrical conductivity of waters associated with Big Bear Spring (seepage and flows from the cliffs above it and roof drippers from the mine 3rd West Entries) show that seepage water is picking-up minerals as it moves through and over the involved shaley formations and/or through abandoned mine workings.

Page 2-18: All paragraphs here describe the three sandstone units of the Star Point Sandstone, being the Spring Canyon at the top, Storrs in the middle, and Panther in the base. The Panther is the most permeable and Big Bear and Birch Springs discharge from it. The data presented shows both confined and unconfined conditions in all three units, beneath the three recent test holes 1A, 2 and 3.

Page 2-19, Par. 3: This states that "monitoring stations are sampled four times per year;" why not more frequent?

Page 2-21, Par. 1: The conclusion expressed that because the water in Birch Spring differs from the Bear Canyon Mine water, its not hydraulically connected or chemically related to the other waters, does not take into consideration that other waters such as from the abandoned Trail Canyon Mine are likely contributing to that spring.

Par. 2: The statement: "This difference in

patterns suggest that the mine water is similar, but not related to the spring water in the vicinity of the mine" seems contradictory. If it is similar, why is it not related?

Par. 4: Why were all of the three recent wells completed in only the Spring Canyon Tongue of the Star Point Sandstone, when it was known that Birch and Big Bear Springs were discharging from the Panther Tongue or Member?

Page 2-24, Par. 4: The seepage on the slope above Big Bear Springs not only occurs at the contact between the base of the Blackhawk Formation and the top of the Star Point Sandstone, but also out of the base of the upper member of the Star Point Sandstone (Spring Canyon Member). The estimated flow of 10 gpm is much less than what was flowing in the winter of 1990-91. See my photos taken then and presented in my report dated January 28, 1991.

Page 2-27, Figure 2-8: Are these analyses all from the Spring Canyon Member of the Star Point Sandstone? If so why the difference in them?

Page 2-28, Par. 1: Acknowledgement is made here that water spilling from cliff faces on the slope above Big Bear Spring is picking-up additional minerals from dissolution of gypsum in the mudstone present. But, this could also represent water seeping through old workings in the south end of the Bear Canyon Mine where gypsum dust was used.

Page 2-31, Par. 2: The conclusion does not take into consideration ground water spillage from the cliffs above and old mine workings in the south end of Bear Canyon Mine, and also the fact that these years 1984-89 were plentiful water years.

Page 2-31, Par. 3: Even though both of the two mines are stated to be above the regional water table (although this is not so for their north ends), any perched water within them could still move vertically through faults present into the lower aquifer of the Star Point Sandstone.

Page 2-33, Par. 4: Yes, and this water discharged from the mine out of the groundwater system can affect the springs below.

Page 3-1, Par. 1: Why were the three recent wells completed only in the Spring Canyon Member of the Star Point Sandstone, when it was previously known that the Big Bear and Birch Springs were discharging from the lower member (Panther)?

Page 3-6, Par. 4: What about water spilling to the surface

on the slopes above Big Bear Spring and in part infiltrating into fractures contributing to the recharge of Big Bear Spring? Would not this exposed water pick-up additional tritium that is on the ground-surface?

Page 4-1 thru 4-9: Regarding aquifer testing, there is not mention of any encountered jointing in the tested rock which would affect permeabilities and possibly allow leakage around a packer placed in the drill hole, such as for the high transmissivity reported for the Storrs Sandstone Member.

Page 5-3, Par. 3: The conclusion of no evidence to suggest a connection between the ground water intercepted in the Bear Canyon Mine and the Big Bear and Birch Springs is built on a false premise. Why, then if it was known that the Panther Sandstone Member is where Big Bear and Birch Springs are discharging, were the test holes completed only in the upper Spring Canyon Member?

Page 5-4, Par. 2 & 3: Conclusions on differences in quality of mine and spring waters do not take into account all parameters affecting the spring water quality.

Par. 5: Why was not the water collected directly from Big Bear Spring, rather than the slope above? And on next Page 5-6, Par. 1: Why take the out that field equipment was not working right?

Page 5-7, Par. 2: Spillage from the mine into the slope surface would pickup more tritium, before some of it infiltrates into joints exposed at the surface to become part of the recharge to Big Bear Spring.

Page 5-7, Par. 3: Acknowledgement is made here that the faults present could conduct water, yet the conclusion is made that "westward groundwater flow from the graben to Birch Spring would be prevented, either by being conducted out through the fault to be discharged at the surface as a spring, or through occlusion by clayey fault gouge." Why cannot some of the water continue down the fault to be part of the recharge to Birch Spring, which spring discharges from a fault?

Par. 3: Earlier, Earthfax acknowledges that ground water moves vertically through faults in the area, and yet here concludes: . . . "it is unlikely that the faults and fractures conduct a significant volume of water (if any) to the aquifers which supply Birch and Big Bear Springs." The three sandstone units in the Star Point could still be receiving recharge from perched water above, even if they have different static levels!

Page 5-9, Par. 3 & 4: These conclusions ignore the movement

of ground water through vertical joints and faults.

Page 5-10, Par. 2: Not all ground water entering a fault has to spill to the surface in the immediate area. This is a false presumption.

Par. 3: The reason that the TDS in the Birch and Big Bear Springs is higher than the Bear Canyon Mine water is because the spring water has flowed through and over more formation to pick up additional TDS, including gypsum dust used in the old workings of the mines, through which some of the spring recharge water has flowed.

Page 5-11, Par. 1 & 3: These conclusions ignore data presented in the report. Where did the ground water discharge to before, which the Bear Canyon Mine is now intercepting and conveying out of the mine?

Page 5-13, Par. 2 & 4: Earthfax discounts techniques or methods which do not support their apparent, pre-determined conclusion. Cannot water move from the so called "water mine" to the "Trail Canyon Mine," then into the fault from which Birch Spring discharges?

Page 5-14, Par. 4: Is this statement a fact? See previous comment.

Par. 6: See previous comments of mine and photos of seepage water on the slope above Big Bear Springs in the winter of 1990-91.

Page 5-15, Par. 6, and Page 5-16, Par. 1: If the regional aquifer lies below the Star Point Sandstone/Mancos Shale contact, what is the regional aquifer (formation) that Earthfax is talking about? See Figure 2-4 on Page 2-13 of their report.

Page 6-1, Conclusions, Par. 1: Acknowledgement is made that "the groundwater system in the area of the Trail Canyon and Bear Canyon Mines is mainly controlled by geologic structures (faults and fractures) and lithology."

Par. 2: The reason that the three sandstone units of the Star Point Sandstone are not fully saturated in the southern portion of the permit area is that the regional aquifer combines into the Panther Member and spills to the surface as the Big Bear and Birch Springs, and possibly directly into some alluvium in the mouth of Big Bear Canyon.

Page 6-1, Par. 3: This conclusion is not based on the facts presented.

Par. 4: The reason why Big Bear Spring water is higher in tritium is because some of its recharge is from spilling water over the exposed slope, above the spring! The stiff diagrams reflect the total recharge system to the

springs in comparison to water captured within the Bear Canyon Mine.

Page 6-2, Par. 1: Yes, but as the water moves toward the springs it picks up additional TDS.

Par. 3: This is a false conclusion.

Par. 4: This may be so in part, but you can't remove a reported 300 gpm of good quality ground water from the mine, out of the groundwater path of recharge to the springs and not have an affect on those springs located immediately down-gradient.

Par. 6: How regular should the monitoring be? It should be at least monthly and preferably twice a month.

Appendix 7N-G: In this record of the drill logs on the three recently drilled test-monitoring wells, there is not mention of any fractures or joints encountered or seen in cores taken. Were there none? Loss of drilling fluid was reported in DH-3 between 50-60 feet (page 1 of 6), and page 2 of 6 of DH-3, while drilling from 100-178, they reported drilling "blind" with no sample returns! Was not this rock fractured or jointed?



CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



Route to Owen High
Then file ACT/015/025
(801) 381-5238
Coal Sales (801) 381-5777

#7

RECEIVED

FEB 01 1993

DIVISION OF
OIL GAS & MINING

27 January 1993

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig,

Re: Water Monitoring Report, Fourth Quarter, 1992. Bear Canyon Mine, Co-Op Mining Company, ACT/015/025, Emery County, Utah

Enclosed please find the Bear Canyon Water Monitoring Report for the Fourth Quarter, 1992. Also enclosed are copies of the DMR's for the Fourth quarter, 1992.

Thank You,

Wendell Owen
Resident Agent

Enclosure(s)

CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528.



(801) 381-5238
Coal Sales (801) 381-5777

*Route 10 West of here
and file ACT/015/02574*

22 April 1993

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig,

Re: Water Monitoring Report, First Quarter, 1993, Co-Op Mining Company, Bear Canyon Mine, ACT/015/025, Trail Canyon Mine, ACT/015/021, Emery County, Utah.

Enclosed please find the Bear Canyon and Trail Canyon Water Monitoring Report for the First Quarter, 1993.

Thank You,

Wendell Owen
Resident Agent

Enclosure(s)

RECEIVED

APR 26 1993

DIVISION OF
OIL GAS & MINING

**COMMERCIAL TESTING & ENGINEERING CO.**

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300

Member of the SGS Group (Société Générale de Surveillance)

Charles Reynolds
CO-OP MINING
Huntington, Utah 84528

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TELEPHONE: (801) 853-2311
FAX: (801) 853-2479

October 26, 1993

Dear Charles:

Due to a mix-up at CT&E, CT&E sample # 59-13483 (DH-2) has not yet been completely analyzed. Because of a temporary overload and in preparation of a State audit, this sample was sent to CT&E's Denver Lab for analyses. In transit, the sample leaked and the Huntington Lab was not notified. When the Huntington Branch contacted Denver about the analyses, and was notified of the spillage, Huntington began running the sample, but not in time to finish before the end of the month. We, therefore, request an additional week to finish the sample.

Respectfully,

Larry Stout
Branch Manager-Huntington
COMMERCIAL TESTING & ENGINEERING CO.

Mangum Engineering Consultants
388 East Boynton Road
Kaysville, Utah 84037

Co-Op Mining Company
P.O. Box 1245
Huntington, Utah 84528

To Whom It May Concern,

I, Charles Reynolds, hereby certify that I have inspected and observed the placement of the sediment material which has been removed from Pond "A". Material has been placed in the approved storage area in accordance with Appendix 3-K of the Bear Canyon MRP (ACT/015/025). I certify that the fill material is stable.

Charles Reynolds

12/14/93

4 February 1992

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig,

Re: **Water Monitoring Report, Fourth Quarter, 1991. Bear Canyon
Mine, Co-Op Mining Company, ACT/015/025, Emery County, Utah**

#7

Enclosed please find the Bear Canyon Water Monitoring Report
for the Fourth Quarter, 1991.

Thank You,



Charles Reynolds, B.S.

Mining Engineer

cc: Kim Mangum
Co-Op Mining Co.

RECEIVED

FEB 07 1992

DIVISION OF
OIL GAS & MINING



State of Utah
 DEPARTMENT OF ENVIRONMENTAL QUALITY
 DIVISION OF WATER QUALITY

file 015/025
 folder 29/87

Norman H. Bangerter
 Governor
 Kenneth L. Alkema
 Executive Director
 Don A. Ostler, P.E.
 Director

288 North 1460 West
 Salt Lake City, Utah
 (801) 538-6146
 (801) 538-6016 Fax

Reply to: State of Utah
 Division of Water Quality
 Department of Environmental Quality
 Salt Lake City, Utah 84114-4870

February 18, 1992

CERTIFIED MAIL
(Returned Receipt Requested)

Nathan Atwood
 Co-Op Mining Company
 P.O. Box 1245
 Huntington, UT 84528

RE: Negligent DMR Reporting
 Permit No. UTG040006

Dear Mr. Atwood:

February 7, 1992, the Division of Water Quality received the quarterly submitted monthly DMR's from Co-Op Mining Company for the last quarter in 1991. The monthly DMR report for November 1991, reported "sample lost" for parameters TSS, settleable solids, oil and grease, total iron, and TDS. This response does not satisfy the reporting requirements of the permit (see permit Part II D. Reporting of Monitoring Results). Part II I. of the permit outlines non-compliance reporting. We have no record of a 24-hr telephone report from Co-Op of the lost sample incident or a five-day written report of non-compliance.

Please send us a report within thirty days with an explanation for what appears to be negligent reporting.

Sincerely,

Harry Campbell, Environmental Engineer
 Permitting & Compliance Section

HC:hc/st

cc: Carol Campbell, US EPA Region VIII, Water Management Div.
 Claron Bjork, Southeastern Utah District Health Department.
 Dave Ariotti, District Engineer
 Hugh Cline, Division of Oil, Gas and Mining.

RECEIVED

FEB 19 1992

DIVISION OF
 OIL GAS & MINING

S:CO-OP.LTR
 FILE:NPDES

ACT/015/025
original to folder # 2 (cover only)
copies of cover reports to folder # 7

RECEIVED

APR 30 1992

DIVISION OF
OIL GAS & MINING

27 April 1992

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig,

Re: Water Monitoring Report, First Quarter, 1992. Bear Canyon
Mine, Co-Op Mining Company, ACT/015/025, Emery County, Utah

Enclosed please find the Bear Canyon Water Monitoring Report
for the First Quarter, 1992.

Thank You,



Charles Reynolds, B.S.

Compliance Coordinator

cc: Kim Mangum
Co-Op Mining Co.

Route 1015/025 #3
Then file
ACT/015/025 #3

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RECEIVED

July 1992

JUL 09 1992

**DIVISION OF
OIL GAS & MINING**

Dear Ms. Grubaugh-Littig,

Re: Water Monitoring Report, Second Quarter, 1992. Bear Canyon Mine, Co-Op Mining Company, ACT/015/025, Emery County, Utah

Enclosed please find the Bear Canyon Water Monitoring Report for the Second Quarter, 1992. In April, 1992, a violation was written on SBC-3 monitor well because the casing had been damaged. The well was repaired in April. Upon completion of the repairs, the well was bailed dry for sampling. After bailing it once, however, the well has never recovered. Therefore, the second quarter report shows the well dry. It is the opinion of the permittee that the water in the well prior to the violation was due to contributions from surface water. SBC-3 will continue to be monitored to find out if it stays dry or if ground water exists at any time during the year. If you have any questions, please let me know.

Also enclosed are the DMR's for the second quarter, 1992.

Thank You,

Charles Reynolds
Charles Reynolds, B.S.

Compliance Coordinator

cc: Kim Mangum
Co-Op Mining Co.

CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



Copy PAM
Copy for #7
ACT/ors/021
(801) 381-5238
Coal Sales (801) 381-5777

10 July 1992

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig,

This letter is for the submittal of the Water Monitoring Report for the Second Quarter, 1992, prepared by Mangum Engineering Consultants.

Thank You,

Wendell Owen,
Resident Agent

RECEIVED

JUL 13 1992

DIVISION OF
OIL GAS & MINING

MEC

Mangum
Engineering
Consultants

388 East Boynton Road • Kaysville, Utah 84037 • (801) 544-3641

*Route to Hugh, then
fill ACT/015/025 #7*

RECEIVED

NOV 02 1992

DIVISION OF
OIL GAS & MINING

29 October 1992

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig,

**Re: Water Monitoring Report, Third Quarter, 1992. Bear Canyon
Mine, Co-Op Mining Company, ACT/015/025, Emery County, Utah**

Enclosed please find the Bear Canyon Water Monitoring Report
for the Third Quarter, 1992. Also enclosed are copies of the DMR's
for the Third quarter, 1992.

Thank You,



Charles Reynolds, B.S.
Compliance Coordinator

Enclosure(s)
cc: Co-Op Mining Co.

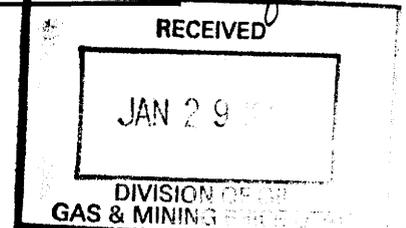
ELS

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

*Paul: please route to file
Tom FYI
then file*



January 28, 1991

*Act 1015/025 #4
Please file 7*

Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

Re: Fourth Quarter Water Data
Co-Op Mining Company

Dear Mr. Braxton:

Please find enclosed the Fourth Quarter 1990 Water data for Co-Op Mining Company.

If you have any questions, please feel free to call me at 801 653-2606.

Sincerely,

Melvin A Coonrod
Melvin A. Coonrod *njc*

MAC/njc

cc: Co-Op Mining Co.
File

ELS

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

Pam route to bib
ACT/015/025
#7

April 23, 1991

Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

Re: First Quarter Water Data
Co-Op Mining Company

Dear Mr. Braxton:

Please find enclosed the First Quarter 1991 Water data for
Co-Op Mining Company.

If you have any questions, please feel free to call me at
801 653-2606.

Sincerely,



Melvin A. Coonrod

MAC/nc

cc: Co-Op
File

RECEIVED

APR 25 1991

DIVISION OF
OIL GAS & MINING

**NORTH EMERY
WATER USERS ASSOCIATION**

*File name from
C. L. Biverton
8/13/91 T Mitchell
P Garbrough: tttt
Box 418
Elmo, Utah 84521
Telephone (801) 653-2649
T. Nielson
DEN*

August 9, 1991

Dianne Nielsen PhD, Director
Utah Department of Natural Resources
Division of Oil, Gas and Mining
155 West North Temple, Suite 350
Salt Lake City, Utah 84180-1203

Reference: CAUSE NO. ACT/015/025

Dear Dr Nielsen:

Monday morning August 5, 1991, North Emery Water Users was advised by the Southeastern State Department of Health to remove the Birch Spring from our water system. The water sample of August 1, 1991 showed high contamination.

The loss of this Spring is critical to North Emery and must be resolved now.

NEWUA feels the Co-Op Mining operations are impacting this Spring. We will appreciate any assistance you can give us in finding and correcting the source of this contamination.

Respectfully,

Menco Copinga

Menco Copinga
President, Board of Directors

Attachment

RECEIVED

AUG 12 1991

DIVISION OF
OIL GAS & MINING

7 2/23/91
Cody, Barbey

LAW OFFICES OF
HALEY & STOLEBARGER

TENTH FLOOR WALKER CENTER
175 SOUTH MAIN STREET
SALT LAKE CITY, UTAH 84111-1956

TELEPHONE
(801) 531-1555
FACSIMILE
(801) 328-1419

ERGE M. HALEY
ERT L. STOLEBARGER
FREY W. APPEL
CAROLYN NICHOLS*
JO CAROL NESSET-SALE
GEOFFREY W. LEONARD, P.E.
RICHARD G. HACKWELL
MICHELE MATTSSON
BLAINE J. BENARD

OF COUNSEL
FRANK E. MOSS**

August 14, 1991

*ALSO ADMITTED IN TEXAS
**ALSO ADMITTED IN WASHINGTON, D.C.

Carl Kingston, Esq.
53 West Angelo Avenue
P.O. Box 15809
Salt Lake City, Utah 84115

RE: Source Monitoring Program for Big Bear and Birch Springs

Dear Mr. Kingston:

As I'm sure you are aware the order entered in ACT/015/025 at paragraph 26 requires water quantity and quality measurements from the lock boxes of my clients. As the order states, that monitoring is to be accomplished at the expense of Co-Op Mining Company. I have conversed with my clients in this regard and we feel you have been dilatory in instituting a program to accomplish this result. I would appreciate it if you would telephone me at your earliest convenience so we might discuss the implementation of this program, including the frequency of tests. So you are aware, my clients prefer that a third party rather than Co-Op Mining Company conduct the tests. I believe that is a prudent approach for the simple reason that it reduces questions concerning credibility of the data to a minimum.

I must also note with some alarm the recent unsatisfactory water sample of Birch Spring on August 1, 1991. The Castle Valley Special Service District has also noted odd fluctuations in the water quantities of their sources in the vicinity of your mine. It has been in the past and is still my client's position that the Co-Op Mine is the source and cause of these problems. While I understand that you may not agree with that conclusion, I would appreciate your immediate attention to this problem as well I look forward to your response.

Very truly yours,

Jeffrey W. Appel
Jeffrey W. Appel

JWA/kdv

cc: Dianne Neilson
Darrel Leamaster
Ben Grimes
Menco Copinga

RECEIVED

AUG 23 1991

DIVISION OF
OIL GAS & MINING

Carl E. Kingston
ATTORNEY AT LAW
53 WEST ANGELO AVENUE
P.O. BOX 15809
SALT LAKE CITY, UTAH 84115
TELEPHONE (801) 486-1458 or (801) 486-5048

W 9/23/91
RECEIVED

AUG 23 1991

DIVISION OF
OIL GAS & MINING

Copy Tom, Ken
PAM

August 21, 1991

Jeffrey W. Appel, Esq.
Tenth Floor Walker Center
175 South Main Street
Salt Lake City, Utah 84111-1956

Re: Source Monitoring Program for Big Bear and Birch Springs

Dear Mr. Appel:

In response to your letter dated August 14, 1991, please be advised that Co-op has been conducting water quality and quantity measurements monthly, at its expense, from Big Bear and Birch Springs, as required by the Division of Oil, Gas & Mining. Mr. Mel Coonrod, who is an independent third party, has been collecting the samples and forwarding them for testing. If you or your clients would be so kind as to provide Co-op or Mr. Coonrod with keys to the lock boxes, we would be happy to collect the samples from inside the lock boxes as you suggest. Without access, which only your clients can provide, it is somewhat difficult to meet your request.

Your "alarm" at the "unsatisfactory water sample of Birch Spring on August 1, 1991" is noted. Perhaps the coincident flash flood in the area had some impact on the spring. Incidentally, it appears that all other water sources in the area, including other springs and the creeks, experienced the same "odd fluctuations" as your clients' springs when the heavy rains came. These fluctuations are indeed "odd" under your theory of impact, when you consider that Co-op's mining activity over the last several months has been well away from any underground water recharge or accumulation area, where the mining activity has been constant and unchanging, and where no underground water sources have been encountered, altered, or changed in any way.

In the meantime, Co-op is pursuing the underground drilling program mandated by DOGM, in order to determine what effect, if any, its mining activity may have on the water resources in the area.

Very truly yours,

Carl E. Kingston

CEK/kj

cc: Dianne Neilson

PUBLIC WATER SYSTEM TO BE INCLUDED IN OFFICIAL RECORD OF BACTERIOLOGIC EXAMINATION

SOUTHEASTERN UTAH DISTRICT HEALTH DEPARTMENT / P.O. BOX 800 / PRICE, UTAH 84501 / (801) 637-3671

SAMPLER: COMPLETE THE FOLLOWING - USE BALL POINT PEN		FOR LABORATORY USE ONLY	DATE RECEIVED 8-1-91	DATE REPORTED 8-3-91
WATER SYSTEM NO. 080017	WATER SYSTEM NAME: NORTH Emery Water Users Ass.	LAB NO. 952	ANALYST K. A. B.	APPROVED BY Kellie
EXACT DESCRIPTION OF SAMPLING POINT: BIRCH SPRINGS		RESULTS OF ANALYSIS		
SAMPLE COLLECTED BY: JACK STOVANOFF		TOTAL COLIFORM per 100 ml. <i>coliform 276</i>		
DATE COLLECTED: 8-1-91	TIME: (24 hr. CLOCK) 9:30	ABSENT <input type="checkbox"/>	FECAL OR E. COLI per 100 ml.	
IS SAMPLE CHLORINATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO RESIDUAL PPM		PRESENT <input checked="" type="checkbox"/> 53 COUNT	ABSENT <input type="checkbox"/>	
ANALYSIS METHOD: <input checked="" type="checkbox"/> A. MEMBRANE FILTER <input type="checkbox"/> C. MULTIPLE TUBE FERMENTATION		PRESENT <input checked="" type="checkbox"/> 53 COUNT		
THIS SAMPLE IS A:		FECAL OR E. COLI REQUIRED INDETERMINATE <input type="checkbox"/> COUNT		
<input type="checkbox"/> 1. ROUTINE SAMPLE.		INTERPRETATION OF ANALYSIS		
<input type="checkbox"/> 2. REPEAT SAMPLE LAB # _____ DATE: _____		A. <input type="checkbox"/> SATISFACTORY: AS TO BACTERIA COUNT.		
IMPORTANT!!! LAB # MUST BE THE SAME AS ORIGINAL ROUTINE SAMPLE!!!		B. <input type="checkbox"/> UNSATISFACTORY: TOTAL COLIFORM POSITIVE (SEE BACK OF FORM FOR INSTRUCTIONS).		
<input checked="" type="checkbox"/> 3. INVESTGATIVE (NOT INCLUDED ON OFFICIAL RECORD)		C. <input checked="" type="checkbox"/> UNSATISFACTORY: TOTAL COLIFORM AND FECAL OR E. COLI POSITIVE (SEE BACK OF FORM FOR INSTRUCTIONS).		
SEND REPORT TO:	NAME NEWUA	D. <input type="checkbox"/> INDETERMINATE: COLIFORM PRESENCE/ABSENCE COULD NOT BE DETERMINED BECAUSE OF INTERFERENCE BY OTHER MISCELLANEOUS BACTERIA. SUBMIT A NEW SAMPLE WITHIN 24 HOURS.		
	ADDRESS BOX 410	SAMPLE NOT ANALYZED/SUBMIT NEW SAMPLE		
	CITY/STATE ELMO, UTAH	E. <input type="checkbox"/> EXCESSIVE TIME ELAPSED (MUST ARRIVE AT LAB 30 HOURS AFTER COLLECTION).		
	ZIP CODE 84521	G. <input type="checkbox"/> SAMPLE LEAKED.		
	TELEPHONE NO. 653-2649	F. <input type="checkbox"/> CONSIDERED TOO OLD WHEN NO DATE GIVEN.		
Remarks:	RAW WATER			

RECEIVED

AUG 12 1991

DIVISION OF
OIL GAS & MINING

*Copy Dianne, Lowell,
Tom, Ken, Hugh, PAM*

CASTLE VALLEY SPECIAL SERVICE DISTRICT

P.O. BOX 877
CASTLE DALE, UTAH 84513
TELEPHONE (801) 381-5333

ACT/OIS/OSS #2

August 26, 1991

DORR W. HANSON
Chairman
DARREL V. LEAMASTER
Manager

State of Utah
Division of Oil, Gas & Mining
355 West North Temple, Suite 350
Salt Lake City, Utah 84080

RECEIVED

AUG 30 1991

Attn: Tom Munson
Reclamation Hydrologist

DIVISION OF
OIL GAS & MINING

Re: Co-op Mining Company
Bear Canyon Mine Hydraulic Data

Dear Tom:

We continue to be concerned about the quantity and quality of flow from our Big Bear Spring located near the Co-op Mine. Flow data that we have collected this spring causes us to continue to have great alarm about the quantity of flow from the spring.

Enclosed you will find a copy of the flow data recorded from the Big Bear, Little Bear and Tie Fork springs so far this year. Also enclosed is a copy of the chart plotting this flow data. This chart was presented as evidence during the hearings with DOGM and the Co-op Mine earlier this year and has been updated to show the latest information.

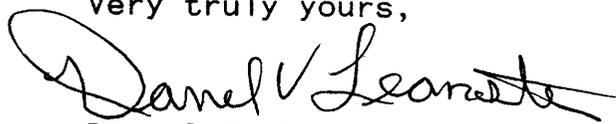
As you study this chart you will note that the Little Bear Springs responded this year to a more normal flow pattern. It increased greatly in flow and seems to be peaking out in August. This is much more like the normal flow activity that was experienced prior to 1988 and the subsequent drought years. However, the Big Bear spring has not returned to a normal flow pattern. In fact it has continued to decrease in flow. We are greatly alarmed at this pattern.

We believe that this provides additional proof that the Co-op Mine operation has already interfered with the natural flow pattern to our spring.

Co-op Mining Company
Bear Canyon Mine Hydraulic Data
August 26, 1991
Page 2

Please be assured that we will continue to monitor the
spring for any evidence of additional flow interference.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Darrel V. Leamaster". The signature is written in dark ink and is positioned above the printed name.

Darrel V. Leamaster,
District Manager

cc: Wendell Owens, Co-op
Jeffery Appel, Attorney
North Emery Water Users Assoc.

RECEIVED

AUG 30 1991

DIVISION OF
OIL GAS & MINING

1991 SPRING FLOWS

<u>Month</u>	<u>Little Bear Spring</u>		<u>Big Bear Spring</u>		<u>Tie Fork Spring</u>		<u>Total All Springs</u>	
	<u>Total Flow</u>	<u>Aver GPM Flow</u>	<u>Total Flow</u>	<u>Aver GPM Flow</u>	<u>Total Flow</u>	<u>Aver GPM Flow</u>	<u>Total Flow</u>	<u>Aver GPM Flow</u>
January	11,481,000	257	5,628,000	126	3,950,000	88	21,059,000	471
February	10,041,000	249	5,227,000	130	3,580,000	89	18,848,000	467
March	10,754,000	241	5,719,000	128	3,943,000	88	20,416,000	472
April	9,870,000	229	5,078,000	118	3,791,000	89	18,739,000	433
May	10,039,000	225	5,324,000	119	3,919,000	88	19,282,000	432
June	10,214,000	236	5,298,000	123	3,833,000	89	19,345,000	448
July	13,224,000	296	5,300,000	119	3,849,000	86	22,373,000	501
<u>August</u>								
<u>September</u>								
<u>October</u>								
<u>November</u>								
<u>December</u>								
Total	75,623,000	247.43	34,574,000	123	26,865,000	88.14	140,062,000	460.57



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangertter
Governor

Dee C. Hansen
Executive Director

Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

26 September 1991

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Hugh Klein, Reclamation Hydrologist *HK*

RE: Review of the Bear Canyon MRP Hydrology Section, Co-Op Mining, ACT/015/025, Emery County, Utah

SYNOPSIS

As part of the ongoing permit process for this and other mines, portions of an MRP are routinely reviewed for thoroughness and technical adequacy. In this case, the hydrology section was chosen for review. What follows below are the results of this review. The format used is a combined Analysis and Recommendation section. Each analysis will be followed by a recommendation (in bold letters). The purpose for such a format is so each concern is accompanied by a course of action. In doing so, it is hoped that all analyses and recommendations are clearly itemized, easy to follow, and quickly referenced.

ANALYSES & RECOMMENDATIONS

Section I (Text)

On page 7-58, paragraph 2, it states that Plate 7-5 contains the undisturbed watershed areas. Previous discussions with Kim Mangum concerning undisturbed areas revealed that there would be some redesignation or addition of undisturbed watershed areas. Specifically, this relates to the discussion of AU-18 which is shown on Plate 7-1A&B. As of the present, these changes have not been made on this particular plate.

Plate 7-5 shall be updated to show any additions or redesignations and submitted to the Division, thereby making the text correct.

Paragraph 2 of page 7-77 states that figures 7.2-4 and 7.2-6 are utilized for determining riprap sizing. This is a typographical error.

The text shall be corrected to show that figure 7.2-5 was used to determine riprap sizing rather than figure 7.2-4.

The second paragraph of page 7-83 discusses storm runoff for the 2 year 6 hour event. A value of 1.5 inches of precipitation is listed in reference to this event. In light of the table on page 7-64, this is an erroneous value. The actual value is 1.0 inch.

Text on this page shall be corrected to show the proper value of precipitation for this event.

Table 7.2-9 contains a summary of storm runoff calculations with the exception of watershed area AU-18. This watershed is shown on Plate 7-1A&B.

Watershed AU-18 shall be added to Table 7.2-9, as well as the accompanying storm runoff necessary for the table.

Page 7-87 contains a summary table for ditch characteristics. It is unclear what the side slopes are on the trapezoidal shaped channels. Also, D-3D is shown to have a gradual left side slope of approximately 1%. The shape of this channel is not well defined here (i.e., what is the right side slope?, is it vertical?).

Table 7.2-10 would be more helpful if it noted the side slopes of the ditches as well as the channel shape. These specifications can be figured out from the dimensions present, but for quicker and easier reference, it would be optimal to have this information listed.

The discussion of energy dissipating devices for culvert and ditch sediment control on page 7-102 states that Co-op is investigating several types of energy dissipators and does commit to use one that will work in areas where required. Good faith is an important part of the relationship between the Division and an operator, and while Co-Op is undoubtedly committed to using energy dissipators that work, the Division needs to know which one(s) are to be used. If the corrugated metal energy dissipating device in figure 7.2-14 is to be used, then the plan should say so as opposed to the text stating it "can be used."

Co-Op shall spell out which energy dissipating device(s) it plans to use and how they are to be implemented. In addition, ditches and culverts shall be designed so that excessive erosion does not occur, so it is somewhat confusing as to why this is included. One additional item to be noted is that there is no reference to energy dissipators in the legend of Plate 7-1, nor is it shown on the map as the text states.

On the following page (7-103), the second paragraph discusses using silt fences to control erosion. The problem with this paragraph is twofold. First, silt fences are not the best method available to prevent or eliminate erosion. Furthermore silt fences are intended as a sediment control, not as a method of channel stabilization. Therefore, it is hard to understand how a silt fence can eliminate excessive erosion. Second, as stated previously, ditches should be designed so that excessive erosion does not occur.

Unless this paragraph is reworded to show a different intent than that already put forth, the paragraph shall be deleted from the text.

Paragraph 1 on page 7-107, discusses groundwater discharge from the mine. It is unclear if this discharge is monitored and if so where in the MRP the data can be found.

If some record of this exists, the MRP shall state where it can be found. At the present time, this writer has been unable to locate any information on groundwater discharges from this mine. In the case that flow and quality are not being monitored, it seems critical that the Division should require these measurements.

The first paragraph on page 7-108 recommends that pond A be deepened. As the pond has been enlarged, the text needs to be updated to show improvements have been made.

The text in this paragraph shall be updated to show the improvements have been made. It shall include a narrative of the fact that the pond was enlarged more than originally planned thereby giving it added storage and increasing the safety factor for 10 year 24 hour containment. Additional text shall be added as needed in order to clarify the matter.

Given the above comments concerning sediment pond A's increased size, it can be seen that Table 7.2-12 on page 7-109 is no longer accurate.

The pond A stage capacity data in Table 7.2-12 shall be updated in order to illustrate the capacity of the existing pond.

Paragraph 1 on page 7-110 does not give a maintenance commitment for sediment pond clean out of pond A. (Note: This comment also applies to paragraph 1 on page 7-114 for pond B.)

In general, the Division prefers sediment ponds to be cleaned out when they reach the 60% clean out level. (Note: This comment also applies to paragraph 1 on page 7-114 for pond B.)

The first paragraph on page 7-112 recommends that pond B be deepened. As the pond has been enlarged, the text needs to be updated to show improvements have been made.

The text in this paragraph shall be updated to show the improvements have been made. Additional text shall be added as needed in order to clarify the matter.

Page 7-117, paragraph 2 states that the ditches and spillways shall be cleaned at least annually. The cleaning may be necessary more or less frequent than this period.

An "as needed" maintenance commitment would seem more appropriate for ditches and spillways.

The first paragraph on page 7-119 talks about reclaiming diversion structures (ditches, culverts and ponds) as close to original configurations as possible. This statement is of concern because these structures, with the exception of Bear Creek, are all to be removed.

While it may be strictly a case of semantics, this text shall be clarified to show that unless otherwise specified all structures will be removed and reclaimed as close to AOC as possible.

The first paragraph of section 7.3.3 on page 7-121 discusses the method of reclamation that Co-Op is "contemplating" in one portion of the permit area. Contemplating a method of reclamation does not give the Division a concrete commitment in terms of the MRP.

A specific plan of action shall be decided upon and included in the text for this portion of the permit area.

Section II (Appendix 7F; Sediment Pond Calculations)

Page 7F-6 contains watershed data for runoff from the 10 year 24 hour

event with the exception of area AD-12.

The calculations for area AD-12 shall be included in the table found on page 7F-6 of this appendix.

In general, the method used for sizing pond A is appropriate, however, area AD-12 has been omitted from the calculations. Pond A is also larger than originally planned and as such makes some of the stage volume data inaccurate.

Calculations for pond A shall include area AD-12. Additional revisions should be done in order to reflect the actual pond size and that the improvements have been made.

Pond B now meets the required regulations, so it is no longer proposed.

Adding a statement to this effect, or removing text that says the enlargement is proposed is suggested in order to keep this part of the plan current.

Section III (Appendix 7H; Reclamation Channel Sizing)

Calculations for WS-3 are missing along with page 7H-7 of this appendix. It is assumed that WS-3 calculations are on this page.

Page 7H-7 and the calculations for WS-3 shall be added to this appendix.

After some research and discussions with Henry Sauer (soil scientist), it is still unclear as to how the data present on page 7H-37 was derived for the sieve analysis. The PAP was also checked but does not clarify matters any.

Clarification of the method used to obtain this data and the source would be appreciated.

Page 7H-39 of this appendix contains a graph of natural soil gradations. This may relate to the comment above, but it is unclear why the full range of soil gradations are not present.

It would be helpful to know why the full range of soil gradations are not present. Maybe this can be explained in conjunction with the previous comment.

In sizing filter blankets, a number of relationships between base material and the filter are used. Each of these has an acceptable range of values. On page 7H-41, there is a relationship that falls outside the acceptable range. This is accompanied by a statement calling the value "marginally inadequate." Then on page 7H-44, another value is outside the accepted range; this is noted as being "marginal."

Because these values fall outside the accepted range, an explanation is important as to the prudence of using something that is "marginally adequate," or "marginal."

Section IV (Appendix 7G; Diversion Adequacy Calculations)

The design used for diversions is based on the 2 year 6 hour event. This criteria is intended for surface mines and is not applicable for the Bear Canyon Mine. Surface water diversions at Bear Canyon will be in place for at least another 15 to 20 years and need to meet the performance standards for permanent diversions.

Given this, it is in the best interest to ascertain whether or not the diversions can pass the 10 year 6 hour event. The responsibility to prove this rests with the operator. If the diversions are not capable of handling this flow, then they will need to be upgraded as necessary.

There are no calculations for the water bar adjacent to sediment pond B.
Calculations should be provided for the water bar.

Road drainage in the area of the scale house has been in question and is the subject of a recent NOV.

Plans concerning road drainage have been received by the Division and when approved, they will become part of the plan. As such, no course of action is needed over and above the NOV abatement in order to clarify road drainage in terms of the plan.

The ditch characteristics on page 7G-58 of this section does not contain information for disturbed ditches 1,2,4 and 6. In addition, undisturbed ditch 9 and 10 are also missing from the tabulation.

The status of these ditches needs to be clarified somewhere in this appendix.

Section V (Hydrology Map, Plate 7-1)

In area AD-2b, there is a contour shown as having an elevation of 7220 feet. This is incorrect.

The contour shall show an elevation of 7360 feet.

The disturbed area boundary passes through disturbed and undisturbed areas. In doing so, it appears that parts of disturbed areas are undisturbed and vice versa. The areas in question are AD-2a, AD-2b, AD-3a, AD-3b, AD-4 and AU-2.

All disturbed and undisturbed areas shall be clearly labelled; this discrepancy should be resolved.

The plan indicates that there are 2 area AD-6's; one is Upper AD-6 and the other Lower AD-6. This is not shown on the map.

It may seem trivial, but to have these areas clearly labelled would be in the best interest of easy reference.

Area AD-5 is not present on this plate.

AD-5 should be accounted for.

The map shows a "culvert not being used." What does this mean?

This should be clarified. Does it mean abandoned in place?

Ditch D-6D, D-4D and culvert C-5D are not present on the map.

The status of these structures shall be clarified (i.e., removed or abandoned).

There are 2 culverts C-4d and 2 culverts C-2U.

Are these different culverts with the same design criteria or is there another explanation? Different culverts shall be distinguishable from each other. Also is culvert C-2U the Bear Creek 60" culvert?

Page 8
Memo/P. Grubaugh-Littig
October 4, 1991

Section VI (Watershed Map, Plate 7-5)

Undisturbed watershed area AU-18 is not present on this map.
Plate 7-5 shall be updated to show AU-18.

Undisturbed watershed area AU-11 is not present on this map.
The status of AU-11 need to be clarified, and added to this plate if necessary.

This watershed map indicates that areas AD-1,2,3 and 4 are outside the disturbed area. As these are disturbed area drainages, this is not appropriate.
Plate 7-5 shall show these areas inside the disturbed area.



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangertter
Governor

Dee C. Hansen
Executive Director

Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

4 November 1991

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Hugh Klein, Reclamation Hydrologist 

RE: Sediment Pond As-Built, Bear Canyon Mine, Co-Op Mining,
ACT/015/025, Folder #5, Emery County, Utah

SYNOPSIS

Sediment pond as-builts were previously submitted to the Division. After review, a number of issues remained unresolved. Subsequently, the operator was requested to resubmit some of the information in order to address the deficiencies. What follows is a review of the latest submission.

ANALYSIS

The latest submission addresses and clears up a great deal of the confusion associated with the original submission, however, there are still a number of items that remain.

On page 7-108, the third sentence reads, "In 1991 the pond was cleaned and enlarged, 2 ft deeper (7082 ft)." The intent of this sentence is clear to this reviewer, but suggests something other than what took place. Originally, plans called for the pond to be deepened by three feet. Actual construction resulted in a pond that was two feet deeper than planned, which made the enlarged pond five feet deeper than originally planned. Thus the above mentioned statement is somewhat misleading.

Sediment Pond A's stage-capacity data on page 7-109, is confusing in relation to the data shown for elevation 7096. There are two data sets for this elevation; each shows a different area and cumulative volume. It is possible that this may be the result of the way the computer software is used, but it is still confusing.

In the third paragraph of page 7-108, the last two sentences read, "Assuming the pond fully contains this [the 10 year 24 hour] runoff volume, the decant elevation is 7088 ft. The 60 pct sediment cleanout is at an elevation of 7086 ft, 2 ft below the decant level." Given the existing regulations, one cannot **assume** a pond

can contain the 10 year 24 hour runoff. This is most likely a typographical error as it has been proven that the pond can contain the 10 year 24 hour runoff volume. Also, the decant elevation does not change in relation to runoff events, it is related to the sediment delivery to the pond and the sediment cleanout level. Because the pond is deeper than originally planned, the sediment cleanout level is not at 60%. As such, it should be referred to as the sediment cleanout level (as opposed to the 60% sediment cleanout level).

Page 7-110 discusses sediment level storage volume of Pond A and the yearly sediment delivery. The first paragraph states that, "proposed pond design will provid[e] over 6 yrs of sediment storage." As it was noted above, the cleanout level is not at 60%, so it should be referred to as the sediment cleanout level. In addition, the pond design is no longer proposed. Finally, the estimated annual sediment volume is 4778 cubic feet; the sediment cleanout level (7086 ft) stores 23,702 cubic feet of sediment; thus it will take approximately five years to reach the sediment cleanout level. The paragraph states that the pond will provide over six years of storage, but this is not the case. The time it takes to produce enough sediment to fill the sediment storage volume in relation to a pond is not necessarily related to the maximum sediment storage level. Instead, it is entirely dependent on the sediment cleanout level.

One additional item related to sediment cleanout of pond A is the last paragraph on page 7-110. Computations for the 25 year 6 hour storm at pond A were done assuming that the pond contained the, "maximum allowable sediment volume of 32,288 cu ft." This is the maximum sediment level, but it is not allowable given the decant elevation.

RECOMMENDATIONS

- 1) The third sentence on page 7-108 needs to be changed to read something in effect that in 1991 the pond was cleaned and enlarged, and made 2 ft deeper than originally planned.
- 2) Data associated with elevation 7096 on page 7-109 (Table 7.2-12) is in need of revision and/or clarification.
- 3) The last two sentences of paragraph three on page 7-108 need to be revised to show that the "sediment cleanout level" is two feet below the decant elevation. As it is presently, the text does not **clearly** explain this.
- 4) Paragraph one on page 7-110 needs to be revised in order to state

Page 3
Memo/P. Grubaugh-Littig
November 4, 1991

that the pond is no longer proposed. The sediment cleanout level should be referenced as noted above in recommendation #1, and the time to reach sediment storage should be based on the sediment cleanout level and not the maximum sediment capacity.

5) Additional discrepancies between maximum sediment level and the sediment cleanout level need to be addressed (i.e., those in the last paragraph of page 7-110). The Division needs to be assured that the operator understands this and that the sediment level will not exceed the established cleanout level of 7086 feet.

1 December 1991

Pamela Grubaugh-Littig
Permit Supervisor
Utah Division of Oil Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RECEIVED

DEC 02 1991

Dear Ms. Grubaugh-Littig;

DIVISION OF
OIL GAS & MINING

Re: NOV #N91-40-1-1, Ground Water Monitoring, Bear Canyon Mine,
ACT/015/025, Co-Op Mining Company, Emery County, Utah

Enclosed is a copy of the Third Quarter 1991 Water Data. All of the available data is included along with new "Water Monitoring Report" summary sheets. Additional data has been added to that submitted by E.I.S., 31 Oct 1991. We are still checking on the laboratory results from a sample apparently taken by E.I.S. in Sept 1991 for SBC-4 and we will forward any information when located.

The location where SPC-7 was previously monitored is dry. The location where SBC-8 was previously monitored is now within a mined out section. The inappropriate data for these two stations should be disregarded.

M.E.C. has been contracted by Co-Op Mining Co. to conduct water monitoring in the future and we will be using CT&E, Huntington, Utah to perform required laboratory analysis. I have enclosed a preliminary copy of our proposed "Field Measurement Form". Please have your applicable team member(s) review the form and forward any comments.

Page 2
DOGM
1 December 1991

I am sure that the division and Co-Op will be pleased with the efforts of M.E.C. to fulfil water monitoring requirements in the future. Your assistance is greatly appreciated. Thank you for your cooperation in this matter.

Thank you,

A handwritten signature in cursive script, reading "Kimly C. Mangum", followed by a long horizontal line extending to the right.

Kimly C. Mangum, P.E.
Permitting & Compliance Consultant.

cc: Co-Op Mining Co.

MEEC Mangum
Engineering
Consultants

388 East Boynton Road • Kaysville, Utah 84037 • (801) 544-3641

3 December 1991

Hugh E. Klein
Reclamation Hydrologist
Utah Department of Oil, Gas & Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Mr. Klein,

Re: NOV #N91-40-1-1, Water Monitoring Report, Third Quarter. Bear
Canyon Mine, Co-Op Mining Company, ACT/015/025, Emery
County, Utah

Enclosed are the water analysis results for the September 1991
sample of SBC-4 (Huntington Springs). The summaries of each
monitor point have also been updated to eliminate the erroneous
date above the "Lab Measurements" parameters. These modifications
have been made per our phone conversation of December 2, 1991.
Please notify me if there are any further questions.

Thank You,

Charles Reynolds
Charles Reynolds, B.S.
Mining Engineer

cc: Kim Mangum
Co-Op Mining Co.

RECEIVED

DEC 06 1991

DIVISION OF
OIL GAS & MINING

015 | 021

ELS

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

mine file
cc L. Rowler
MB

January 29, 1990

Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

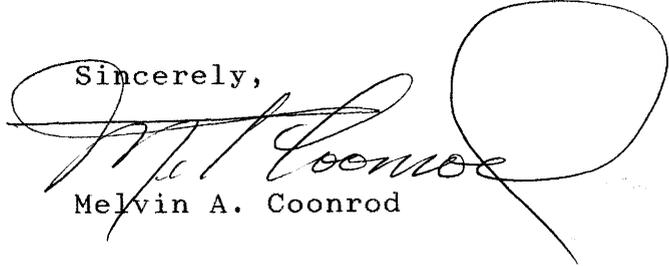
Re: Fourth Quarter Water Data
Co-Op Mining Company

Dear Mr. Braxton:

Please find enclosed the Fourth Quarter 1989 Water data for Co-Op Mining Company.

If you have any questions, please feel free to call me at 801 653-2606.

Sincerely,



Melvin A. Coonrod

MAC/njc

cc: Co-Op Mine
File

ELS

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

*min here U3
CI cover letter P.G.L.*

RECEIVED

APR 26 1990

DIVISION OF
OIL, GAS & MINING

April 23, 1990

Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

Act/Oil/O&M
7

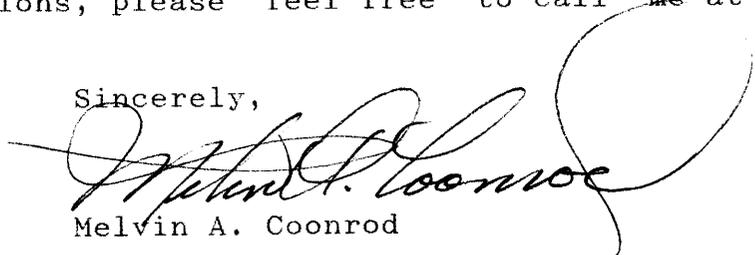
Re: First Quarter Water Data
Co-Op Mining Company

Dear Mr. Braxton:

Please find enclosed the First Quarter 1990 Water data for Co-Op Mining Company.

If you have any questions, please feel free to call me at 801 653-2606.

Sincerely,



Melvin A. Coonrod

MAC/njc

cc: Co-Op Mine
File

EIS

Mine file VB
cc cover letter Pan G12

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Act 1015/625
7

Mel Coonrod - Vice-President

for
AUG 13 1990

July 29, 1990

RECEIVED
AUG 10 1990

DIVISION OF
OIL, GAS & MINING

Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

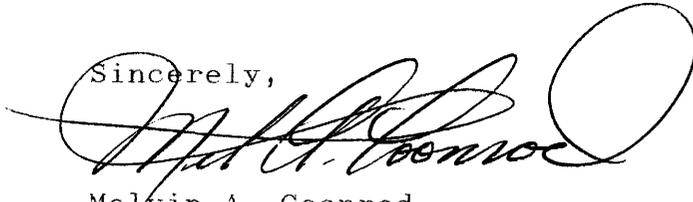
Re: Second Quarter Water Data
Co-Op Mining Company

Dear Mr. Braxton:

Please find enclosed the Second Quarter 1990 Water data for Co-Op Mining Company.

If you have any questions, please feel free to call me at 801 653-2606.

Sincerely,



Melvin A. Coonrod

MAC/njc

cc: Co-Op Mining Company
File

ELS

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

Ames # File ACT/01/10/25 #7
P. Carbaugh Libby - sent to me
bib

Tan

OCT 30 1990

October 30, 1990

Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
BS Triad Center Suite 350
Salt Lake City, Utah 84180-1203

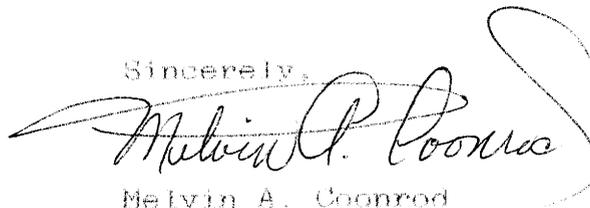
Re: Third Quarter Water Data
Co-Op Mining Company

Dear Mr. Braxton:

Please find enclosed the Third Quarter 1990 Water data for
Co-Op Mining Company.

If you have any questions, please feel free to call me at
801 653-2606.

Sincerely,



Melvin A. Coonrod

MAC/njc

cc: Co-Op Mine
File

ELS

Mine Files Bear Cyo #7
Trail cyo #7
R. Smith

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

April 27, 1989

RECEIVED
MAY 03 1989

DIVISION OF
OIL, GAS & MINING

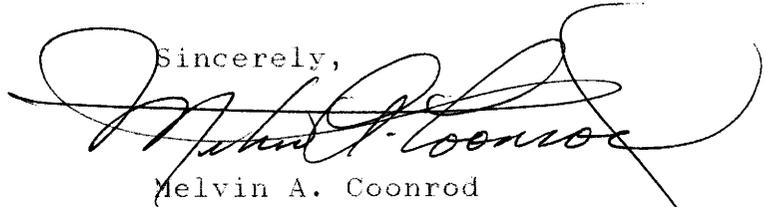
Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

Re: Co-Op Mining Company
Bear And Trail Canyons
Water Samples

Dear Mr. Braxton:

Due to a problem with Intermountain Laboratory, I have not received the lab data for Co-Op Mine. I am requesting an extension to submit the First Quarter Date for Bear and Trail Canyon mines. } 26

Sincerely,



Melvin A. Coonrod

MAC/ncj

cc: Mine
File

& Rick - Please evaluate
the extension on this and respond
Thx LAB 5.4

ELS

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

015/025
FILE # 7
WATER
QUALITY

July 14, 1989

RECEIVED
JUL 19 1989

DIVISION OF
OIL, GAS & MINING
OLD
DATA

Mr. Lowell Braxton
Utah Division of Oil, Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

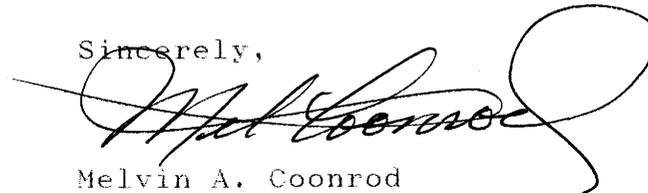
Re: Co-Op Mining
First And Second Quarter
Water Data

Dear Mr. Braxton:

Please find enclosed Co-Op Mining Company's 1st and 2nd Quarter Water Data for Trail and Bear Canyon mines.

If you have any questions, please feel free to call me at 653-2606.

Sincerely,



Melvin A. Coonrod

MC/njc

Enclosure

cc: Kim Mangum
DOGM-Price
Co-Op Mine

ELS

ENVIRONMENTAL INDUSTRIAL SERVICES

P.O. Box 358 - Desert Lake Road - Elmo, Utah 84521 - Telephone (801) 653-2606

Mel Coonrod - Vice-President

Rec'd copy

Mine file #7

cc cover letter - R.O. Smith

10/15/025
#7

RECEIVED
NOV 01 1989

October 30, 1989

DIVISION OF
OIL, GAS & MINING

Mr. Lowell Braxton
Utah Division of Oil Gas & Mining
355 West North Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

Re: Third Quarter Water Monitoring

Dear Mr. Braxton:

Please find attached the Third Quarter Water Data for Co-Op Mine.

If you have any questions I can be reached at 801-653-2606.

Sincerely,

Melvin A. Coonrod
Melvin A. Coonrod

cc: Co-Op Mine
Kim Mangum

Reels: note Birch Springs
reported "dry"
Feb, May, Aug '89
LAD

Act 015/1986

RENEWAL

Permit No.: UT-0023612

Effective Date: Date of Issuance*

Expiration Date: December 31, 1986

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq.) (hereinafter referred to as "the Act"),

the Co-op Mining Company, Trail Canyon, Bear Canyon Coal Mines,

is authorized by the United States Environmental Protection Agency,

to discharge from a facility located at Sections 22 and 25, Township 16 South, Range 7 East, Emery County, Utah,

to receiving waters named Trail Canyon and Bear Creeks, which are tributaries of Huntington Creek,

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III, hereof.

Authorized Permitting Official	Date
Title	

*Thirty (30) days after the date of receipt of this permit by the Applicant.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Active Mining Operations)

1. During the period beginning immediately and lasting through December 31, 1986 the permittee is authorized to discharge from all point sources associated with active mining operations indicated on the area maps submitted and approved pursuant to Part III, A.1. Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATION a/</u>			<u>MONITORING REQUIREMENTS</u>	
	<u>Daily Average</u>	<u>7-Day Average</u>	<u>Daily Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow - M ³ /Day, gpd	N/A	N/A	N/A	Monthly	Measured <u>a/ c/</u>
Total Suspended Solids	25 mg/l	35 mg/l	70 mg/l	Monthly	Grab
Total Iron	N/A	N/A	2.0 mg/l <u>b/</u>	Monthly	Grab
Total Dissolved Solids	N/A	N/A	650 mg/l	Monthly	Grab

Oil and Grease shall not exceed 10 mg/l and shall be monitored monthly by a grab sample.

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units and shall be monitored twice per month by grab sample.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge of sanitary wastes.

2. See Schedule of Compliance. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): At any point which is representative of each discharge prior to its mixing with the receiving stream and as indicated by the solid triangles on the current area maps submitted pursuant to Part III, A.1.

a/ See Part I, C.3.

b/ If any Iron analysis exceeds this limitation, the State of Utah and the permittee shall review the actions necessary to achieve compliance with the limitation and the continued appropriateness of the limitation. In no event shall the discharge exceed a daily maximum limitation for Total Iron of seven (7) milligrams per liter.

c/ For the intermittent discharges, the duration of the discharge shall be reported.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Active Mining Operations)
(Continued)

3. Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour, precipitation event (or snowmelt of equivalent volume) shall comply with the following limitation instead of the Total Suspended Solids limitations contained in Part I.A.1.:

<u>Effluent Characteristic</u>	<u>Daily Maximum</u>
Settleable Solids	0.5 ml/l

Settleable Solids shall be monitored weekly during periods of precipitation.

4. Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within any 24-hour period greater than the 10-year, 24-hour, precipitation event (or snowmelt of equivalent volume) shall comply with the following limitations instead of the otherwise applicable limitations:

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units.

5. The alternate limitations provided in Parts I.A.3. and I.A.4., shall apply only if:
- The treatment facility is designed, constructed, operated and maintained to contain at a minimum the volume of water which would drain into the treatment facility during the 10-year, 24-hour, precipitation event (or snowmelt of equivalent volume);
 - The treatment facility is designed, constructed, operated and maintained to consistently achieve the effluent limitations set forth in Part I.A.1., during periods of no precipitation (or snowmelt).
6. The operator shall have the burden of proof that the preceding conditions have been met in order to qualify for the alternate limitations in Parts I.A.3. and I.A.4. The alternate limitations in Parts I.A.3. and I.A.4. shall not apply to treatment systems that treat underground mine water only.

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:
 - a. If the permittee has not previously submitted Area Map(s) described in Part III, A., such Area Map(s) shall be submitted within 30 days of the effective date of this permit.
 - b. Revised Area Map(s) as described in Part III, A., must be submitted 60 days prior to commencement of the discharge.
2. No later than 14 calendar days following a date identified in the above Schedule of Compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice to the permit issuing authority of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

C. MONITORING AND REPORTING

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.
2. Monitoring results obtained during the previous three (3) months shall be summarized for each discharge for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on April 28, 1982. Duplicate signed copies of these, and all other reports required herein, (as required by Part II, A.9.) shall be submitted to the Regional Administrator and the Director of the State of Utah Water Pollution Agency at the following addresses:

U.S. Environmental Protection Agency
Suite 103, 1860 Lincoln Street
Denver, Colorado 80295
Attention: Water Division - Permits

Utah Department of Health
Division of Environmental Health
Bureau of Water Pollution Control
P.O. Box 2500
Salt Lake City, Utah 84110

3. Definitions

- a. The "daily average" means the arithmetic average of all the daily determinations made during a calendar month. Daily determinations made using a composite sample shall be the value of the composite sample. When grab samples are used, the daily determination shall be the arithmetic average of all the samples collected during the calendar day. Daily determinations of mass shall be determined by the daily determination of concentration multiplied by the volume of discharge for that day.
- b. The "7-Day Average" limitation shall be determined by the arithmetic mean of a minimum of three (3) consecutive samples taken on separate days in a 7-day period (minimum total of three (3) samples).
- c. The "daily maximum" concentration means the daily determination of concentration for any calendar day.
- d. Measurement of flow shall be performed by a direct flow measurement technique such as a flow meter, weir, or gauge.
- e. A "composite sample" shall consist of at least three grab samples which is representative of the discharge.
- f. "Active mining area" means the areas on and beneath land used or disturbed in activity related to the extraction, removal, or recovery of coal from its natural deposits. This term excludes coal preparation plants, coal preparation plant associated areas and post-mining areas.

C. MONITORING AND REPORTING (Continued)

3. Definitions (Continued)

- g. "Reclamation area" means the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced.
- h. The term "10-year, 24-hour, precipitation event" shall mean the maximum 24-hour precipitation event with a probable reoccurrence interval of once in 10 years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, and subsequent amendments or equivalent regional or rainfall probability information developed therefrom.
- i. For additional definitions, see Part III, B.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(h) of the Act, under which such procedures may be required.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- a. The exact place, date, and time of sampling;
- b. The dates the analyses were performed;
- c. The person(s) who performed the analyses;
- d. The analytical techniques or methods used; and,
- e. The results of all required analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (EPA No. 3320-1). Such increased frequency shall also be indicated.

C. MONITORING AND REPORTING (Continued)

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer, if requested by the Regional Administrator or the State of Utah water pollution control agency.

A. MANGEMENT REQUIREMENTS

1. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the environment resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

2. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Regional Administrator and the State of Utah with the following information, in writing, within five (5) days of learning or being advised of such condition:

- a. A description of the discharge and cause of noncompliance; and,
- b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge. This written submission shall not be considered as excusing or justifying the failure to comply with the effluent limitations.

3. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

A. MANAGEMENT REQUIREMENTS (Continued)

4. Facilities Operation

- a. The permittee shall at all times maintain in good working order and operate as efficiently as possible, all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.
- b. Dilution water shall not be added to comply with effluent requirements.

5. Bypass of Treatment Facilities

a. Definitions

- (1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs c and d of this Section.

c. Notice

(1) Anticipated Bypass

If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least ten (10) days before the date of the bypass.

(2) Unanticipated Bypass

The permittee shall submit notice of an unanticipated bypass as required in Part II, A.2.

A. MANAGEMENT REQUIREMENTS (Continued)

5. Bypass of Treatment Facilities (Continued)

d. Prohibition of Bypass

- (1) Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:
 - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This conditions is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,
 - (c) The permittee submitted notices as required under paragraph c of this Section.
- (2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph d.(1) of this Section.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the United States.

7. Power Failures

No later than 30 days after the effective date of this permit, the permittee shall certify in writing to the permit issuing authority either that:

- a. An alternative mechanical or electrical power source sufficient to operate essential facilities utilized by the permittee to maintain compliance with the terms and conditions of the permit has been or will be installed or,
- b. Upon reduction, loss or failure of one or more of the primary sources of electrical power to essential facilities utilized by the permittee to maintain compliance with the terms and conditions of this permit, the permittee shall halt, reduce, or otherwise control production and/or all discharges in order to maintain compliance with the terms and conditions of this permit.

A. MANAGEMENT REQUIREMENTS (Continued)

8. Delineated Discharges

Any discharge delineated in Part III (Other Requirements) (originating from operations covered by Standard Industrial Classification Codes 1211 and 1213) that commences after the effective date of this permit shall be in compliance with all effluent limitations, monitoring requirements, and other conditions contained herein upon initiation of discharge.

9. Signature Requirements

All reports or information submitted pursuant to the requirements of this permit must be signed and certified by a principal official or by a duly authorized representative of that person. Signatory regulations are established in 40 CFR 122.6.

B. RESPONSIBILITIES

1. Right of Entry

The permittee shall allow the head of the State of Utah water pollution control agency, the Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit; and,
- b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Regional Administrator and the State of Utah water pollution control agency.

B. RESPONSIBILITIES (Continued)

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Regional Administrator and the State of Utah water pollution control agency. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or,
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

5. Toxic Pollutants

Notwithstanding Part II, B.4. above, if a toxic effluent standard or prohibition (including any Schedule of Compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" (Part II, A.5.) and "Power Failures" (Part II, A.7.), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

B. RESPONSIBILITIES (Continued)

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

8. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulations under authority preserved by Section 510 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

11. Reapplication

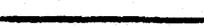
If the permittee desires to continue to discharge, he shall reapply at least one hundred eighty (180) days before this permit expires using the application forms then in use. The permittee should also reapply if he desires to maintain a permit, even though there was not a discharge from the treatment facilities during the duration of this permit.

A. OTHER REQUIREMENTS

1. General Requirements

a. Area Maps (Acting Mining Operations, Coal Preparation Plant, and Associated Areas)

- (1) Underground mines which have already identified the location of each discharge need not submit an area map.
- (2) The permittee shall submit revised Area Map(s) to show any changes, corrections, or other modifications or adjustments of the location of the point source discharges. The purpose of this requirement is to assure that the Regional Administrator and the State of Utah are kept fully advised as to the current location of such discharges.
- (3) The revised Area Map(s) shall be submitted in the form specified below and shall be made from USGS topographical maps (7.5 or 15-minute series) or other appropriate sources as approved by the Regional Administrator or his designee. Each revised Area Map shall be 8½ inches by 11 inches and shall be in black and white suitable to produce readable copies by rapid printing methods (Xerox, Dennison, Offset printing, etc.) or as approved by the Regional Administrator or his designee. Where additional 8½-inch by 11-inch maps are required to show the area of operation, they shall be numbered and a key shall be shown on the first map. The first map section shall have the company name, mine/job name, address, and NPDES number clearly printed thereon. Also, one line of latitude and one line of longitude shall be marked on each map section. The Area Map(s) shall delineate the following, using the graphics as indicated:

- (a) Existing Area of Operation  (Solid Outline)
- (b) Existing point source  (Solid Triangle)
- (c) The projected area of operation for the next five years  (Dashed Outline)
- (d) Project point source for the next five years  (Opened Triangle)

A. OTHER REQUIREMENTS

1. General Requirements (Continued)

- (e) The monitoring reports must indicate the active-inactive status of all discharge points which are listed on the current area maps. These discharge points shall be assigned numbers 001, 002, 003, etc.
- b. Monitoring of a discharge may be terminated if either:
 - (1) Sufficient data has been accumulated to show to the satisfaction of the Regional Administrator or his designee that the untreated discharge from an area where active mining has ceased will meet the limitations herein; or,
 - (2) The discharge emanates from an area on which the State of Utah has released the grading bond or has taken other similar action.

B. ADDITIONAL DEFINITIONS

1. The term "coal preparation plant" means a facility where coal is crushed, screened, sized, cleaned, dried, or otherwise prepared and loaded for transit to a consuming facility.
2. The term "coal preparation plant associated areas" means the coal preparation plant yards, immediate access roads, coal refuse piles, and coal storage piles and facilities.
3. The term "settleable solids" is that matter measured by the volumetric method specified below:

The following procedure is used to determine settleable solids:

Fill an Imhoff cone to the one-liter mark with a thoroughly mixed sample. Allow to settle undisturbed for 45 minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for 15 minutes longer. Record the volume of settled material in the cone as milliliters per liter. Where a separation of settleable and floating material occurs, do not include the floating material in the reading.

CASTLE VALLEY SPECIAL SERVICE DISTRICT

P. O. BOX 553
CASTLE DALE, UTAH 84513
TELEPHONE 801/748-5333

August 13, 1979

RAYMOND R. SITTERUD
Chairman
DARREL V. LEAMASTER
Manager

Board of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, Utah 84116

ATTN: Mr. Charles Henderson
Board Chairman

RE: Protest To
Mining Application for
Co-Op Mining Company
Bear Creek Canyon Portal
Huntington, Utah
Permit No. ACT/015/021

Dear Mr. Henderson,

The Castle Valley Special Service District is a local government agency. We provide culinary water and sewage systems and services to the communities in western Emery County. We are writing this letter on behalf of Huntington City, Emery County, Utah.

We are writing to you and the Board of Oil, Gas & Mining regarding your authority over approval of Coal Mining Applications, and specifically of the Co-Op Mining Company, Bear Creek Canyon Portal Mine, Emery County, Utah application. We protest this application based upon the strong probability that serious damage to the Huntington City springs could result. Huntington City has received in the past and is now receiving a major portion of its culinary water supply from a spring in Bear Canyon in the general proximity of the proposed mining operation. Both the spring water quality and the spring flow could be damaged by the mining operation.

The application in section 783.15 discusses the spring and ground water in the area and supposedly covers all known springs in the area. However, no mention is made of the fact that Huntington City has fully developed and uses springs for culinary water supplies which are located within about 1/2 mile of the proposed mine portal. These springs were first developed in 1921, about 57 years ago and have been in service continuously ever since. They produce an average 150 gpm of flow. The springs are located in formations below the level of the coal seams. The exact source of the springs is not known but it is very likely and probable that any mining activity near the springs could cut the water source or cause contamination to the water.

Concerning the source and direction of flow to the Huntington springs we quote from the Final Environmental Statement Development of Coal Resources in Central Utah, Chapter II A, 3.a.2. :

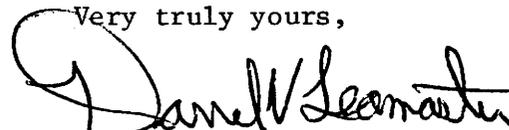
"Ground water is recharged principally in the higher plateaus, which receive the most precipitation and produce most of the runoff. Ground water moves from areas of recharge to discharge areas, which include numerous widely scattered springs, stream courses, and patches of phreato-phytes. The direction of movement of water through the bedrock formations cannot be determined with current available data, except perhaps in a few local areas."

We certainly do not know the exact direction of travel or interactions of the aquifer in the area. Insufficient data is available to make an exact evaluation of the potential changes in the spring brought about by the mining operation. Our resources are limited and we do not have the time, testing or research necessary to do an adequate assessment of the potential damage.

The exact method of mining to be used is not known to us. We are concerned that blasting might be used. We believe that blasting could have an effect on the ground water regimes and aquifers for miles around. This must also be evaluated.

In summary, we believe that the application does not adequately cover the problems created for the Huntington Springs nor does it offer any solution to the problems. We recommend that the application be turned down until a suitable solution to this problem can be found.

Very truly yours,


Darrel V. Leamaster, PE

pl
cc: Huntington City

Co-Op Mining Company
53 West Angelo Avenue
Salt Lake City, UT 84115

P.S. Huntington City has previously experienced a similar problem with their other springs at Little Bear Canyon with Swisher Coal Company. They were able to reach an acceptable agreement to both parties which protected the City in maintaining the flow and quality of the spring.



SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

OIL, GAS, AND MINING BOARD

CHARLES R. HENDERSON
Chairman

JOHN L. BELL
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THADIS W. BOX
CONSTANCE K. LUNDBERG
EDWARD T. BECK
E. STEELE McINTYRE

September 24, 1979

Mr. Wendell J. Owen
Co-op Mining Company
P.O. Box 300
Huntington, Utah 84528

RE: Co-op Mine
ACT/015/021

Dear Mr. Owen:

For those mines which have not upgraded their monitoring plans to comply with the permanent program, modification of the federal rules for the Interim Program have caused a change in the reporting schedule for water quality results. Those mines which have upgraded their monitoring programs should maintain the same schedules.

On June 22, 1979, the Office of Surface Mining (O.S.M.) modified its regulations requiring reporting of water quality information by surface and underground coal mines during the Initial Regulatory Program (Federal Register, Volume 22, No. 122, pages 36886-87). These modifications have been made to the rules (30 CFR 715.17 and 717.17) to make reporting time period requirements more consistent with similar requirements of the Environmental Protection Agency and to eliminate the filing of duplicate reports.

More specifically, the modified rules allow for two alternative reporting periods for sample measurements of discharges to surface waters. As one alternative, reports are to be made to the regulatory authority by the discharger within 60 days of the end of each 60-day sample collection period. (If the mining activity involves Federal coal, the regulatory authority includes the State and O.S.M.).

September 24, 1979
Page Two

A second acceptable method is reporting through compliance with equivalent time period reporting requirements under the NPDES permit system of the Clean Water Act. Use of the second alternative is conditioned upon the discharges being subject to NPDES requirements. It should be noted that compliance with the second alternative may be achieved by either filing the NPDES reporting form with the regulatory authority, or by identifying the State or Federal government official with whom the NPDES reporting form was filed.

I should emphasize that the regulations require that in all cases in which analytical results of samples indicate a violation of a permit condition or applicable standard, the operator shall notify the regulatory authority immediately. I should also note that when the Permanent Regulatory Program becomes effective, the reporting requirements of 30 CFR 816.52 and 817.52 will apply.

If questions should arise with respect to these reporting requirements, please contact Thomas Suchoski on my staff. Thank you for your cooperation.

Sincerely,


RONALD W. DANIELS
COORDINATOR OF MINED LAND DEVELOPMENT

RWD/te

File A471005/005 # 9
c.c. T. Munson

CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



(801) 748-5238
Coal Sales (801) 748-5777

March 5, 1986

RECEIVED
MAR 06 1986

**DIVISION OF
OIL, GAS & MINING**

Wayne Hedberg
Utah Division of Oil, Gas & Mining
355 North West Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

RE: Water Monitoring Data Co-Op
Bear Canyon and Trail Canyon
Mines

Dear Wayne:

Please find attached 1985 water monitoring data as per Co-Ops commitment Bear and Trail Canyon MRP.

This data concludes the 1 year base line data commitment Co-Op made relative to water sampling as approved in the Bear Canyon MRP. Co-Op will continue sampling on a quarterly basis at Bear Canyon and monthly at Trail Canyon.

Sincerely,

Melvin A. Coonrod
Permitting & Compliance

MC/njc

Attachments

1-11
6-9-80

file AG/015/005 #9
c.c. T. Johnson

CO-OP MINING COMPANY

O. Box 1245
Huntington, Utah 84528



(801) 748-5238
Coal Sales (801) 748-5777

March 5, 1986

RECEIVED
MAR 06 1986

**DIVISION OF
OIL, GAS & MINING**

Wayne Hedberg
Utah Division of Oil, Gas & Mining
355 North West Temple
#3 Triad Center Suite 350
Salt Lake City, Utah 84180-1203

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Sincerely,

Melvin A. Coonrod
Permitting & Compliance

MC/njc

Attachments

FILE COPY

CO-OP MINING COMPANY



O. Box 1245
Huntington, Utah 84528

*ACT/015/025
#9*

(801) 748-5238
Coal Sales (801) 748-5777

September 17, 1985

RECEIVED

SEP 20 1985

DIVISION OF OIL
GAS & MINING

Dave Ariotti
State of Utah
Dept. of Health
P.O. Box 800
Price, Utah 84501

RE: Co-Op Culinary Water System

Dear Dave:

Please find attached the balance of the information you requested relative to Co-Op Mine's Bear Canyon Water System.

Also, due to a recent flash flood, a portion of the 2" line from the fan portal to the crusher building was destroyed. The line has since been replaced with a surface insulated line. Unfortunately, it is physically impossible due to terrain to bury this new line.

I hope this meets with your approval. If I can be of any assistance, please call.

Sincerely,

Melvin A. Coonrod
Melvin A. Coonrod
Permitting & Compliance

MC/njc

cc Tom Munson, DOGM

CO-OP MINING COMPANY



O. Box 1245
Huntington, Utah 84528

(801) 748-5238
Coal Sales (801) 748-5777

September 17, 1985

RECEIVED

SEP 20 1985

DIVISION OF OIL
GAS & MINING

Dave Ariotti
State of Utah
Dept. of Health
P.O. Box 800
Price, Utah 84501

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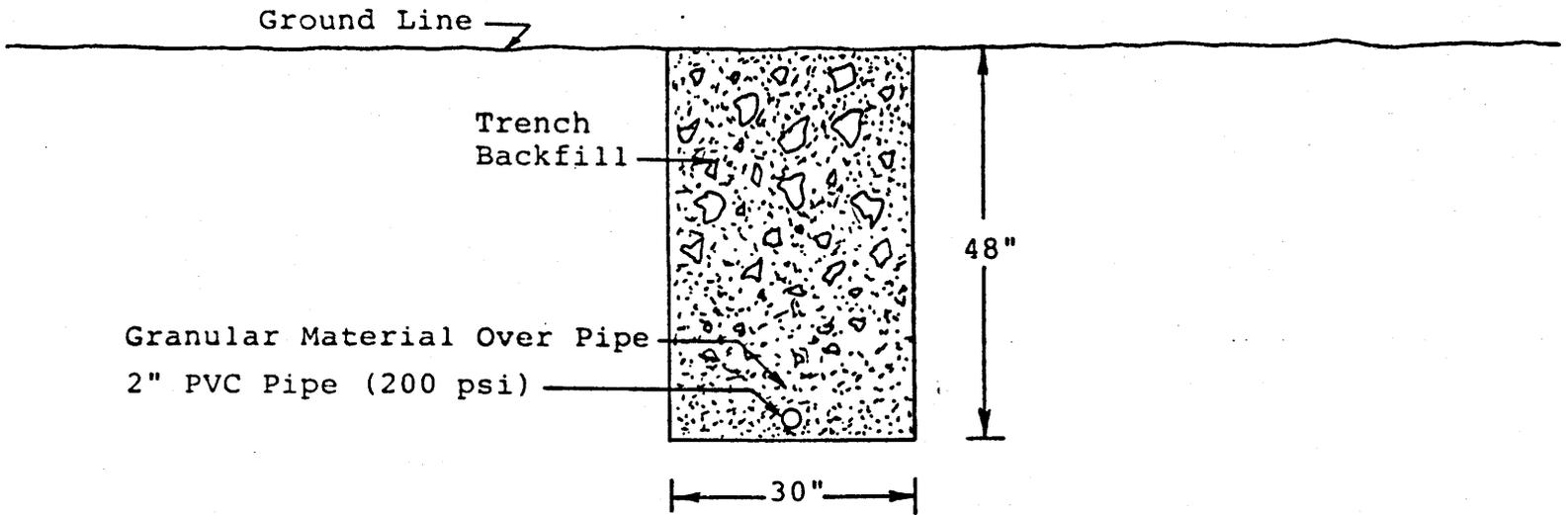
Sincerely,

Melvin A. Coonrod
Permitting & Compliance

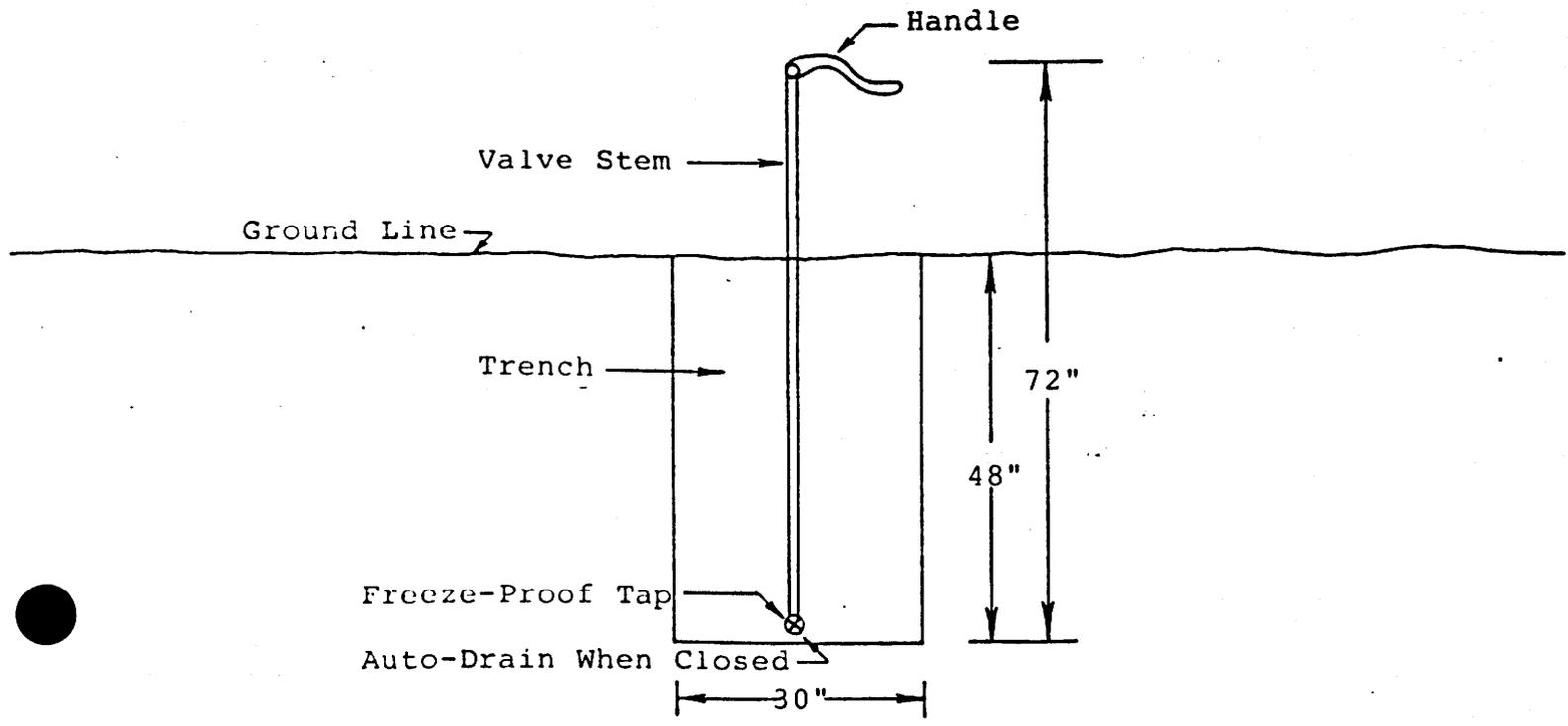
MC/njc

cc Tom Munson, DOGM

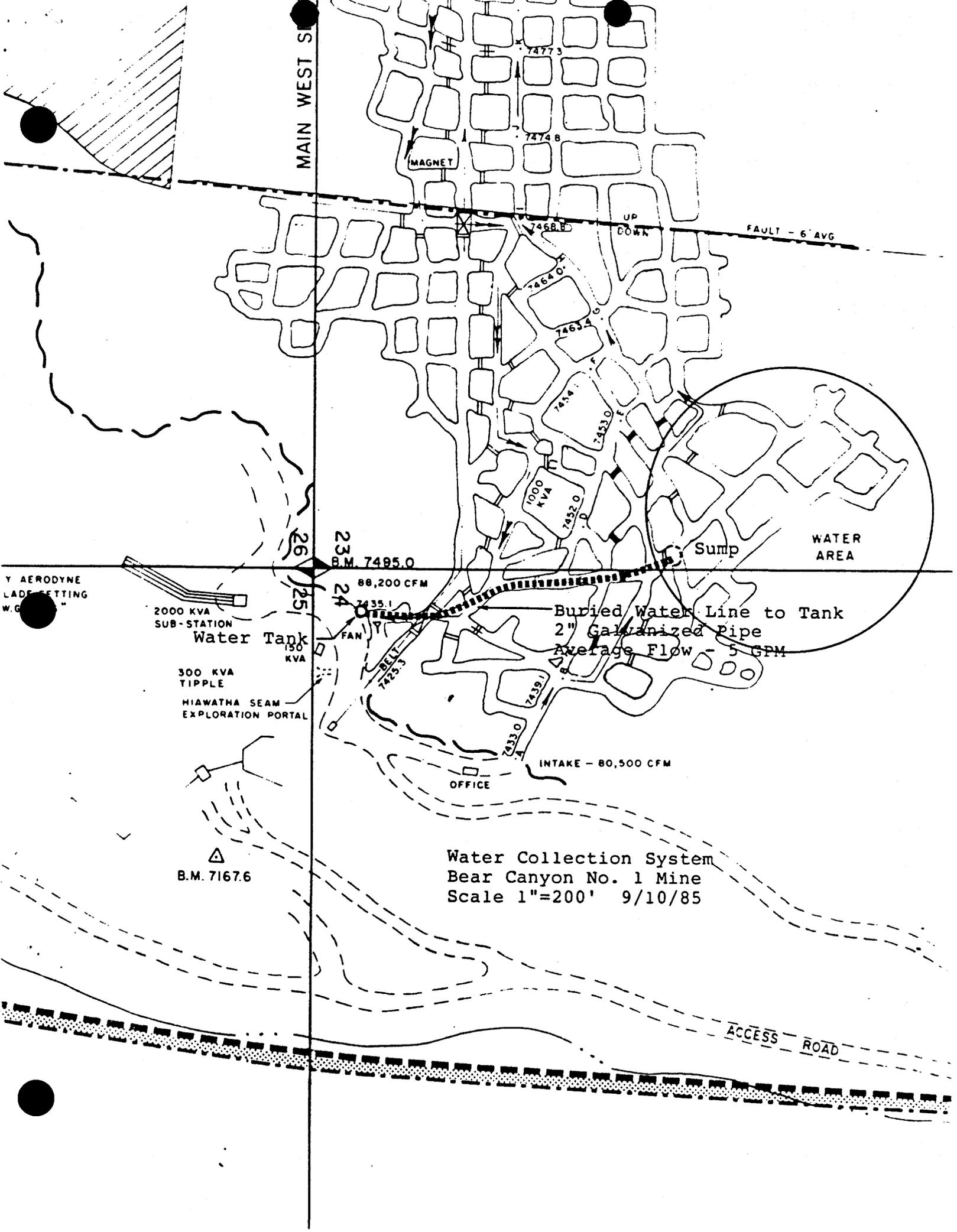
Scale 1" = 2'



End View of Trench and Pipe



Freeze-Proof Valve



MAIN WEST SIDE

MAGNET

74773

7474 B

7468 E

UP
DOWN

FAULT - 6' AVG

7464 D

7463 C

7454 F

7453 O

1000
KVA

7452 O

Sump

WATER
AREA

AERODYNE
LADE SETTING
W.G.

2000 KVA
SUB-STATION

Water Tank
150
KVA

300 KVA
TIPPLE

HIAWATHA SEAM
EXPLORATION PORTAL

26
23
B.M. 7495.0

25

24

88,200 CFM

7435.1

FAN

Buried Water Line to Tank
2" Galvanized Pipe
Average Flow - 5 GPM

7425.3

7439.1

7433.0

INTAKE - 80,500 CFM

OFFICE

B.M. 7167.6

Water Collection System
Bear Canyon No. 1 Mine
Scale 1"=200' 9/10/85

ACCESS ROAD

BY D. Guy DATE 9/10/85

SUBJECT Water Tank Access

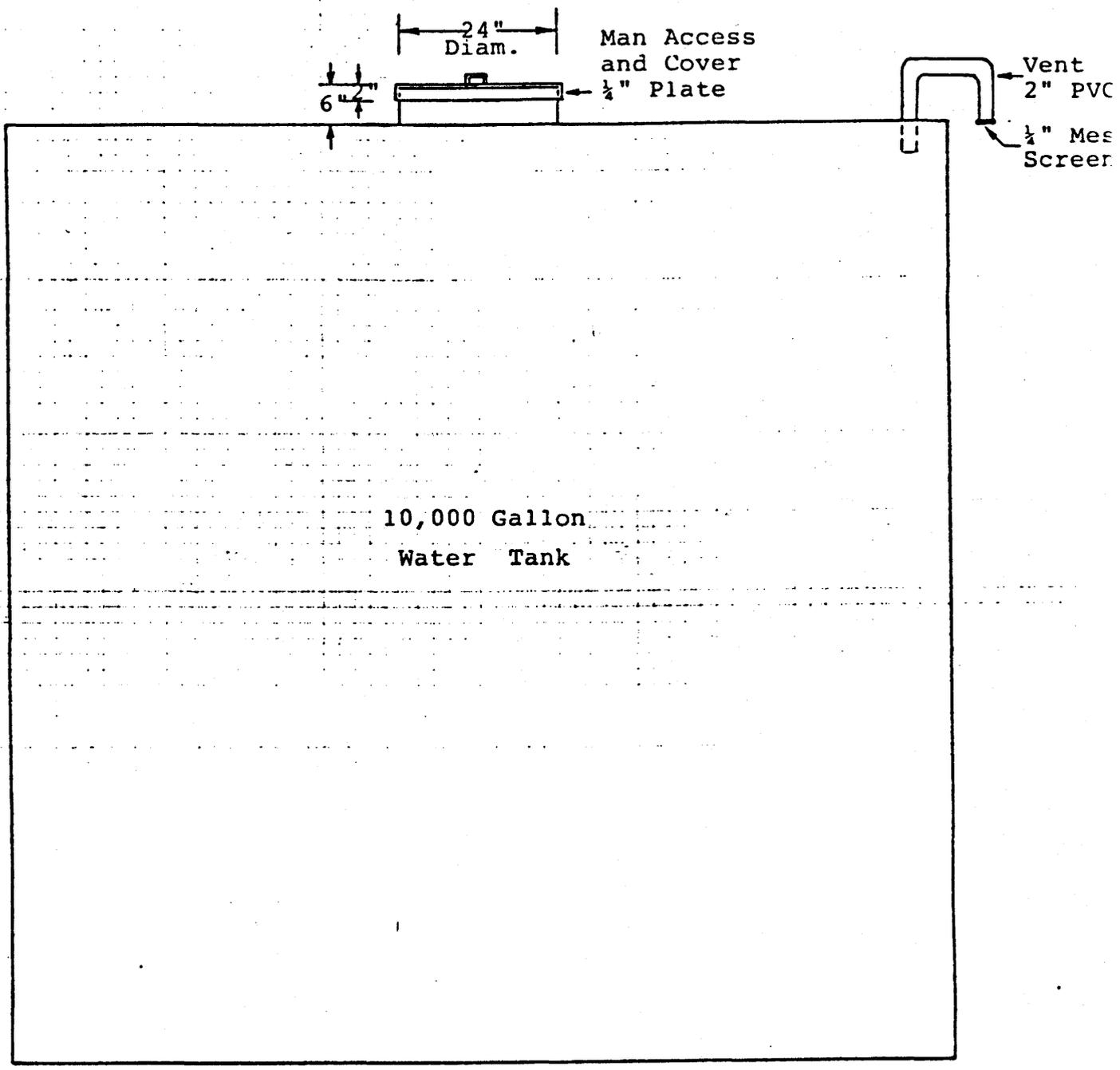
SHEET NO. OF

CHKD. BY DATE

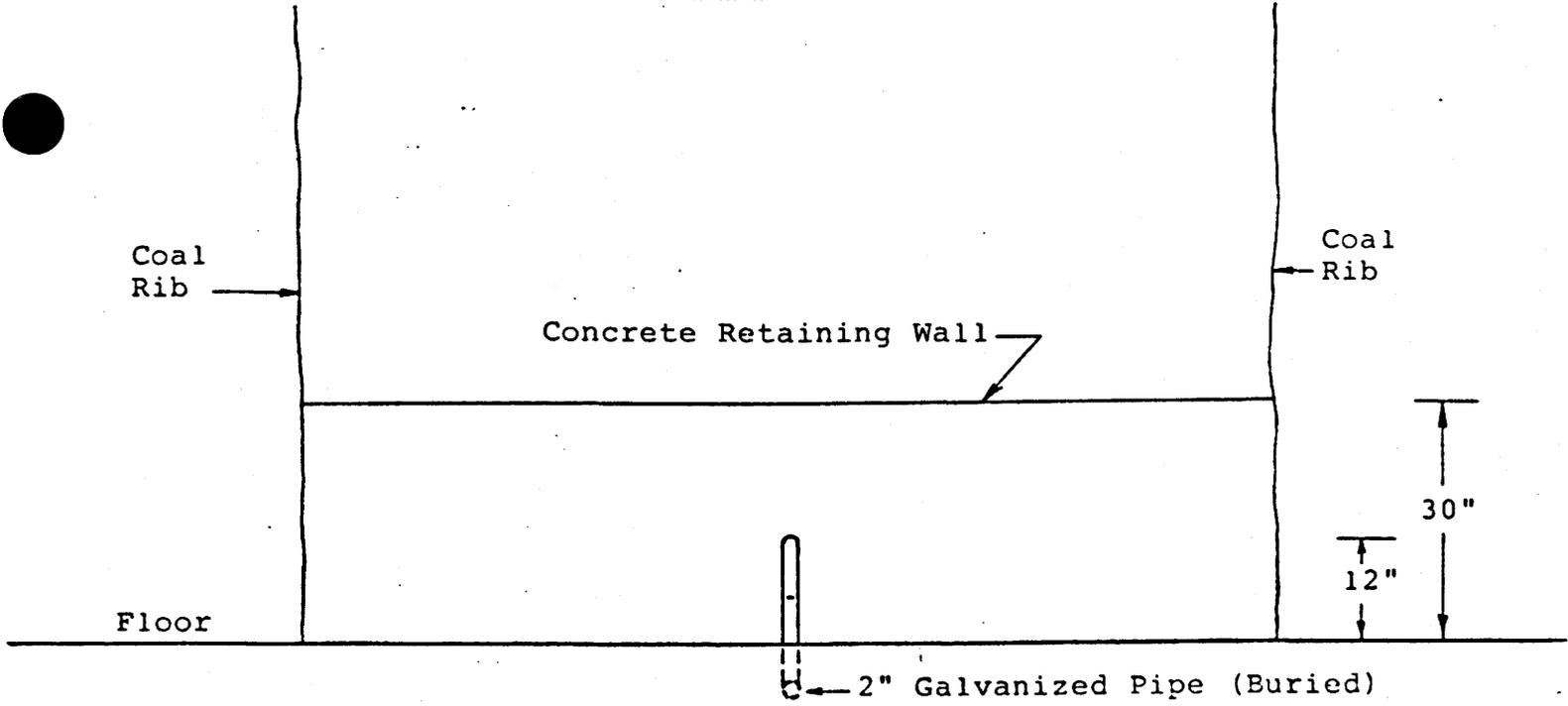
and Vent Details

JOB NO.

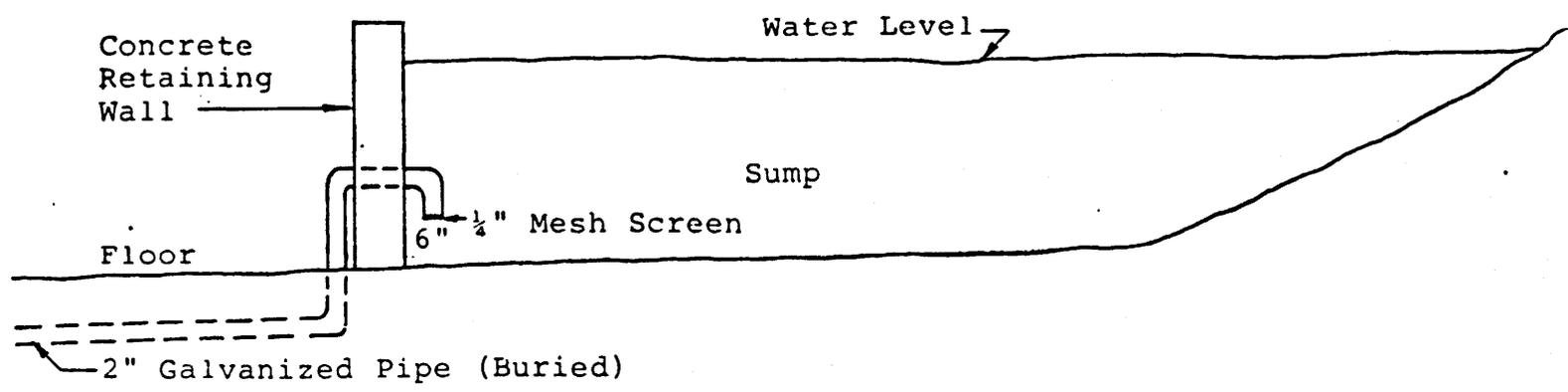
Scale 1" = 2'



10,000 Gallon
Water Tank



End View
Scale 1" = 2'



Side View
Scale 1" = 2'



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

October 4, 1985

Mr. Mark Page
Area Engineer
Division of Water Rights
P. O. Box 718
Price, Utah 84501

Dear Mr. Page:

RE: Water Rights Applications and Approvals, Co-Op Mining
Company, Bear Canyon Mine, ACT/015/025, #2 and #9, Emery
County, Utah

Enclosed are copies of the water rights applications and approvals from the Co-Op Mining and Reclamation Plan (MRP) for the Bear Canyon Mine. These were submitted as legal documents in Chapter 7 of the MRP. Would you please check the status of these and advise me if all have been approved by your office.

Additionally, our Division anticipates final approval on this mine plan October 15, 1985. Could you please advise us if your office has any concerns pursuant to this permit prior to that date. Thank you for your cooperation in this matter.

Sincerely,

A handwritten signature in cursive script that reads "John J. Whitehead".

John J. Whitehead
Permit Supervisor/
Reclamation Hydrologist

jvb
Enclosures
cc: T. Munson
0141R-39

September 19, 1985

TO: Coal File
FROM: Thomas Munson, Reclamation Hydrologist *TM*
RE: Water Replacement, Co-Op Mining Company, Bear Canyon Mine, ACT/015/025, #9, Emery County, Utah

The following figures regarding the maximum and minimum recorded flows for Birch Springs and Bear Springs were taken from the U. S. Geological Survey Open-File Report 81-539 by Danielson, Remillard, and Fuller 1981.

Bear Springs

Maximum Flow - 86,724,000 gal/yr
Minimum Flow - 57,816,000 gal/yr

Birch Springs

Maximum Flow - 12,088,800 gal/yr
Minimum Flow - 4,888,080 gal/yr

Co-Op currently has 333.77 shares in the Huntington-Cleveland Irrigation Company. These shares equate to approximately 35,889,229.14 gal/yr. Based on the average of the total maximum flow and the total minimum flow for these two springs (80,758,440 gal/yr), Co-Op remains 44,869,211 gal/yr short of being able to replace this average flow. This volume equates to 417.27 shares at .33 ac-ft/share. At \$100/share (current market value) this equates to \$41,726.83 to purchase those shares from the Huntington-Cleveland Irrigation Company.

It is the recommendation of Division hydrologists that Co-Op bond in their Mining and Reclamation Plan for these additional shares in the Huntington-Cleveland Irrigation Company.

btb
cc: Pam Grubaugh-Littig
John Whitehead
9486R-1



STATE OF UTAH
 NATURAL RESOURCES
 Oil, Gas & Mining

Norman H. Bangerter, Governor
 Dee C. Hansen, Executive Director
 Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

October 4, 1985

TO: John J. Whitehead, Permit Supervisor/Reclamation Hydrologist

FROM: Thomas Munson, Reclamation Hydrologist *TM*

RE: Water Replacement, Co-Op Mining Company, Bear Canyon Mine, ACT/015/025, #9, Emery County, Utah

Question #1. Does the Huntington City agreement pertain to Birch Springs? Answer--No, only Bear Springs.

Question #2.; What is the calculation of average flow for Bear Spring alone? Answer--

Maximum Flow (gal/yr) - 86,724,000
 Minimum Flow (gal/yr) - 57,816,000
 $\frac{86,724,000 + 57,816,000}{2} = 144,540,000 = 72,270,000 \text{ gal/yr}$

Current Water Rights

72,270,000.00 avg flow (gal/yr) - Bear Springs
 35,889,229.14 gal/yr - Co-Op's Water Spring
 $\frac{72,270,000.00 + 35,889,229.14}{2} = 36,380,770.86 \text{ gal/yr more or less 11.65 ac-ft/yr} =$
 338.33 shares x \$100/share = \$33,832.87

1 Water Share in Huntington-Cleveland Irrigation Company is worth .33 ac-ft at approximately \$100/share.

Question #3. Could not reach Scott Johanson, lawyer Huntington City, will be in Monday, October 7.

Question #4. Should the Division of Oil, Gas and Mining bond for additional water shares?

Rick Smith states the spring is controlled by the fractures and has stipulated that barrier pillars be left to protect this fracture zone, UMC 817/126(1).

J. Whitehead
Mining File



STATE OF UTAH
DEPARTMENT OF HEALTH

NORMAN H. BANGERTER, GOVERNOR

SUZANNE DANDROY, M.D., M.P.H., EXECUTIVE DIRECTOR

November 19, 1985
533-6146

Melvin A. Coonrod
Permitting & Compliance
Co-op Mining Company
P. O. Box 1245
Huntington, Utah 84528

ACT 1015/025
#24 #9 RECEIVED
NOV 22 1985

Re: Construction Permit
Bear Canyon Mine
Mine Sediment Ponds

DIVISION OF OIL
GAS & MINING

Dear Mr. Coonrod:

We have reviewed the Co-op Mining Company plans and information for the revisions to the Bear Canyon Mine sediment ponds. The August 19, 1985 Mining and Reclamation Plan Section 7 Hydrology by Horrocks Carollo Engineers was reviewed.

As a result of our review it has been determined that the sediment pond revisions basically conform with the State Wastewater Disposal Regulations. This letter constitutes a construction permit for those ponds revisions.

Sediment pond A is to have 1.9 acre foot capacity and sediment pond B 0.2 acre feet capacity. The dike slopes are to be approximately 2 horizontal to 1 vertical. The dike crest widths are designed to be approximately 9 feet. The pond A emergency spillway is to be two feet below the dike crest elevation and the pond B spillway one foot below the crest elevation. Each pond also has a decant pipe system with a submerged inlet to help prevent the discharge of oil or floating debris.

A final inspection of the pond revisions should be arranged with the Environmental Health District Engineer, David Ariotti in Price at 637-3671. If the discharge fails to meet state or federal discharge limitations additional treatment must be provided.

Sincerely,

UTAH WATER POLLUTION CONTROL COMMITTEE

Calvin K. Sudweeks
Calvin K. Sudweeks
Executive Secretary

cc: Division of Oil, Gas and Mining
Southeastern Dist. Health Dept.
Southeastern Dist. Engineer

SRM:pa
388-4

KENNETH L. ALKEMA, DIRECTOR • DIVISION OF ENVIRONMENTAL HEALTH

ACT/015/025
RECEIVED

SEP 6 1984

DIVISION OF OIL
GAS & MINING

#9

OUTLINE OF PROPOSED GROUNDWATER
HYDROLOGY STUDIES

Prepared For:

Co-op Mine, Bear Creek
Permit Area, Huntington,
Emery County, Utah

Prepared By:

Manu Lall, Ph.D.
LaMonte Sorenson
R&M CONSULTANTS, INC.

August, 1984

PROPOSED OUTLINE OF STUDIES

A brief outline of groundwater hydrology studies to be performed by R&M Consultants, Inc. for Co-op Mine to meet the groundwater part of Utah DOGM mine permit application requirements is presented. The scope of these investigations is restricted to an analysis of groundwater hydrology associated with the current mining activity of Co-op in the Bear Creek permit area. A schedule for the re-evaluation of information collected and for the progress of the monitoring program will also be indicated for the permit area. The intent of these studies will be to quantify groundwater resources in the mining impact area, to identify mine-aquifer interactions and the impacts of mining on ground water and to develop an effective monitoring program. Each of the items listed under Utah DOGM permit application guidelines--Chapter 7.1 will be directly addressed. Regional and site-specific investigations will be performed. The major tasks constituting the study approach include:

1. Literature Review: Review of all available published and unpublished information pertaining to the geology, aquifer characteristics, quality and quantity of groundwater, use of groundwater and water rights in the study area. A description of regional hydrology will be based on this information. The water rights inventory will be used to identify locations of possible concern with regard to the impacts of mining on groundwater.

2. Site Specific Investigations:
 - a. Data Acquisition: Data will be collected on mine area lithology (stratigraphy, faulting and fracturing), aquifer thicknesses, piezometric levels in aquifers, hydrogeologic characteristics of aquifers (conductivity, storativity, dispersivity), quantities and locations of natural recharge, and the seasonal variability and quality of groundwater. This data will be acquired from existing drill logs, area springs, literature and test drilling. Preliminary efforts will be made as part of this data collection effort to identify component directions of groundwater flow, above and below the coal seam mined, using piezometric head measurements. Locations of principal mine water inflows, mine

water (recirculation) sumps, and of mine areas with a collection of water will also be documented. Water samples from a number of locations will be submitted for analysis to a qualified laboratory. The water quality results will be correlated with previous water quality data collected in the mine area by the operator and by other agencies.

- b. Mining Impacts on Hydrology: An iterative approach is proposed for assessing the interaction between mining and area aquifers. Of interest is the potential (extent and seasonal variability) for mine water inflows (dewatering needs), for hydrologic abstractions from the aquifer system due to mining, and for the contamination of groundwater by mine water. The general approach suggested is to first develop and apply a numerical simulation model to the mine area aquifers, using the preliminary data gathered. The intent of such an application would be to obtain some estimates of the prevailing and likely flow and contaminant transport patterns (and hence of impacts) as mining progresses. Aquifer stimuli would include natural recharge and discharge (springs, seeps), mine water sumps, any pumping wells and mine seepage faces. Aquifer boundaries, conductivities, storativities and dispersivities, and basal water quality (ground and mine water) will be estimated and specified. A two or three dimensional (as appropriate from preliminary data) flow and solute transport model will be developed and applied. A finite difference model (OSM's upgraded model or one of the USGS models) will be used. The model results will be used to aid the determination of appropriate additional monitoring locations. A schedule for the recalibration of the numerical model (from monitoring information collected) and updated simulations will also be developed. The approach is thus to iteratively use modeling and monitoring to effectively identify mine-aquifer interactions, select new monitoring location and to forecast any expected impacts. Particular attention will be focused on the assessment of impacts at locations with existing water rights. Model results and field observations will be periodically correlated as mining and monitoring progress. Once an adequate set of locations for monitoring has been established following this process, the data base may be large enough to allow the use of statistical techniques for the assessment of impacts and the reliability of the

forecasts. The time frame for such an implementation (including the extent of the monitoring effort) will be decided after the initial investigations in consultation with the operator and with DOGM.

- c. Mitigation of Environmental Problems: Plans and designs for the control of any significant impacts of mining on the quantity and quality of groundwater in the area will be developed subsequent to the analyses described in the previous section.

4. Monitoring Program: Section 3(b) indicated some of the considerations in the development of the monitoring program. The monitoring program has two functions. The first relates to the quantity of groundwater and the second to its quality. Two areas (aquifers) of impact - one above and the other below the coal seam mined - can also be identified. Quantity concerns dominate the monitoring of the upper aquifers, while both the quantity and quality are of interest in the lower aquifers. The depths to which monitoring wells will be drilled in the lower aquifers will be determined by geology (depth to impermeable strata). From the preliminary information available and a site visit it appears that monitoring wells could be drilled from within the mine and from the land surface at locations below the mine. Area springs will constitute primary monitoring sites. For the aquifers immediately above the seam mined, preliminary observations indicate the presence of perched aquifers. Holes drilled in the roof discharge for a few hours and are then dry. Slow seepage from the roof was observed in some mine locations (lower elevations). Records of such locations will be maintained and piezometric head measurements will be made periodically where holes are drilled in the roof. Water quality samples from such inflows will also be collected prior to their formation as mine water. Basal aquifer

water quality will be established from such observations. More rigorous monitoring of the upper aquifers will be initiated if indicated by the simulation model. The continuations of the upper aquifers at locations below mine elevation will be monitored at selected locations in the same manner as the lower aquifers.

The above outline has been prepared based on the assumption that R&M Consultants, Inc. with Dr. Manu Lall as Associate, will perform these services.



LaMonte G. Sorenson
Sr. Engineering Geologist



Norman L. Bennion, P.E.
Manager



STATE OF UTAH
 NATURAL RESOURCES
 Oil, Gas & Mining

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

Scott M. Matheson, Governor
 Temple A. Reynolds, Executive Director
 Dianne R. Nielson, Ph.D., Division Director

September 14, 1984

*ACT/015/025
 #9*

Mr. Wendell B. Owen
 Co-Op Mining Company
 P.O. Box 1245
 Huntington, Utah 84528

Dear Mr. Owen:

This letter is to inform you of the Division's recommendations concerning the Proposed Groundwater Hydrology Study for Co-Op Mine. It should be clearly understood that these suggestions have been arrived at in conjunction with discussions with your consultant. The Division in no way intends to require specific work, but simply to recommend a manner in which needed information could be acquired. These recommendations are being forwarded with the intent to expedite the process of determining UMC 783.15, UMC 784.13, and UMC 784.20 complete.

A prioritized drilling program for the wells associated with the preliminary investigation phase of the study may provide the data necessary to determine the depth, horizontal extent, lithology, and thickness of the Starpoint and Blackhawk aquifer systems, as required under UMC 783.15. The Division recommends that borehole data be first obtained from the below listed sites as located on the Mine Plan Map attached to the proposed study. The Division also recommends that boreholes drilled down either penetrate the water table within the Starpoint aquifer system or extend to a depth of 200 feet. For boreholes drilled up, the Division recommends penetration either into the water table of the Blackhawk aquifer system or to a height of 200 feet.

Drill Site

Drilling Direction

1	up, down
2	up
6	down
7	down
9	down
11	down

The Division recommends that borehole and groundwater data be collected by a qualified geologist or geohydrologist and geophysical logs (e.g., natural gamma, resistivity) be obtained from boreholes drilled downward.

The proposed groundwater study must also include the methods and commitment to obtain and analyze data pertaining to the groundwater potential of the Castlegate Sandstone.

With regard to information required by UMC 784.20, the Division recommends that a geologic mapping program be initiated to identify potential recharge areas. Data generated by this program should be submitted in the form of a geologic map with appropriate lithologic descriptions.

The analytical data for the topsoil substitute material must be submitted as required by UMC 784.13.

In summary, the Division will promptly proceed with its evaluation of the completeness of the application upon receipt of requested information as given below:

<u>Information</u>	<u>Regulation</u>
1. Borehole and groundwater data and evaluation from drill sites 1,2,6,7,9, and 11.	UMC 783.15
2. A proposal and commitment to a timetable for collection and evaluation of additional data on the groundwater potential of the Starpoint and Blackhawk sandstones, if necessary.	UMC 783.15
3. A proposal and commitment to a timetable for evaluation of the groundwater potential of the Castlegate Sandstone.	UMC 783.15
4. Results of the renewable resource survey.	UMC 784.20
5. Topsoil substitute data.	UMC 784.13

Page 3
Mr. Wendell Owen
September 14, 1984

The Proposed Groundwater Hydrology Study for, as well as other raw data, maps, and information generated by these studies should be assimilated into a format allowing compatible and prompt incorporation into the Bear Creek Canyon Mining and Reclamation Plan.

Best regards,



Dianne R. Nielson
Director

btb
cc: E. Kingston
U. Lall
J. Smith
M. Boucek
01630



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

November 30, 1984

Mr. Wendell J. Owen
Co-op Mining Company
P. O. Box 1245
Huntington, Utah 84528

Dear Mr. Owen:

RE: Surface and Ground Water Monitoring, Co-op Mining Company, Bear Creek Canyon Mine, ACT/015/025, #9, Emery County, Utah

As was discussed November 27, 1984 by telephone with Mr. Mel Coonrod, the Division continues to be concerned with the lack of adequate baseline data regarding surface and ground water monitoring for the above referenced Mining and Reclamation Plan (MRP).

During April 1984, Co-op submitted a revised water quality monitoring plan as part of the MRP currently under review. This revised plan increases the number of Sampling Station locations as well as the parameters to be analyzed. As has been verbally discussed with Co-op in the past, the immediate implementation of the revised monitoring plan is of the utmost importance in order to assure that sufficient baseline information is collected and analyzed, thus enabling Co-op Mining Company to obtain a permanent program permit and to fulfill Board Order 84-040.

Therefore, please be aware that the Division not only advises but encourages the immediate implementation of the water quality monitoring program as is currently contained in the MRP.

Page Two
Mr. Wendell J. Owen
ACT/O15/U25
November 30, 1984

Should you have any questions regarding future water monitoring,
please contact the Division at your earliest convenience.

Sincerely,

Mary M. Boucek
Mary M. Boucek
Permit Supervisor/
Reclamation Biologist

btb
cc: Allen Klein
Ron Daniels
Ev Hooper
Dave Lof
Tom Munson
Rick Smith
John Whitehead
8813R-33 & 34

CO-OP MINING CO.

P.O. Box 15809
Salt Lake City, Utah 84115
Phone (801) 467-4003

file
ACT/015/021
ACT/015/025
Cat. No. 9

Mendell Owen
P.O. Box 1245
Huntington, Utah 84528
801-748-5238

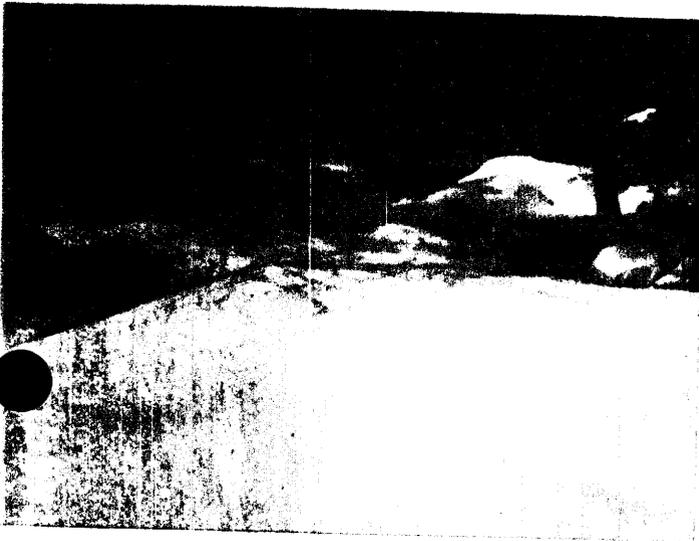
Bill Stoddard
P.O. Box 300
Huntington, Utah
801-748-2777

1-21-83

No flow in all channels during this time.

JIM

FEB 28 1983



Trail Canyon

Rear Canyon



RECEIVED
FEB 25 1983

DIVISION OF
MINE, GAS & MINING

CO-OP MINING CO.

P.O. Box 15809
Salt Lake City, Utah 84115
Phone (801) 467-4003

Wendell Owen
P.O. Box 1245
Huntington, Utah 84528
801-748-5238

To Dave D.
File ACT/015/021
& ACT/015/025
Folder No. 9

Bill Stoddard
P.O. Box 300
Huntington, Utah
801-748-2777

2-22-83

No flow in channels during this time.

JIM

MAR 10 1983



Bear Canyon

Trail Canyon



MAR 10 1983

DIVISION OF



STATE OF UTAH
 NATURAL RESOURCES & ENERGY
 Oil, Gas & Mining

Scott M. Matheson, Governor
 Temple A. Reynolds, Executive Director
 Cleon B. Feight, Division Director

241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

April 14, 1983

REGISTERED RETURN RECEIPT REQUESTED P 324 743 370

Mr. Wendell Owen
 Co-op Mining Company
 P.O. Box 1225
 Huntington, Utah 84528

RE: Water Monitoring
 Trail Canyon Mine
 ACT/015/021
 Bear Canyon Mine
 ACT/015/025 ✓
 Folder No.'s 3 & 9
 Emery County, Utah

Dear Mr. Owen:

I have recently reviewed the water quality and quality data (September '82 to February '83) submitted for stream sites in Trail and Bear Canyons.

We have reason to believe that the information submitted on December 20, 1983, January 21, 1983 and February 22, 1983 is not reliable. Inspectors and technical staff personnel examining the minesite close to the time the January sample was taken witnessed flows in the stream channels. They dug through the snow cover just above the new road leading to the proposed Wild Horse Ridge Mine.

It is not necessary to photograph the sites because flow can occur beneath the snow cover. Only a statement is necessary if no flow exists, however, a reasonable effort should be employed to obtain the sample.

Non-submittal of proper samples will result in a notice of violation in the future.

Sincerely,

DAVID W. DARBY
 RECLAMATION HYDROLOGIST

DWD/lm

cc: John Whitehead, DOGM
 Scott Nordness, Co-op
 Bill Stoddard, Co-op

DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

150 West North Temple, P.O. Box 2500, Salt Lake C



File
9
APR 10 1983 / 625

Director
1

James O. Mason, M.D., Dr.P.H.
Executive Director
801-533-6111

May 5, 1983
533-6146

DIVISIONS

Community Health Services
Environmental Health
Family Health Services
Health Care Financing

OFFICES

Administrative Services
Community Health Nursing
Management Planning
Medical Examiner
State Health Laboratory

Mr. Wendall J. Owen
Co-op Mining company
P.O. Box 1245
Huntington, UT 84528

RE: Bear Canyon Coal Mine

Dear Mr. Owen:

The Division of Environmental Health has reviewed the Co-op Mining Company's Bear Canyon Coal mine plan information dated November 16, 1982. Additional information on the culinary water supply and sediment pond must be submitted to this Division for our review as indicated in the attached February 2, 1983 Water Pollution Control letter and March 15, 1983 Public Water Supply memorandum.

Sincerely,

Dennis R. Dalley
Assistant Director
Division of Environmental Health

SRM:laf

cc: Division of Oil, Gas and Mining
Southeastern District Health Dept.

1175-10

RECEIVED
MAY 09 1983
DIVISION OF
OIL GAS & MINING

CO-OP MINING CO.

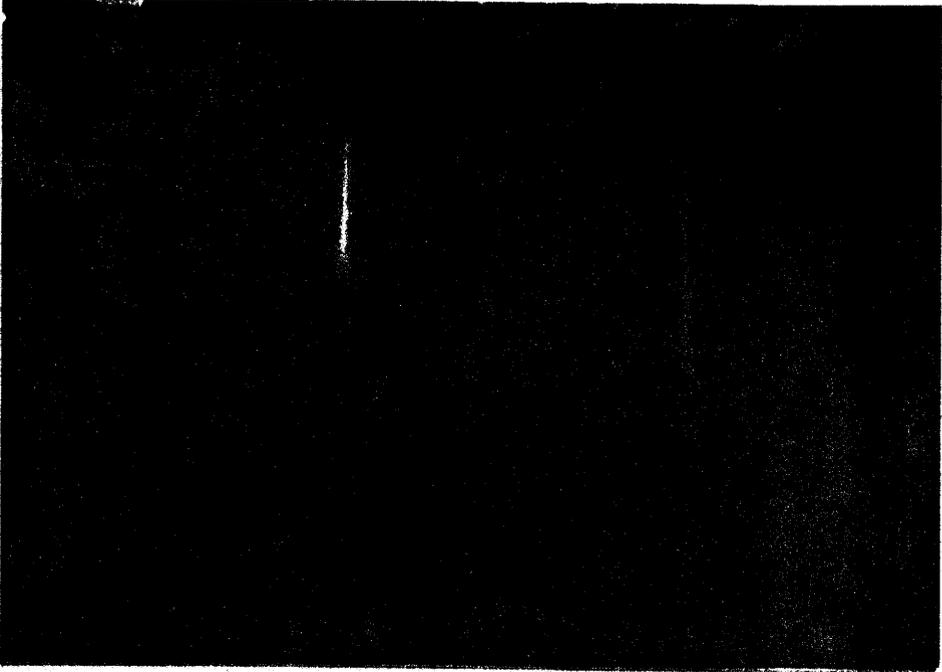
P.O. Box 15809
Salt Lake City, Utah 84115
Phone (801) 467-4003

Wendell Owen
P.O. Box 1245
Huntington, Utah 84528
801-748-5238

Bill Stoddard
P.O. Box 300
Huntington, Utah
801-748-2777

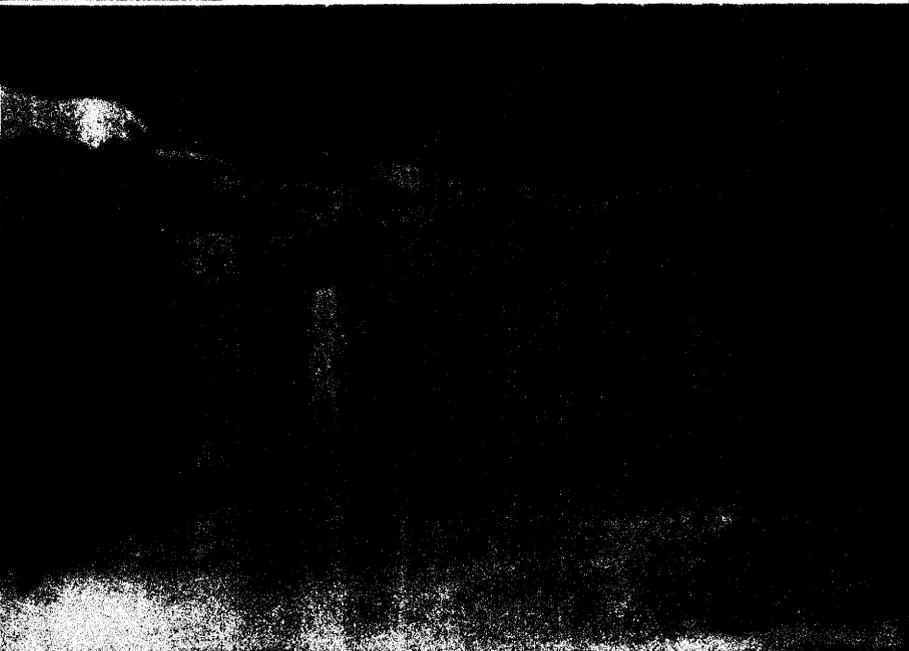
12-20-83

No flow in all channels during this time.



Bear Canyon

Trail Canyon



RECEIVED
DEC 20 1983

DIVISION OF
WATER RESOURCES



SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

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March 5, 1981

0367120

REGISTERED - RETURN RECEIPT REQUESTED

Mr. Wendell J. Owen
Co-op Mining Company
P.O. Box 300
Huntington, Utah 84528

3 + #9

RE: Surface & Groundwater Modifications
ACT/015/021 and ACT/015/025
Emery County, Utah

Dear Mr. Owen:

Pursuant to your current interim Surface and Groundwater Monitoring Plans, the Division hereby directs Co-op Mining Company to implement the following additional sampling procedures to eliminate previous inconsistencies and misunderstandings and to provide adequate compliance with respect to your current mining and reclamation plan on file.

Surface Water Monitoring

Samples shall be taken at Trail Creek and Bear Creek, (classified as perennial streams-U.S.G.S.), above and below the mining operation on a consistent sampling schedule each month. This schedule shall allow a minimum of 25 days between sampling dates. It is suggested that the same date be utilized each month to simplify your monitoring requirements. This frequency of monitoring shall continue until such time as sufficient baseline data is established and on file with the Division, or until an amended water monitoring plan is submitted and approved by the Division under the Permanent Regulatory Program. Delineation of at least one complete years' worth of quantity and quality measurements, adequately depicting the seasonal variations or trends characteristic of both streams. If no flow is observed on the sampling date, monitor each day thereafter until a representative sample from the above-mentioned stream courses can be taken. "No-flow", is not acceptable to the Division for a perennial stream without explicit explanation and/or documentation describing the unique situation.

Mr. Wendell J. Owen
March 5, 1981
Page Two

Groundwater Monitoring

Sampling for Springs #1 and 2 shall depict annual high and low flows and shall consist of a minimum sampling frequency of twice per year during the spring and fall. Sampling during the spring should be commenced no later than May 31. Sampling during the fall should commence no later than October 31.

Once again, "No-flow" is not acceptable to the Division for any major springs without pertinent information describing said circumstances.

Reporting Frequency

For water monitoring programs approved under the Interim Regulatory Program, the schedule for reporting monitoring data shall be as outlined in MC 715.17(b)(1)(v). (Within 60 days of sample collection, for discharges not otherwise covered by other Federal or State permits).

Groundwater sampling results should coincide with surface water submission frequency requirements.

I hope these procedures will aid both Co-op Mining Company and the Division in correcting those areas where there may have been misunderstandings in the past.

If you have any questions regarding these additional sampling procedures, please contact myself or Mr. D. Wayne Hedberg of my staff.

Sincerely,

for 
JAMES W. SMITH, JR.
COORDINATOR OF MINED LAND DEVELOPMENT

JWS/te

cc: Larry Damrau, O.S.M.

SCOTT M. MATHESON
Governor

AMBLE A. REYNOLDS
Executive Director,
NATURAL RESOURCES

CLEON B. FEIGHT
Director



STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
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HERM OLSEN

August 17, 1981

4697104

REGISTERED RETURN RECEIPT REQUESTED

Mr. Wendell Owen
Co-op Mining Company
P. O. Box 1245
Huntington, Utah 84528

74 #9

RE: Water Monitoring and
Reporting Violations
#81-3-16-1; #8-3-17-1
ACT/O15/O21 and
ACT/O15/O25
Emery County, Utah

Dear Mr. Owen:

As you will recall, we discussed surface and ground water monitoring data submittal deadlines during the June 24, 1981, quarterly complete inspection. The substance of this discussion was detailed in a March 5, 1981, registered letter addressed to you. Co-op has been previously cited for a violation (80-1-15-2) regarding sampling and reporting problems. Since you indicated during the June 24 inspection that samples had been taken in April, data should have been received by the Division within 60 days of the date you sampled. Even if the sample date was April 30, Co-op should have submitted data to the Division before July 1. Thus, by August 17, more than a liberal allowance for delays in analysis has been granted. The Division feels it has no alternative, at this time, but to issue the enclosed Notice of Violations #81-3-16-1 and #81-3-17-1.

Sincerely,

THOMAS L. PORTLE
RECLAMATION OFFICER

Enclosures

cc: Tom Ehmett, OSM
Inspection Staff

TLP/btm



STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

November 24, 1981

Mr. Wendal J. Owen
Co-op Mining Company
P.O. Box 300
Huntington, Utah 84528

#9

RE: Surface and Ground Water
Reporting Modifications
ACT/015/021 and ACT/015/025
Emery County, Utah

Dear Mr. Owen:

Pursuant to our March 5, 1981, letter submitted to Co-op Mining Company in regard to your current schedule for the reporting of water monitoring data to the Division, and upon review of the data submitted since that time, a few questions have arisen.

- 1) The water sample reports submitted for the second and third quarters indicate that during the months of May (Trail Canyon) and July (Trail and Bear Canyon) there was no water in the stream courses. As outlined in our March 5 letter, a brief explanation as to what the extenuating circumstances were that attributed to the "no flow" situation in the stream is necessary.
- 2) For samples collected during the third quarter, there were no flow measurements given for either stream. Was there a reason for this measurement not being accessed? Please provide these if available.
- 3) As noted on the third quarter report form, the sample collected during the month of September was not available due to computer problems at the testing company.

The Division requires that henceforth Co-op Mining Company forward a carbon copy of the signed certificates of analysis that are received from the certified laboratory and/or consultant performing the chemical testing on the water samples collected from both mining operations.



STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

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Mr. Wendal J. Owen
Co-op Mining Company
Page 2

These certificates are required and submitted by all other active coal operations permitted through this Division and should aid in resolving any other discrepancies and/or misinterpretations that have or may occur in the future.

If you have any questions on this matter, please call me.

Sincerely,

A handwritten signature in cursive script that reads "D. Wayne Hedberg".

D. WAYNE HEDBERG
RECLAMATION HYDROLOGIST

cc: Robert Hagen, OSM
Jim Smith

DWH/tr

File



SCOTT M. MATHESON
Governor

OIL, GAS, AND MINING BOARD

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NATURAL RESOURCES

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL, GAS, AND MINING

1588 West North Temple

Salt Lake City, Utah 84116

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E. STEELE McINTYRE

CLEON B. FEIGHT
Director

September 24, 1979

Mr. Wendell Owen
Co-op Mining Company
P.O. Box 300
Huntington, Utah 84528

9

RE: Bear Creek Canyon Mine
ACT/015/025

Dear Mr. Owen:

As per your telephone request the Division staff has made a determination of minimum culvert sizes for the proposed crossing of Bear Creek and for the wash adjacent to the sediment pond. Using a computer program that utilizes Soil Conservation Service derived curve number technology for hydrograph synthesis it was determined that the stream crossing requires a culvert of a diameter of at least 60 inches, and the culvert for the wash requires a culvert of a diameter of at least 18 inches.

Inlets and outlets of these structures must be rip rapped and trash racks must be installed upstream of the inlets.

Enclosed is a summary of the work performed. If you have any questions, please feel free to call.

Sincerely,

K. Michael Thompson

K. MICHAEL THOMPSON
ENGINEERING GEOLOGIST

KMT/te

Enclosure

CULVERT ADEQUACY - BEAR CREEK MINE

A. Stream Crossing

Given: Area = 2.65 mi²
Curve Number estimate = 75

Find: Peak Flow 10 year-24 hour storm
Peak Flow 10 year- 6 hour storm

Solution:

Time of Concentration - Kent's Formula
Te = 0.405 hours
Peak Flow
10 year- 6 hour storm = 129 cfs.
10 year-24 hour storm = 87 cfs.

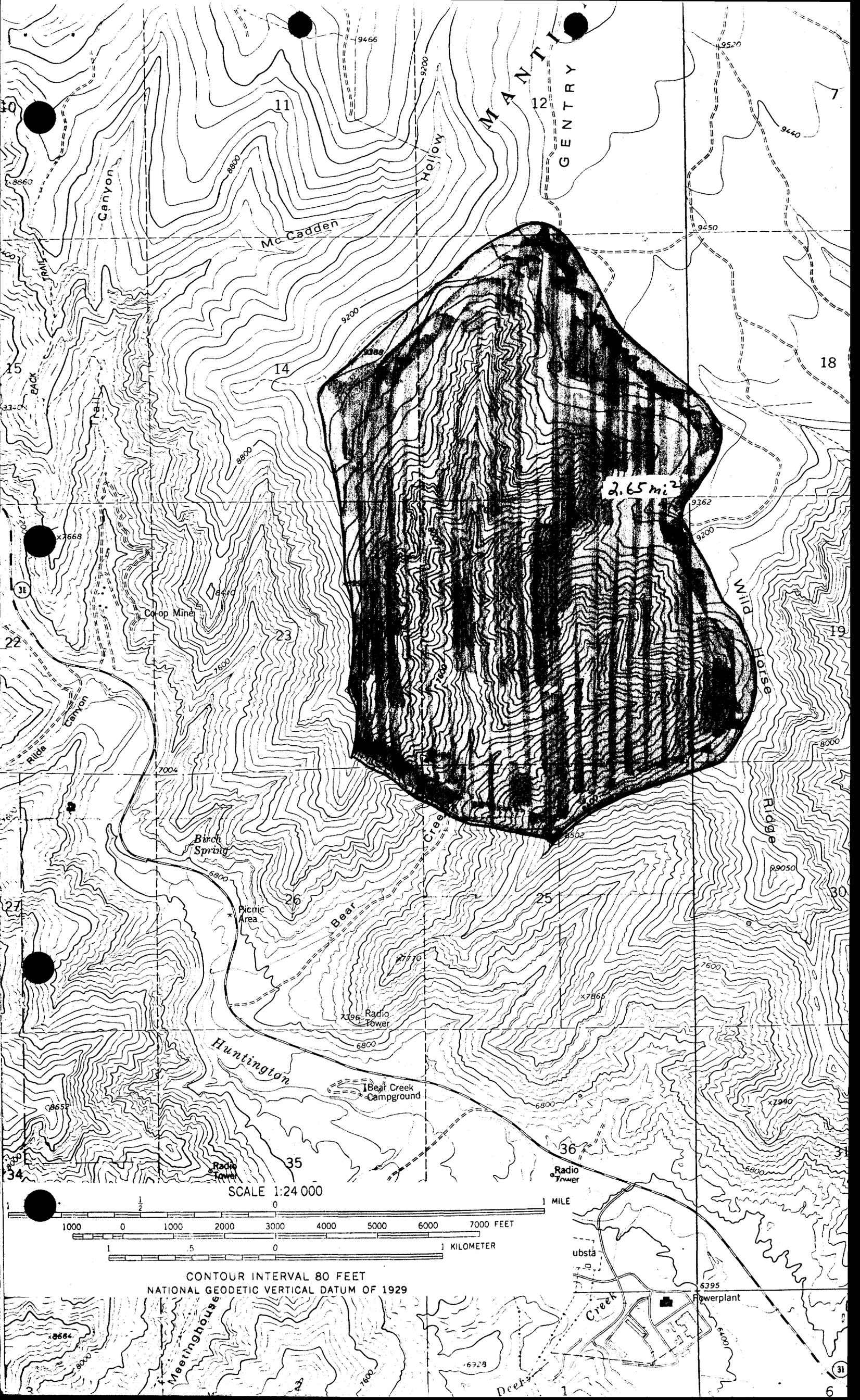
B. Wash adjacent to sediment pond

Given: Area = 0.06 mi²
Curve Number estimate = 75

Find: Peak Flow 10 year-24 hour storm, ←
Peak Flow 10 year- 6 hour storm

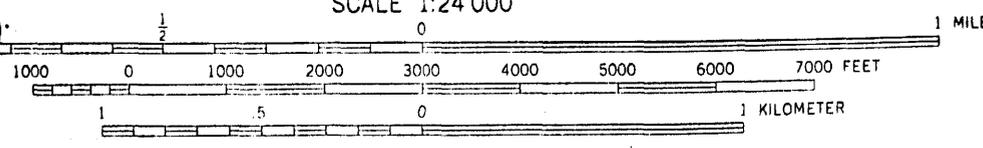
Solution:

Time of concentration - Kent's Formula
Te = 0.178 hours
Peak Flow
10 year- 6 hour storm = 3 cfs.
10 year-24 hour storm = 2 cfs.



2.65 mi²

SCALE 1:24 000



CONTOUR INTERVAL 80 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

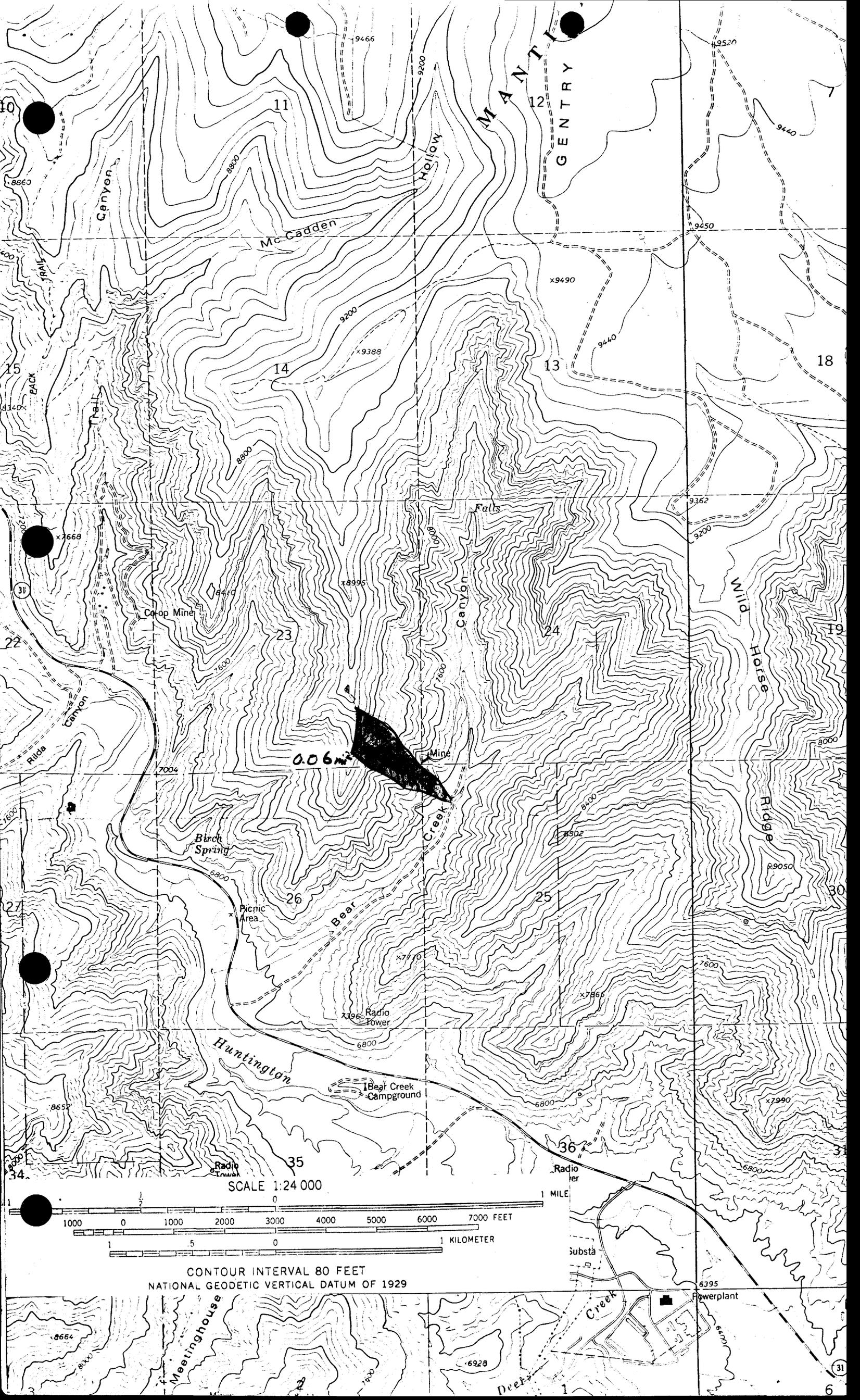
Meetinghouse

ubsta

Creek

Powerplant

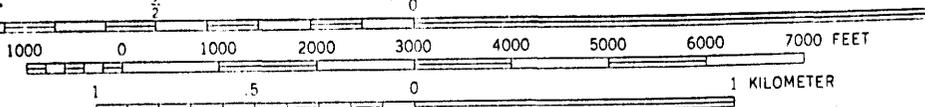
31



0.06 mi

Mine

SCALE 1:24 000



CONTOUR INTERVAL 80 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Substa

Creek

Powerplant

Meetinghouse

Deer

31

6

NOAA ATLAS 2, Volume VI

Prepared by U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service, Office of Hydrology

Prepared for U.S. Department of Agriculture,
Soil Conservation Service, Engineering Division

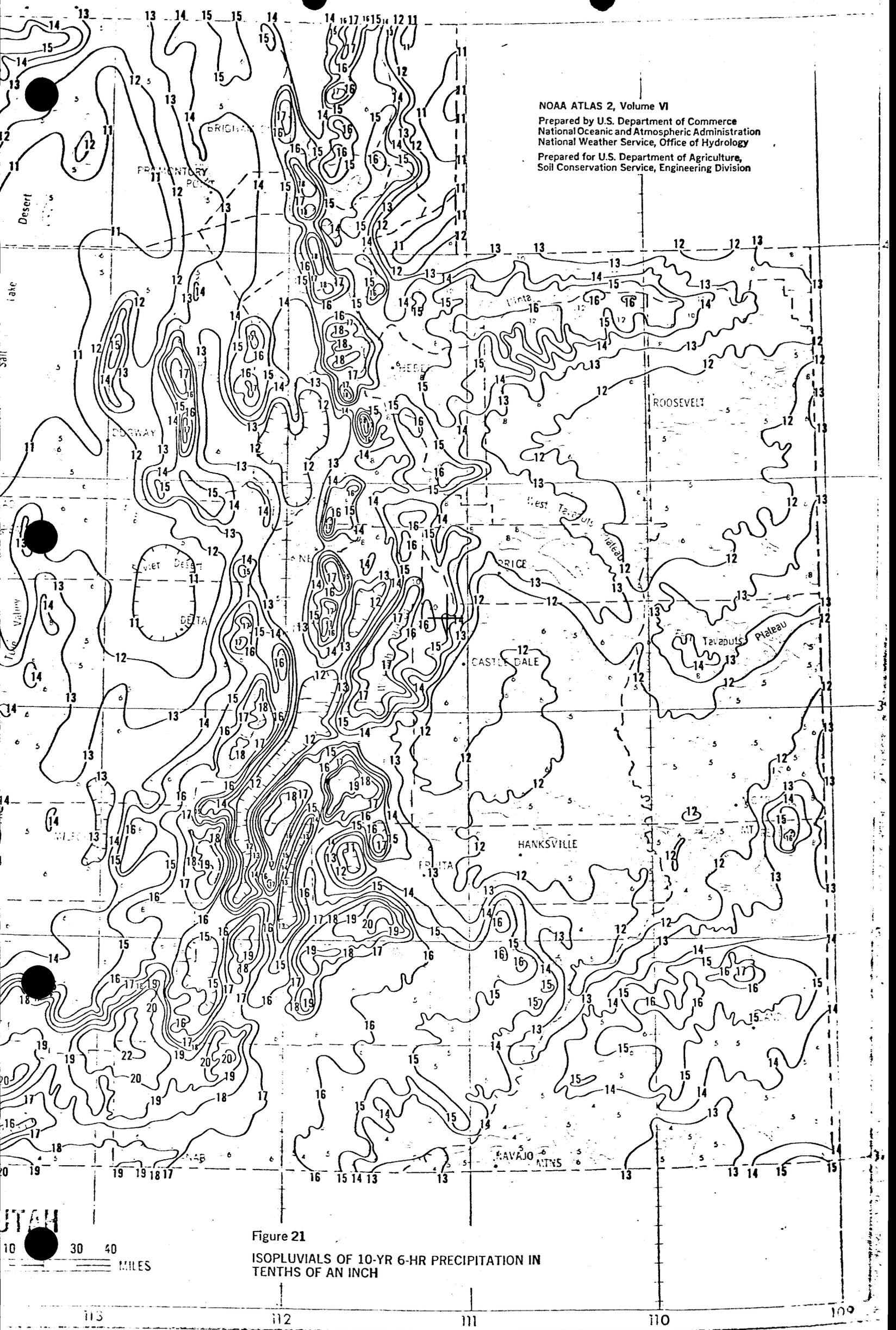
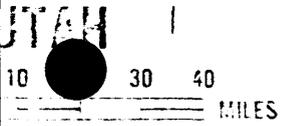


Figure 21

ISOPLUVIALS OF 10-YR 6-HR PRECIPITATION IN
TENTHS OF AN INCH



NOAA ATLAS 2, Volume VI

Prepared by U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Department of Agriculture,
Soil Conservation Service, Engineering Division

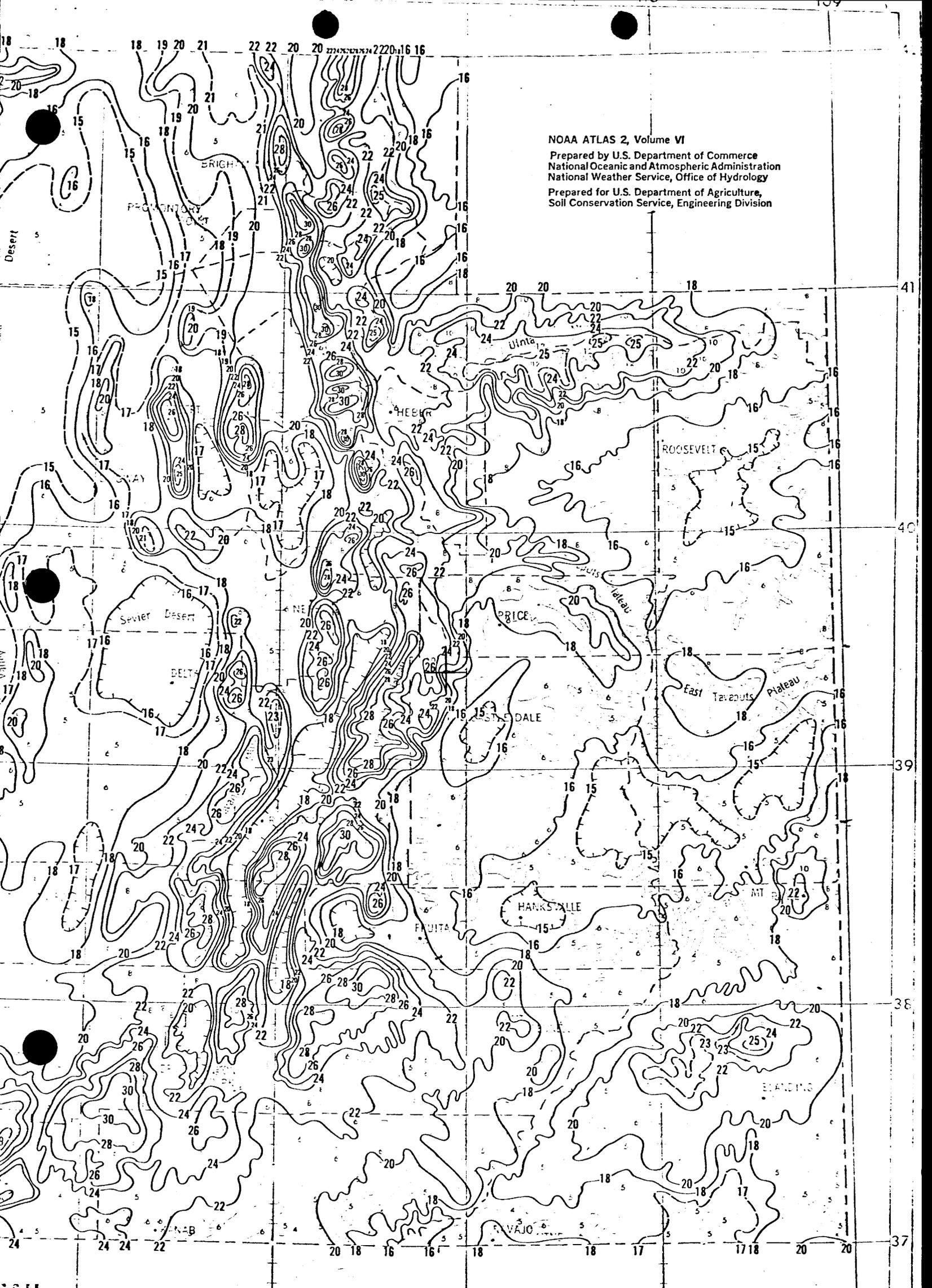
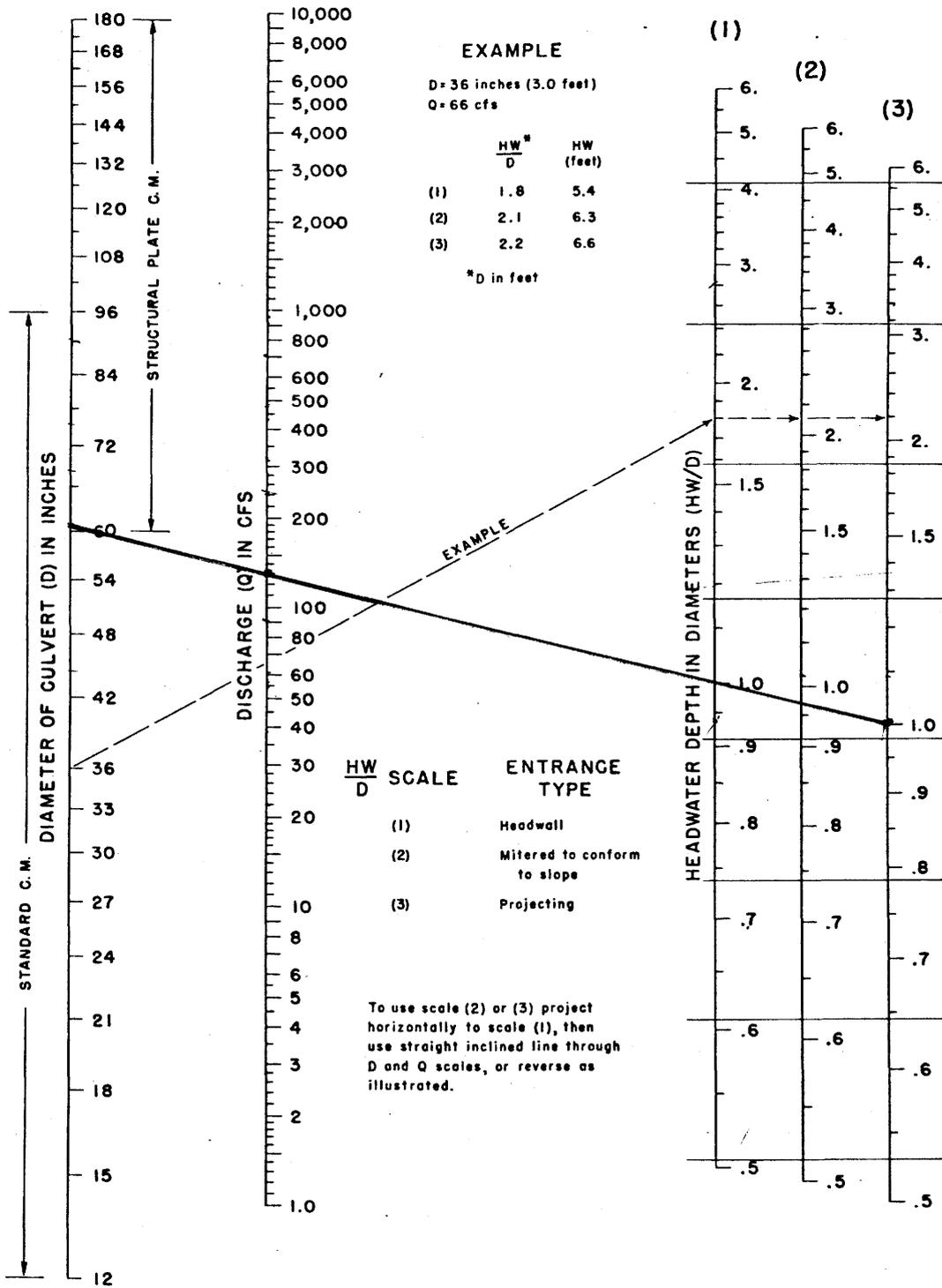


Figure 27
ISOPLUVIALS OF 10-YR 24-HR PRECIPITATION
IN TENTHS OF AN INCH

0 40
MILES

If Multiple Culvert Design, Divide Q (cfs) equally between them & use Q for 1 pipe to determine culvert diameter

Chart 2-53: HEADWATER DEPTH FOR C.M.P. CULVERTS WITH INLET CONTROL



BUREAU OF PUBLIC ROADS JAN. 1963

Culvert adequacy - Stream Crossing

Design Peak Flow = 130 cfs

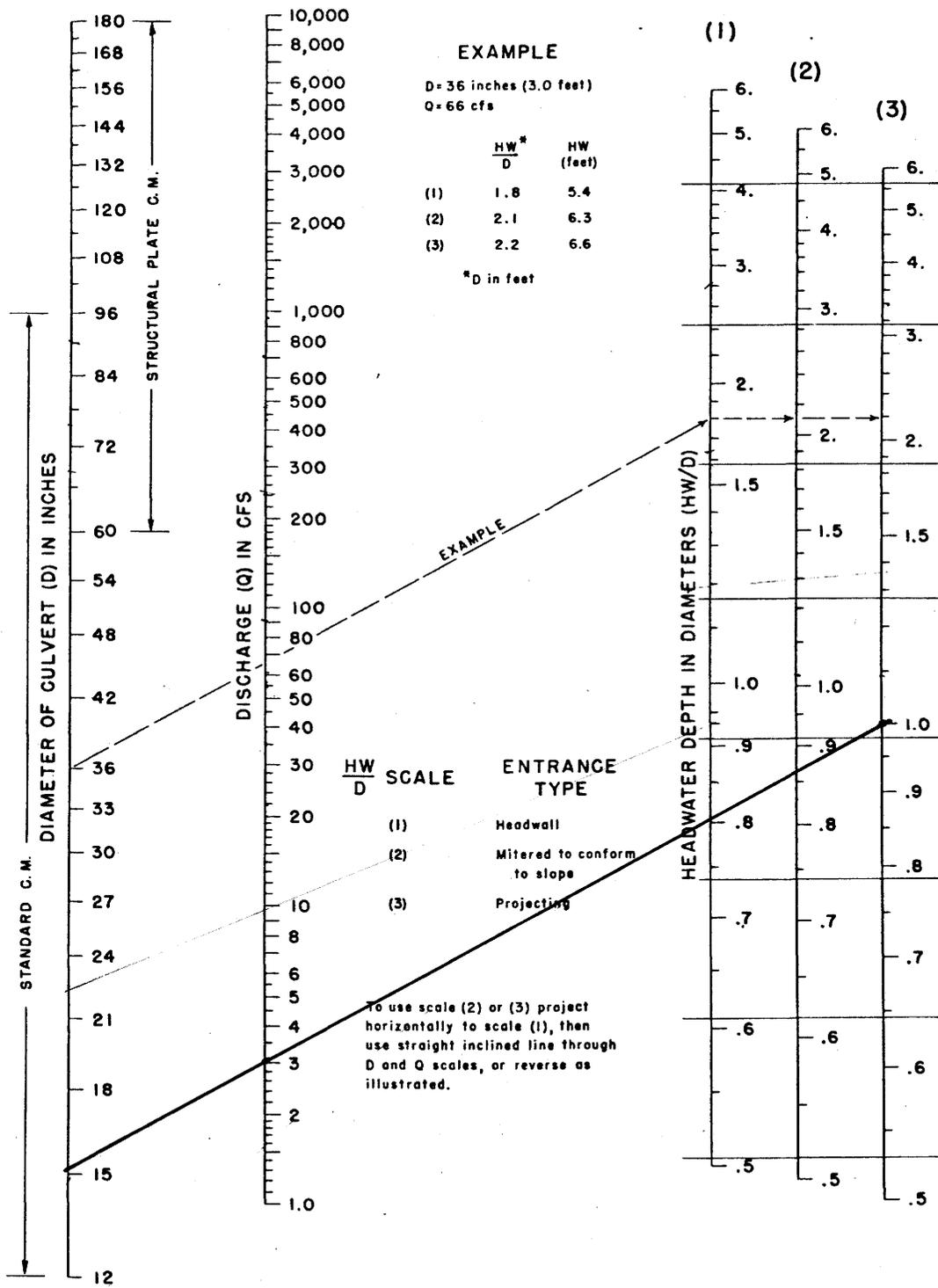
Design for headwater no higher than culvert
 $HW/D = 1$

Assume - Culvert is not mitered to slope of embankment

Culvert diameter required = 60 inches

If multiple culvert design, divide Q (cfs) equally between them & use Q for 1 pipe to determine culvert diameter.

Chart 2-53: HEADWATER DEPTH FOR C.M.P. CULVERTS WITH INLET CONTROL



BUREAU OF PUBLIC ROADS JAN. 1963

Culvert Adequacy - Wash adjacent to Pond
 Design Peak Flow = 3 cfs
 Design for headwater no higher than culvert, $HW/D = 1$
 Assume culvert not mitered to slope of fill
 Culvert diameter required = 15, Allowance for safety factor = 18

BEAR CYN
015-025

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Co-Op Mining Company
Address: P.O. Box 1245
Huntington, Utah 84528
Attn: Ms. Beth Owens

Sample Date: 7/29/85
Date Received: 7/31/85
Your P.O. No: 1268

Sample I.D. Culinary Water

Lab No. 85-5183-W

<u>Parameter</u>	<u>Concentration mg/l</u>	<u>Parameter</u>	<u>Concentration mg/l</u>
Alkalinity (as CaCO ₃)	185	Manganese	-0.01
Arsenic	-0.001	Mercury, Total	-0.0002
Barium	0.05	Nickel	-0.02
Bicarbonate (as CaCO ₃)	179	Nitrogen, Ammonia	0.05
Boron	0.05	Nitrogen, NO ₃ /NO ₂	-0.02
Cadmium	-0.005	pH (units)	8.4
Calcium	39	Phosphorus, Ortho	-0.02
Carbonate (as CaCO ₃)	6	Potassium	8
Chloride	12	Selenium	-0.002
Chromium	-0.01	Silica	10.5
Chromium, Hexavalent	-0.01	Silver	-0.005
Copper	-0.02	Sodium	16
Hardness (as CaCO ₃)	225	Solids, Dissolved	270
Hydroxide (as CaCO ₃)	0	Sulfate	51
Iron	0.04	Surfactants	-0.02
Lead	-0.02	Turbidity	5.8
Magnesium	31	Zinc	0.117
		CO ₂ , Free	3.5
		CO ₂ , Total	86

NOTE: Metals are Total Recoverable unless noted.

Ralph V. Poulsen

Ralph V. Poulsen, Director