

**CO-OP MINING COMPANY**

**ANNUAL REPORT 1997**

**Bear Canyon Mine**  
*ACT/015/025*

**Trail Canyon Mine**  
*ACT/015/021*

**Prepared by**

**Co-Op Mining Company**  
***P.O. Box 1245***  
***Huntington, Utah 84528***  
**(435) 687-2450**

***Charles Reynolds, P.E.***

## GENERAL INFORMATION

1. Permit Number	ACT/015/025
2. Mine Name	Bear Canyon Mine
3. Permittee Name	Co-Op Mining Company
4. Operator Name (if other than Permittee)	
5. Permit Expiration Date	November 2, 2000
6. Company Representative, Title	Charles Reynolds, P.E.
7. Phone Number	(435) 687-2450
8. Fax Number	(435) 687-5238
9. Mailing Address	Co-Op Mining Co.
	P.O. Box 1245
	Huntington Utah 84528
10. Resident Agent, Title	Mr. Wendell Owen
Mailing Address	P.O. Box 1245
	Huntington Utah 84528

## IDENTIFICATION OF OTHER PERMITS

Identify other permits which are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expires on
1. MSHA Mine ID(s)	42-01697	Bear Canyon #1 Mine	N/A
	42-02095	Bear Canyon #2 Mine	N/A
2. MSHA Impoundment(s)		None	
3. NPDES/UPDES Permit(s) (water)	UTGO4000 6	Minor Industrial	4/30/98
4. PSD (Air ) Permit(s)	DAQE- 487-96	Issued 5/2/96	N/A
5.			
6.			

**CERTIFIED REPORTS**

List the certified inspection reports as required by the rules and under the approved plan which must be periodically submitted to the Division. Specify whether the information is included as APPENDIX A to this Annual Report or currently ON FILE with the Division:

Certified Reports:	Reports Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Excess Spoil Piles		X		X		
2. Refuse Piles		X		X		
3. Impoundments	X		X			Ponds A, B, C
4.						
5.						

**REPORTING OF OTHER TECHNICAL DATA**

List other technical data and information as required under the approved plan which must be periodically submitted to the Division. Specify whether the information is included as APPENDIX B to this Annual Report or currently ON FILE with the Division.

Technical Data:	Reports Required?		INCLUDED or ON FILE w/DOGM?			Comments
	YES	NO	YES	NO	ON FILE	
1. Climatological Data	X		X			
2. Subsidence Monitoring Data	X		X			Subsidence Report 11/10/97
3. Vegetation Monitoring Data		X				
4. Soils Monitoring Data		X				
5. Water Monitoring Data	X				X	
First Quarter Report	X				X	
Second Quarter Report	X				X	
Third Quarter Report	X				X	
Fourth Quarter Report	X				X	
6. Geological/Geophysical Data		X				
7. Engineering Data		X				
8. Other Data						
Sediment Material analysis		X	X			



## GENERAL INFORMATION

1. Permit Number	ACT/015/021
2. Mine Name	Trail Canyon Mine
3. Permittee Name	Co-Op Mining Company
4. Operator Name (if other than Permittee)	
5. Permit Expiration Date	May 30, 1999
6. Company Representative, Title	Charles Reynolds, P.E.
7. Phone Number	(435) 687-2450
8. Fax Number	(435) 687-5238
9. Mailing Address	Co-Op Mining Co. P.O. Box 1245 Huntington Utah 84528
10. Resident Agent, Title	Mr. Wendell Owen
Mailing Address	P.O. Box 1245 Huntington Utah 84528

## IDENTIFICATION OF OTHER PERMITS

Identify other permits which are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expires on
1. MSHA Mine ID(s)	42- 00081-0	Trail Canyon Mine	
2. MSHA Impoundment(s)	N/A		
3. NPDES/UPDES Permit(s) (water)	N/A		
4. PSD (Air) Permit(s)	N/A		
5.			
6.			





# APPENDIX A

## Certified Reports

Excess Spoil Piles  
Refuse Piles  
Impoundments

as required under R645-301-514

### CONTENTS

Sediment pond "A" annual inspection report  
Sediment pond "B" annual inspection report  
Sediment pond "C" annual inspection report

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 out slopes 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.

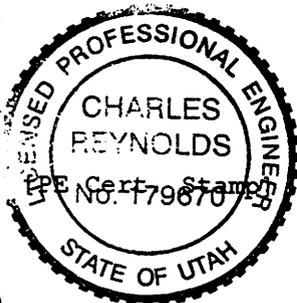
Signature: Charles Reynolds Date: 12/30/97

**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

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		

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

The pond's dam appeared sound with no signs of instability or 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 = 3,670  
 60% cleanout elevation = 7,062.9  
 100% sediment storage elevation = 7,063.4  
 Existing sediment elevation = 7,063.0 (Average)

3. Principle and emergency spillway elevations.

Principle spillway elevation = 7,064.9  
 Emergency spillway elevation = 7,068

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*

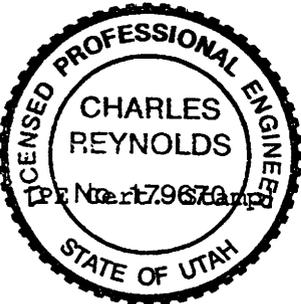
**CERTIFIED REPORT**

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

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 <small>(Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)</small>	Annual/Quarterly
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1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

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.

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>
Required for an impoundment which functions as a SEDIMENTATION POND.	<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 out slopes 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**

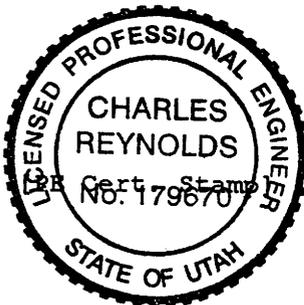
**IMPOUNDMENT EVALUATION (If NO, explain under Comments)**

	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

# APPENDIX B

## Reporting of Technical Data

including monitoring data, reports, maps, and other information  
as required under the approved plan  
or as required by the Division

in accordance with the requirements of R645-301-130 and R645-301-140.

### CONTENTS

Climatological Data  
Subsidence Monitoring Data and Map  
Vegetation Monitoring Data  
Sediment Pond "A" Cleanout Material Analyses

*CLIMATOLOGICAL DATA*

Precipitation - Bear Canyon

<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>	<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>
01/01/97	0.00		03/26/97	0.00	
01/02/97	0.19	rain	.	.	no precipitation during this period
01/03/97	0.00		.	.	
.	.	no precipitation during this period	03/31/97	0.00	lt. rain/snow
.	.		04/01/97	0.00	
01/11/97	0.00		04/02/97	0.10	2-3" snow
01/12/97	0.86	18" snow	04/03/97	0.00	
01/13/97	0.60	8" snow	.	.	no precipitation during this period
01/14/97	0.00		.	.	
.	.	no precipitation during this period	04/22/97	0.00	
.	.		04/23/97	0.38	rain
01/20/97	0.00		04/24/97	0.00	lt. rain
01/21/97	0.20	snow	04/25/97	0.00	
01/22/97	0.00		04/26/97	0.00	
01/23/97	0.17	snow	04/27/97	0.01	lt. rain
01/24/97	0.00		04/28/97	0.00	
01/25/97	0.26	snow	04/29/97	0.10	rain
01/26/97	0.00		04/30/97	0.00	
.	.	no precipitation during this period	05/01/97	0.29	rain
.	.		05/02/97	0.00	
.	.		.	.	no precipitation during this period
01/31/97	0.00		.	.	
02/01/97	0.00		05/19/97	0.00	
02/02/97	0.03	lt. snow	05/20/97	0.15	thunderstorm
02/03/97	0.00		05/21/97	0.15	thunderstorm
02/04/97	0.06	snow	05/22/97	0.00	
02/05/97	0.00		05/23/97	0.23	thunderstorm
.	.	no precipitation during this period	05/24/97	0.20	thunderstorm
.	.		05/25/97	0.08	rain/lt. snow
02/21/97	0.00		05/26/97	0.00	
02/22/97	0.04	1 1/2" snow	.	.	no precipitation during this period
02/23/97	0.00		.	.	
02/24/97	0.00		.	.	
02/25/97	0.00		05/31/97	0.00	
02/26/97	0.00		06/01/97	0.00	
02/27/97	0.00		.	.	no precipitation during this period
02/28/97	0.32	6" snow	.	.	
03/01/97	0.00		.	.	
03/02/97	0.13	1" snow	06/06/97	0.00	
03/03/97	0.00		06/07/97	0.05	rain
03/04/96	0.01	light snow	06/08/97	0.08	rain
03/05/96	0.00		06/09/97	0.05	rain
.	.	no precipitation during this period	06/10/97	0.04	rain
.	.		06/11/97	0.04	rain
.	.		06/12/97	0.00	
03/23/97	0.00		06/13/97	0.25	rain
03/24/97	0.00	lt. snow flurries	06/14/97	0.00	
03/25/97	0.00		06/15/97	0.00	

### Precipitation - Bear Canyon

<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>	<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>
06/16/97			08/18/97	0.00	
		no precipitation	08/19/97	0.02	
		during this	08/20/97	0.29	thunderstorm
		period	08/21/97	0.03	rain
06/30/97	0.00		08/22/97	0.02	rain
07/01/97	0.00		08/23/97	0.07	rain
		no precipitation	08/24/97	0.00	
		during this			no precipitation
		period			during this
07/07/97	0.00				period
07/08/97	0.01	rain	08/29/97	0.00	
07/09/97	0.00	trace of rain	08/30/97	0.00	lt. rain
07/10/97	0.01	rain	08/31/97	0.31	rain all day
07/11/97	0.00		09/01/97	0.16	thunderstorm
		no precipitation	09/02/97	0.24	thunderstorm
		during this	09/03/97	0.34	rain
		period	09/04/97	0.00	
07/16/97	0.00		09/05/97	0.00	
07/17/97	0.00	trace of rain	09/06/97	0.14	thunderstorm
07/18/97	0.00		09/07/97	0.00	trace of rain
		no precipitation	09/08/97	0.07	rain
		during this	09/09/97	0.00	
		period	09/10/97	0.13	rain
07/22/97	0.00		09/11/97	0.00	
07/23/97	0.10	rain	09/12/97	0.00	
07/24/97	0.00		09/13/97	0.13	thunderstorm
07/25/97	0.00		09/14/97	0.00	trace of rain
07/26/97	0.00		09/15/97	0.00	
07/27/97	0.00	trace of rain	09/16/97	0.00	
07/28/97	0.30	rain	09/17/97	0.00	
07/29/97	0.00		09/18/97	0.42	rain
07/30/97	0.00		09/19/97	0.30	rain
07/31/97	0.00	trace of rain	09/20/97	0.00	
08/01/97	0.00				no precipitation
08/02/97	0.00				during this
08/03/97	0.01	rain			period
08/04/97	0.08	rain	09/25/97	0.00	
08/05/97	0.02	rain	09/26/97	0.28	rain
08/06/97	0.07	rain	09/27/97	0.00	
08/07/97	0.00		09/28/97	0.00	
08/08/97	0.00		09/29/97	0.00	
08/09/97	0.00		09/30/97	0.00	
08/10/97	0.34	rain	10/01/97	0.00	
08/11/97	0.26	rain			no precipitation
08/12/97	0.12	thunderstorm			during this
08/13/97	0.06	rain			period
08/14/97	0.00		10/06/97	0.00	
08/15/97	0.00		10/07/97	0.66	rain
08/16/97	0.00		10/08/97	0.00	
08/17/97	0.01	rain	10/09/97	0.00	
08/18/97	0.00		10/10/97	0.00	

**Precipitation - Bear Canyon**

<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>	<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>
10/11/97	0.02	rain/snow	11/20/97	0.02	snow
10/12/97	0.01	snow	11/21/97	0.00	
10/13/97	0.00		11/22/97	0.00	
.	.	no precipitation	11/23/97	0.00	
.	.	during this	11/24/97	0.00	
.	.	period	11/25/97	0.00	
10/23/97	0.00		11/26/97	0.13	snow
10/24/97	0.19	rain/snow	11/27/97	0.16	snow
10/25/97	0.00		11/28/97	0.08	snow
.	.	no precipitation	11/29/97	0.00	
.	.	during this	11/30/97	0.00	trace of snow
.	.	period	12/01/97	0.00	trace of snow
10/31/97	0.00		12/02/97	0.00	
11/01/97	0.00		10/03/97	0.00	trace of snow
.	.	no precipitation	12/04/97	0.00	
.	.	during this	12/05/97	0.00	
.	.	period	12/06/97	0.01	snow
11/06/97	0.00		12/07/97	0.03	snow
11/07/97	0.01	rain	12/08/97	0.04	snow
11/08/97	0.04	rain	12/09/97	0.00	
11/09/97	0.00		.	.	no precipitation
11/10/97	0.15	snow	.	.	during this
11/11/97	0.14	snow	.	.	period
11/12/97	0.00		12/23/97	0.00	
11/13/97	0.00		12/24/97	0.05	snow
11/14/97	0.00		12/25/97	0.00	
11/15/97	0.02	snow	.	.	no precipitation
11/16/97	0.03	snow	.	.	during this
11/17/97	0.00		.	.	period
11/18/97	0.00		12/31/97	0.00	
11/19/97	0.00				

Bear Canyon Total Precipitation: 11.2 inches

Precipitation - Trail Canyon

<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>	<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>
01/01/97	0.00		03/08/97	0.00	
01/02/97	0.38	rain	.	.	no precipitation during this period
01/03/97	0.00		.	.	
.	.	no precipitation during this period	03/23/97	0.00	
.	.		03/24/97	0.00	lt. snow fkurries-No measurable
01/11/97	0.00		03/25/97	0.00	
01/12/97	1.05	22" snow	.	.	no precipitation during this period
01/13/97	0.65	8" snow	.	.	
01/14/97	0.00		.	.	
.	.	no precipitation during this period	03/30/97	0.00	
.	.		03/31/97	0.00	lt. rain/snow
01/20/97	0.00		04/01/97	0.00	
01/21/97	0.22	snow	04/02/97	0.36	3-4" snow
01/22/97	0.00		04/03/97	0.00	
01/23/97	0.17	snow	04/04/97	0.00	
01/24/97	0.00		04/05/97	0.00	
01/25/97	0.27	snow	04/06/97	0.00	
01/26/97	0.00		04/07/97	0.00	
.	.	no precipitation during this period	04/08/97	0.30	1" snow
.	.		04/09/97	0.13	lt. snow
.	.		04/10/97	0.00	
01/31/97	0.00		.	.	no precipitation during this period
02/01/97	0.00		.	.	
02/02/97	0.06	lt. snow	04/22/97	0.00	
02/03/97	0.00		04/23/97	0.49	rain all day
02/04/97	0.07	snow	04/24/97	0.02	lt. rain
02/05/97	0.00		04/25/97	0.00	
.	.	no precipitation during this period	04/26/97	0.00	
.	.		04/27/97	0.09	aftnoon rain
02/17/96	0.00		04/28/97	0.00	
02/18/96	0.00		04/29/97	0.16	early morning rain
02/19/96	0.00		04/30/97	0.00	
02/20/96	0.00		05/01/97	0.38	rain
02/21/96	0.00		05/02/97	0.00	
02/22/96	0.06	2" snow	.	.	no precipitation during this period
02/23/96	0.00		.	.	
02/24/96	0.00		05/19/97	0.00	
02/25/96	0.00		05/20/97	0.32	thunderstorms
02/26/96	0.00		05/21/97	0.50	thunderstorms/hail
02/27/97	0.00		05/22/97	0.00	
02/28/97	0.45	6-8" snow	05/23/97	0.36	thunderstorms
03/01/97	0.00		05/24/97	0.31	thunderstorm
03/02/97	0.16	1" snow	05/25/97	0.16	rain/snow
03/03/97	0.00		05/26/97	0.00	
03/04/97	0.01	lt. snow	.	.	no precipitation during this period
03/05/97	0.00		.	.	
03/06/97	0.00		.	.	
03/07/97	0.00		05/31/97	0.00	

### Precipitation - Trail Canyon

<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>	<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>
06/01/97	0.00		08/07/97	0.00	
.	.	no precipitation	08/08/97	0.00	
.	.	during this	08/09/97	0.00	
.	.	period	08/10/97	0.37	rain
06/06/97	0.00		08/11/97	0.24	thunderstorm/rain
06/07/97	0.05	rain	08/12/97	0.08	thunderstorm
06/08/97	0.08	rain	08/13/97	0.04	rain
06/09/97	0.05	rain	08/14/97	0.00	
06/10/97	0.05	rain	08/15/97	0.00	
06/11/97	0.04	rain	08/16/97	0.00	
06/12/97	0.00		08/17/97	0.01	rain
06/13/97	0.27		08/18/97	0.00	
06/14/97	0.00		08/19/97	0.02	rain
.	.	no precipitation	08/20/97	0.37	thunderstorms
.	.	during this	08/21/97	0.06	rain
.	.	period	08/22/97	0.06	rain
06/30/97	0.00		08/23/97	0.06	rain
07/01/97	0.00		08/24/97	0.00	
.	.	no precipitation	.	.	no precipitation
.	.	during this	.	.	during this
.	.	period	.	.	period
07/07/97	.	no precipitation	08/29/97	0.00	
07/08/97	0.04	rain	08/30/97	0.01	lt.rain
07/09/97	0.00	trace of rain	08/31/97	0.40	rain all day
07/10/97	0.09	rain	09/01/97	0.39	thunderstorm
07/11/97	0.00		09/02/97	0.41	thunderstorm
.	.	no precipitation	09/03/97	0.57	rain
.	.	during this	09/04/97	0.00	
.	.	period	09/05/97	0.00	
07/16/97	0.00		09/06/97	0.27	thunderstorm
07/17/97	0.00	trace of rain	09/07/97	0.00	trace of rain
07/18/97	0.00		09/08/97	0.20	evening thunderstorm
07/19/97	0.00		09/09/97	0.00	
07/20/97	0.00		09/10/97	0.00	
07/21/97	0.00		09/11/97	0.19	rain
07/22/97	0.00		09/12/97	0.00	
07/23/97	0.33	rain	09/13/97	0.36	thunderstorm-Mild flooding
07/24/97	0.00		09/14/97	0.00	trace of rain
07/25/97	0.00		09/15/97	0.00	
07/26/97	0.00		09/16/97	0.00	
07/27/97	0.01	rain	09/17/97	0.00	
07/28/97	0.51	rain	09/18/97	0.60	rain
07/29/97	0.00		09/19/97	0.45	rain
07/30/97	0.00		09/20/97	0.00	
07/31/97	0.01	rain	.	.	no precipitation
08/01/97	0.00		.	.	during this
08/02/97	0.00		.	.	period
08/03/97	0.03	rain	09/25/97	0.00	
08/04/97	0.68	rain	09/26/97	0.34	heavy rain
08/05/97	0.05	rain	09/27/97	0.00	
08/06/97	0.30	rain	09/28/97	0.00	

### Precipitation - Trail Canyon

<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>	<u>Date</u>	<u>Gauge Reading</u>	<u>Precipitation</u>
09/29/97	0.00		11/14/97	0.00	
09/30/97	0.00		11/15/97	0.02	lt. snow
10/01/97	0.00		11/16/97	0.03	lt. snow
.	.	no precipitation	11/17/97	0.00	
.	.	during this	11/18/97	0.00	
.	.	period	11/19/97	0.00	
10/06/97	0.00		11/20/97	0.02	snow
10/07/97	0.48	rain	12/21/96	0.00	
10/08/97	0.00		.	.	no precipitation
10/09/97	0.00		.	.	during this
10/10/97	0.00		.	.	period
10/11/97	0.04	rain/snow	11/25/97	0.00	
10/12/97	0.02	snow	11/26/97	0.15	snow
10/13/97	0.00		11/27/97	0.18	snow
.	.	no precipitation	11/28/97	0.00	
.	.	during this	11/29/97	0.00	
.	.	period	11/30/97	0.00	
10/23/97	0.00		12/01/97	0.00	
10/24/97	0.23	snow	.	.	no precipitation
10/25/97	0.00		.	.	during this
.	.	no precipitation	.	.	period
.	.	during this	12/05/97	0.00	
.	.	period	12/06/97	0.02	snow
10/31/97	0.00		12/07/97	0.04	snow
11/01/97	0.00		12/08/97	0.05	snow
.	.	no precipitation	12/09/97	0.00	
.	.	during this	.	.	no precipitation
.	.	period	.	.	during this
11/06/97	0.00		.	.	period
11/07/97	0.01	lt. rain	12/23/97	0.00	
11/08/97	0.04	rain	12/24/97	0.05	snow
11/09/97	0.00		12/25/97	0.00	
11/10/97	0.22	snow	.	.	no precipitation
11/11/97	0.20	snow	.	.	during this
11/12/97	0.00		.	.	period
11/13/97	0.00		12/31/97	0.00	

Trail Canyon Total Precipitation: 17.02 inches

*SUBSIDENCE MONITORING DATA*

**CO-OP MINING COMPANY  
SUBSIDENCE MONITORING  
TRAIL AND BEAR CANYON MINES**

STATION	LOCATION	ELEVATION			Change	
		07/19/87	09/24/96	11/10/97	Last	Acc.
SMS-1	Trail/Bear Cyn.	9188.57	9187.91	9187.93	0.02	-0.64
SMS-2	Bear Canyon	8542.60	8542.09	8542.14	0.05	-0.46
SMS-3	Trail Canyon	8769.06	8768.24	8768.24	0.00	-0.82
SMS-4	Trail Canyon	8410.00	8409.74	8409.81	0.07	-0.19
CON-5	Bear Canyon	9379.91	-	9379.91	-	-
CON-6	Bear Canyon	9491.62	-	9491.62	-	-
SMS-7	Bear Canyon	9398.78	9398.05	9398.59	0.54	-0.19
SMS-8	McCadden	9062.15	9062.20	9062.18	-0.02	0.03
SMS-9	Bear Canyon	9348.91	9348.41	9348.61	0.20	-0.30
SMS-10	Bear Canyon	9331.62	9331.58	9331.50	-0.08	-0.12
SMS-11	Bear Canyon			9399.77	0.00	0.00
SMS-12	Bear Canyon			9388.60	0.00	0.00
SMS-13	Bear Canyon			9378.75	0.00	0.00
SMS-14	Bear Canyon			9311.99	0.00	0.00
SMS-15	Bear Canyon			* -	-	-
SMS-16	Bear Canyon			* -	-	-
SMS-17	Bear Canyon			9342.55	0.00	0.00
SMS-18	Bear Canyon			9328.79	0.00	0.00
SMS-19	Bear Canyon			9288.74	0.00	0.00
SMS-20	Bear Canyon			9251.11	0.00	0.00
SMS-21	Bear Canyon			9227.56	0.00	0.00
SMS-22	Bear Canyon			9215.06	0.00	0.00
SMS-23	Bear Canyon			9200.16	0.00	0.00
SMS-24	Bear Canyon			9162.18	0.00	0.00

## Notes:

- (1) CON-6 and SMS-7 through SMS-10 established 9/22/91.
  - (2) The area was walked between all stations. No visible movement, cracks or other subsidence effects were noted during the survey, other than those shown on Plate 3-3.
  - (3) A subsidence hole was reclaimed in the drainage above Birch Springs in Huntington Canyon in 1995.
  - (4) SMS-11 through SMS-24 established 11/10/97
- \* Not surveyed due to snow.

# CO-OP MINING COMPANY

P.O. Box 1245  
Huntington, Utah 84528



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

## **1997 Trail Canyon Vegetation Monitoring**

The 1997 vegetation monitoring for Trail Canyon consisted of qualitative observations of the reclaimed areas. The following observations were made in 1997.

### Reclaimed Sediment pond

The vegetation within the reclaimed sediment pond has increased and grown substantially from 1996. The vegetative growth appears to be doing well.

### Reclaimed Roads and Pads

The appearance of the vegetation throughout the reclaimed site appears to be doing well, and is visually similar to the vegetation measured in 1996.

A small area on the North end of the reclaimed portal access road was encroached upon by a resident of Trail Canyon. This area was repaired and reseeded in October, 1997, in accordance with the approved mitigation plan. A copy of the seed mix tags are attached.

### Noxious Weeds

White top and bindweed were observed adjacent to the reclaimed area near the middle pad reclaimed access road. These noxious weeds were sprayed in the Spring and the Fall of 1997. The weeds will continue to be monitored and sprayed to insure they are kept away from the reclaimed areas.

Sincerely,



Charles Reynolds, PE  
Environmental Coordinator...

CUSTOMER: CO-OP MI  
MIXTURE NAME: RECI  
P.O. NUMBER: 3051

G CO.  
TION MIX

LOT: #12812

PURITY	MIXTURE	TENTS	ORIGIN	GTFM/HARD
25.00%	SECAR BLUEB	H WHEATGRASS	WASHIN	88%
19.09%	CURL LEAF M	MAHOGANY	UTAH	85%
16.21%	BANDERA ROC	MT. PENSTEMON	COLORA	89%
13.18%	FOURWING SA	BUSH	UTAH	60%
10.10%	NESPAR INDIAN	RICEGRASS	CANADA	90%
9.82%	CRITANA THICK	SPICK WHEATGRASS	WASHIN	94%
6.76%	UTAH SWEET VETCH		UTAH	66% + 26%
4.55%	REVENUE SLENDER	WHEATGRASS	MONTAN	98%
3.12%	SANDBERG BLUE	GRASS	MONTAN	81%
1.69%	PALMER PENSTEMON		UTAH	75% + 5%
0.51%	WESTERN YARROW		COLORA	90%
0.48%	PACIFIC ASTER		UT	75%
			UTAH	60%

Part 1 of 2  
lot number 12812 continued

0.28% CRQP  
0.27% WEED

OLDEST TEST DATE: 6./97

NET WEIGHT 29.55 LBS.

SHIP TO: CO-OP MINING CO.  
BOX 1245

125

HUNTINGTON, UT 84528

Part 2 of 2

**TRAIL CANYON REVEGETATION SEED MIX**

*SEDIMENT POND "A" CLEANOUT MATERIAL ANALYSES*



Inter-Mountain Laboratories, Inc.

2506 West Main Street

Farmington, New Mexico 87401

Tel. (505) 326-4737

CO-OP MINING CO.  
Huntington, Utah  
MINE: Co-Op  
LOCATION: Pond A

DATE SAMPLED: August 16, 1997  
DATE REPORTED: November 26, 1997

Lab No.	Location	Depths	pH	EC µmhos/cm @ 25°C	Satur- ation %	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Coarse Fragments %	Sand %	Silt %	Clay %	Texture
56839	Pond "A" No. 1		7.5	2.33	42.4	25.1	9.10	66.4	16.1	22.8	78.0	16.0	6.0	LOAMY SAND
56840	Pond "A" No. 2		7.5	2.69	41.9	11.4	6.54	8.75	2.92	27.0	72.0	17.0	11.0	SANDY LOAM



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2506 West Main Street

Farmington, New Mexico 87401

Tel. (505) 326-4737

CO-OP MINING CO.  
Huntington, Utah  
MINE: Co-Op  
LOCATION: Pond A

DATE SAMPLED: August 16, 1997  
DATE REPORTED: November 26, 1997

Page 2 of 3

Lab No.	Location	Depths	Organic Matter %	Total Organic Carbon %	Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t	Sulfate Sulfur %	Pyritic Sulfur %	Organic Sulfur %	PyrS AB t/1000t	PyrS ABP t/1000t
56839	Pond "A" No. 1		3.7	5.5	0.55	17.3	72.9	55.6					
56840	Pond "A" No. 2		3.6	5.6	0.56	17.6	69.3	51.7					

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur,  
Neut. Pot = Neutralization Potential



Inter-Mountain Laboratories, Inc.

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Farmington, New Mexico 87401

Tel. (505) 326-4737

CO-OP MINING CO.  
Huntington, Utah  
MINE: Co-Op  
LOCATION: Pond A

DATE SAMPLED: August 16, 1997  
DATE REPORTED: November 26, 1997

Page 3 of 3

Lab No.	Location	Depths	Nitrate-Nitrogen ppm	Boron ppm	Avail Na meq/100g	Exch Na meq/100g	Bulk Density	Total Kjeldahl Nitrogen %	1/3 bar	15 bar	H2O Sol Selenium ppm
56839	Pond "A" No. 1		1.04	<0.01	7.68	4.86	1.15	1.21	17.5	7.0	<0.02
56840	Pond "A" No. 2		<0.01	<0.01			1.13	1.19	18.6	7.2	<0.02

Abbreviations for extractants: PE= Saturated Paste Extract, H2OSol= water soluble, ABPTA= Ammonium Bicarbonate-OPTA, AAO= Acid Ammonium Oxalate  
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage, Exch= Exchangeable, Avail= Available

## **APPENDIX C**

Legal, Financial, Compliance and Related Information

Annual Report of Officers  
as submitted to the Utah Department of Commerce  
and other changes in ownership and control information  
as required under R645-301-110.

### **CONTENTS**

Annual Report Of Officers

STATE OF UTAH  
DEPARTMENT OF COMMERCE  
DIVISION OF CORPORATIONS AND COMMERCIAL CODE  
PHONE: (801) 530-4849



PROFIT CORPORATION ANNUAL REPORT

The following information is on file in this office. All profit corporations must file their annual reports and corrections within the month of their anniversary date. Failure to do so will result in Delinquency, Suspension, then Revocation or Involuntary Dissolution of the corporate charter.

THIS BOX MUST BE COMPLETED

CORPORATE NAME, REGISTERED AGENT, REGISTERED OFFICE, CITY, STATE & ZIP		MAKE ALL CORRECTIONS IN THIS COLUMN	
CORPORATION # 104145			
D 06/10/83			
1.	C. W. MINING COMPANY		
2.	CARL E. KINGSTON		
3.	53 W ANGELO AVE		
4.	SALT LAKE CITY UT 84115	UTAH	

WHEN CHANGING THE REGISTERED AGENT THE NEW AGENT MUST SIGN.

5. INCORPORATED IN THE STATE AND UNDER THE LAWS OF. UTAH

6. ADDRESS OF THE PRINCIPAL OFFICE IN THE HOME STATE

ENTER ADDRESS	State or Country
City	Zip

7. BUSINESS PURPOSE: BITUMINOUS COAL & LIGNITE(SURFACE)

DOMESTIC, PROFIT CORPORATIONS ARE REQUIRED TO LIST A CORPORATE OFFICER.

OFFICERS		
8. PRESIDENT	B.W. STODDARD	8.
ADDRESS	PO BOX 300	
CITY, STATE & ZIP	HUNTINGTON UT 84528	
9. VICE PRESIDENT	J.A. GUSTAFSON	9.
ADDRESS	1815 S 1100 W	
CITY, STATE & ZIP	WOODS CROSS UT 84087	
10. SECRETARY	D.J. SANDERS	10.
ADDRESS	53 W ANGELO AVE	
CITY, STATE & ZIP	SALT LAKE CITY UT 84115	
11. TREASURER	D.J. SANDERS	11.
ADDRESS	53 W ANGELO AVE	
CITY, STATE & ZIP	SALT LAKE CITY UT 84115	

DIRECTORS		
12. DIRECTOR	B.W. STODDARD	12.
ADDRESS	PO BOX 300	
CITY, STATE & ZIP	HUNTINGTON UT 84528	
13. DIRECTOR	J.A. GUSTAFSON	13.
ADDRESS	1815 S 1100 W	
CITY, STATE & ZIP	WOODS CROSS UT 84087	
14. DIRECTOR	D.J. SANDERS	14.
ADDRESS	53 W ANGELO AVE	
CITY, STATE & ZIP	SALT LAKE CITY UT 84115	

Under penalties of perjury and as an authorized officer, I declare that this annual report and, if applicable, the statement change of registered office and/or agent, has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete.

15. BY \_\_\_\_\_

16. (Title of President) \_\_\_\_\_

17. Date June 1997

IF THERE ARE NO CHANGES FROM THE PREVIOUS YEAR, AND YOU HAVE ALL CORPORATE REQUIREMENTS FILLED PERTAINING TO OFFICER AND DIRECTOR INFORMATION YOU MAY DETACH THE COUPON BELOW, AND RETURN IT IN THE ENCLOSED ENVELOPE WITH YOUR PAYMENT. YOU MAY KEEP THE ABOVE REPORT FOR YOUR RECORDS.

MAKE ALL CORRECTIONS ON THE FORM ABOVE.

# APPENDIX D

## Mine Maps

as required under R645-301-525.270.

### CONTENTS

3-4A	#1 Mine Blind Canyon Seam
3-4B	#1 Mine Seam Hiawatha
3-4C	#2 Mine Tank Seam
7-10A Through 7-10C	Mine Water Surveys

*VEGETATION MONITORING DATA*