

UNION CARBIDE CORPORATION

URAVAN, COLORADO

SUA - 673

SOLID WASTE DISPOSAL

REPORT

MAY 1981

8107220039 810612  
PDR WASTE  
WM-34 PDR

SOLID WASTE REPORT - 1981

DATA SUMMARY

1.0 MONITOR POINTS

Monitor points will be surveyed in again in June, 1981.

2.0 PIEZOMETRIC MEASUREMENTS

Location of the piezometers is illustrated on Plate 2.0. Total precipitation for May was 0.91 inches.

2.1 POND ONE

Tailing pile One continues to serve as a sump for runoff and seepage from the Club Mesa Spray System Area. The spray system was inactive for the month of May.

Piezometers 2-24 and 2-25 decreased 0.50 and 1.00 feet, respectively. Piezometers 2-17D and 2-18D decreased 0.67 feet. Piezometers 2-17S and 2-18S are dry at elevations of 5,452.51 and 5,466.52, respectively. Piezometer 2-9 stayed constant with piezometer 2-10 dropping 1.08 feet.

Pond One has been inactive since May 30, 1980.

2.2 POND TWO

Pond Two has been inactive since December 30, 1980. Piezometers within pond Two varied as shown:

<u>PIEZOMETER</u>	<u>CHANGE, IN FEET</u>	<u>PIEZOMETER</u>	<u>CHANGE, IN FEET</u>
2-1	+0.09	2-16	+1.00
2-2	0.00	2-19S	+0.02
2-3	-0.09	2-19D	-0.08
2-4	-0.08	2-20	0.00
2-5	-0.25	2-21	-0.08
2-6	0.00	2-23	Dry
2-11	-0.16	2-27	-0.25
2-12	0.00		

Piezometer 2-16 showed the only markable change of an increase of one foot to elevation 5,426.89. There is no operational change to account for this.

### 2.3 POND THREE

Pond Three has been inactive since March 6, 1981. Piezometer 3-1 showed the only decrease with a drop of 0.67 feet. Piezometers 3-2 through 3-4 showed increases ranging from 0.09 to 0.17 feet. The liquor pool in Pond Three has been maintained as an evaporative storage pond.

## 3.0 OPERATIONAL SUMMARY

### 3.1 POND ONE

Minimum freeboard was ten feet. Pond beach was greater than two hundred feet.

### 3.2 POND TWO

Minimum freeboard was eight feet. Pond beach was greater than two hundred feet, the pool is dry.

### 3.3 POND THREE

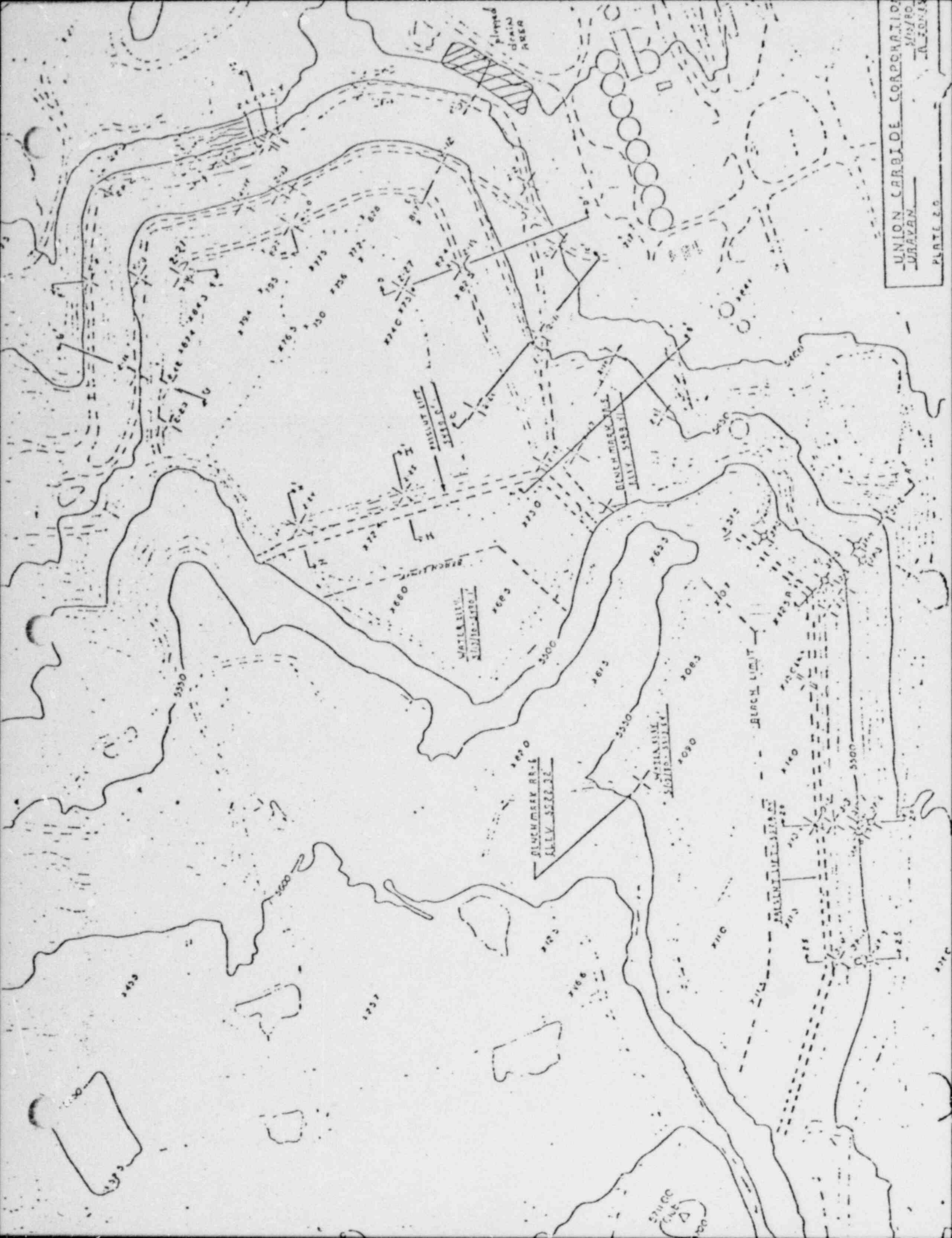
Minimum freeboard was ten feet. Maximum freeboard was ten point one-seven feet. Minimum beach width was 150 feet.

### 3.4 BERM AND DRAINAGE CONDITION

Average drainage from the toe drain system on pond Three was six gallons per minute. The drain system has not plugged again. Wet areas still remain along the lower face of the toe berm and are stabilized in area.

Average drainage from pond Two was thirty-five point nine gallons per minute. Repair of a section of the toe drain was completed in May. Minor seepage past the french drain is still noted near sump number three. Continued flushing of the line may resolve this matter.

Enclosed are copies of inspection reports of work and inspections done during May, 1981. On page two of the letter to Dr. Kagetsu, dated June 2, 1981, item e, the area concerned was constructed as such as a vehicle turn-around and has been dated to 1976. This area, of a steeper slope, is to be modified in June, as per this letter.





PIEZOMETRIC MEASUREMENTS

URAVAN, COLORADO





UNION CARBIDE CORPORATION  
 URAVAN ENVIRONMENTAL DEPARTMENT  
 MONITOR WELL PHREATIC MEASUREMENTS

Monitor Well	Casing Elevation	Surface Elevation	Date
2-6	5418.81	5418.81	4/1/81
2-7	5418.81	DAMAGED	4/8/81
2-8	5410.93	DAMAGED	4/16/81
2-9	5422.43	DAMAGED	4/23/81
2-10	5454.7	DAMAGED	4/28/81
			5/1/81
			5/18/81
			5/27/81
			6/4/81
2-6	5363.77	5363.69	5/13
2-7	5418.81	5363.62	5/18/81
2-8	5410.93	5363.81	5/27/81
2-9	5422.43	5363.89	6/4/81
2-10	5454.7	5363.64	

















OPERATION SUMMARY

DATA

URAVAN, COLORADO

ENVIRONMENTAL DEPARTMENT

TAILING PILE TCE DRAINAGE

FLOW  
GPM

Month May 1980

DATE	SUMP 1	SUMP 2	SUMP 3	SUMP 4	PILE #3	
1	1.53	6.99	2.85	23.70	5.83	35.07
2	1.54	7.01	4.76	27.16	5.83	40.47
3	1.47	6.80	4.62	21.22	5.83	
4	2.05	4.36	5.00	16.74	5.83	
5	1.38	8.21	2.35	29.10	7.42	
6	1.14	6.01	3.46	20.81	7.42	
7	1.54	7.01	4.71	30.68	7.42	
8	0.50	7.10	3.46	17.94	5.01	
9	1.04	6.88	5.53	22.11	5.01	
10	1.03	8.24	5.95	18.22	5.01	
11	2.87	5.10	0	22.43	5.01	
12	0.59	6.74	5.71	21.15	6.8	
13	2.01	6.37	4.66	17.97	6.8	
14	1.83	6.76	3.30	25.04	6.8	
15	1.87	6.77	14.45	36.76	5.83	
16	1.87	6.77	14.45	36.76	9.11	
17	0.53	7.64	5.71	26.50	7.42	
18	2.03	5.02	8.00	23.26	7.42	
19	1.56	6.37	7.48	20.26	5.01	
20	1.46	6.64	6.31	23.26	5.01	
21	1.07	6.37	4.47	19.31	5.83	
22	1.60	6.57	7.70	19.01	6.8	
23	1.49	5.42	6.00	21.22	4.38	
24	0.98	6.54	7.08	20.87	4.38	
25	1.54	6.31	5.75	21.88	4.38	
26	↓	↓	↓	↓	-	
27	↓	↓	↓	↓	5.83	
28	↓	↓	↓	↓	-	
29	↓	↓	↓	↓	-	
30	↓	↓	↓	↓	4.38	
31	↓	↓	↓	↓	4.38	
MEAN	1.47	6.51	5.68	22.23	6.00	
STD. DEV.						

Total Pond 2 - 35.90 gpm

Pond 3 - 6.00 gpm

Total 41.90 gpm

UNION CARBIDE CORPORATION  
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: ONE

Month May 1980

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	200	10'	—		
2	200	10'	—		
3	200	10	—		
4	200	10	—		
5	200	10	—		
6	200	10	—		
7	200	10	—		
8	200	10	—		
9	200	10	—		
10	200	10	—		
11	200	10	—		
12	200	10	—		
13	200	10	—		
14	200	10	—		
15	200	10	—		
16	200	10	—		
17	200	10	—		
18	200	10	—		
19	200	10	—		
20	200	10	—		
21	200	10	—		
22	200	10	—		
23	200	10	—		
24	200	10	—		
25	200	10	—		
26	200	10	—		
27	200	10	—		
28	200	10	—		
29	200	10	—		
30	200	10	—		
31	200	10	—		

REMARKS:



UNION CARBIDE CORPORATION  
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: T<sub>100</sub>

Month May 1980

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	200	8	—		
2	200	8	—		
3	200	8	—		
4	200	8	—		
5	200	8	—		
6	200	8	—		
7	200	8	✓		
8	200	8	—		
9	200	8.17	✓		
10	200	8.17	✓		
11	200	8.17	—		
12	200	8.	—		
13	200	8	✓		
14	200	8	✓		
15	200	8	—		
16	200	8	—		
17	200	8	—		
18	200	8	—		
19	200	8.25	—		
20	200	8.17	—		
21	200	8.33	—		
22	200	8.33	—		
23	200	8.33	—		
24	200	8.33	—		
25	200	8.33	—		
26	200	6.33	—		
27	200	8.33	—		
28	200	8.33	—		
29	200	8.33	—		
30	200	8.33	—		
31	200	8.33	—		

REMARKS:

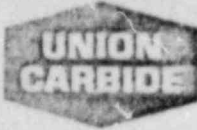
UNION CARBIDE CORPORATION  
URAVAN ENVIRONMENTAL DEPARTMENT

Pond: Three

Month May 1980

DAY	BEACH FT.	FREEBOARD FT.	SPIGOT LOCATION	SURVEYOR INITIALS	METEOROLOGICAL CONDITIONS
1	150	10	—		
2	150	10	—		
3	150	10	—		
4	150	10	—		
5	150	10	—		
6	150	10	—		
7	150	10	—		
8	150	10	—		
9	150	10	—		
10	150	10	—		
11	150	10	—		
12	150	10	—		
13	150	10	—		
14	150	10.17	—		
15	150	10.17	—		
16	150	10.09	—		
17	150	10.09	—		
18	150	10.09	—		
19	150	10.17	—		
20	150	10.17	—		
21	150	10.09	—		
22	150	10.09	—		
23	150	10.09	—		
24	150	10.09	—		
25	150	10.09	—		
26	150	10.09	—		
27	150	10.09	—		
28	150	10.09	—		
29	150	10.09	—		
30	150	10.09	—		
31	150	10.09	—		

REMARKS:



UNION CARBIDE CORPORATION

METALS DIVISION,

URAVAN, COLORADO 81436

May 21, 1981

To: Messrs: T. N. Washburn  
J. F. Frost  
P. C. Rekemeyer  
John Berry

Re: Inspection Report, May 1981  
Uravan Tailing Disposal Sites

On May 13th, the drain system on tailing pile number two, opposite the number three sump, backed up and began seeping through the dike wall onto the nearby roadway. Efforts to clean the drain by means of water pressure, flushing, and cleaning with metal tapes and rotating routers was unsuccessful.

On May 14th, the author placed a call to Mr. John Berry, of Acres American, to propose excavation of the upcomer closest to the plugged section. Agreement was reached with the job to proceed in a cautious manner with attention placed upon slope walls of the berm.

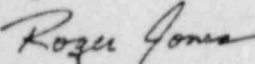
Excavation proceeded with it becoming evident that the upcomer was not fastened to the horizontal perforated drain. Upon reaching the horizontal drain, it was determined that the tee joint welded to the horizontal drain and the upcomer had failed, presumably, during the original placement of unilateral stress on the upcomer. The upcomer had moved a slight amount allowing a void to develop between it and the remainder of the joint. Over a period of time, gravel and dirt sifted into the void and into the drain system, which when mixed with the chemical precipitates within the line, formed a plug. This plug built up over an extended period of time, slowly reducing flow through the system. Flow reduction was anticipated due to reduction in inflow to the tailing system with the plant curtailment in operations.

After cleaning the plugged drain with more efficient equipment which had been unable to turn the ninety degree angle of the eight inch inner diameter elbow connection, a cement sewer type manhole was installed on a cement base with the drain running through the interior. This provides more efficient access to the drain system for repair work.

The excavation into the gravel section was refilled using equivalent gravel and compacted. Excavation above the gravel section was refilled utilizing the rock removed. Compaction with a vibratory device occurred in twelve inch lifts.

The area was regraded after completion of filling the excavation.

Mr. John Berry, Acres American, was informed of the findings and repair work via verbal conversation with the author on May 21, 1981.

  
Roger Jones  
Environmental Engineer

RKJ:ns  
file





June 2, 1981  
P5387.01

Union Carbide Corporation  
Metals Division  
P.O. Box 97  
137 & 47th Street  
Niagara Falls, New York 14302

Attention: Dr. T. J. Kagetsu

Dear Dr. Kagetsu:

Field Inspection Report  
Uravan Tailings Stabilization Project

On May 28, 1981, a field inspection of the Uravan Tailings Stabilization project was conducted by the following individuals.

Dr. Gonzalo Castro - GEI  
Mr. Ralph Brown - UCC (Niagara Engineering)  
Mr. Mark Baretta - UCC (Uravan Environmental Staff)  
Mr. John Berry - Acres American Incorporated

The following comments and observations were made:

1 - Pond 2

- (a) The stabilization berm was in good condition and functioning as designed. No indications of sloughing, erosion or instability were observed.
- (b) One wet area was observed at approximately station 7-7 just above the toe drain system. No seepage flow had developed, the slope was only damp. It was agreed that the wet area was a result of the granular drain system in this area not being able to handle the seepage. This condition is a result of either the material being slightly more impervious in this location and/or excessive flow from a terminated horizontal drain. The situation is not considered serious and it was agreed that if the flow from this area worsened a trench should be excavated from the wet area to the toe drain system and a perforated pipe backfilled with gravel installed to transmit flow directly to the drain.

**ACRES AMERICAN INCORPORATED**

Consulting Engineers

The Forty Bank Building, Main at Court

Buffalo, New York 14202

Telephone 716-853-7525

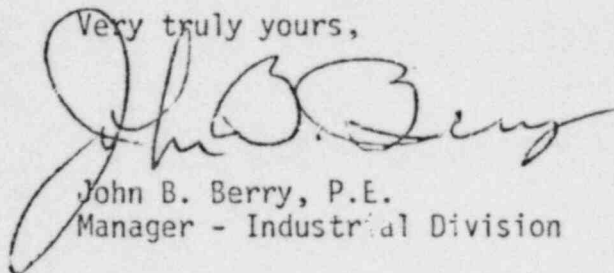
Telex 91-6423 ACRES BUF

- (c) The toe drain system was operating satisfactorily except for one location at approximately Station 9-9 where flow was exiting from the toe of the berm due to pluggage of the toe drain pipe. It was noted that a chemical precipitate has built up at various locations in the toe drain pipe requiring flushing of the system through the vertical observation pipes. It was agreed that the flushing of the toe drain system should be a routine maintenance operation.
- (d) All toe drain discharge pump stations were inspected. No tailings solids were observed in the discharge to the pump stations and the stations were operating satisfactorily.
- (e) At approximately Section 40-40 a portion of the upper tailings crest, on the downstream side, was observed to be undercut for about a 20 foot length and Dr. Castro recommended that the area be backfilled and sloped the same as the adjacent tailings.

2 - Pond 3

- (a) The stabilization berm was in good condition and functioning as designed. No indications of sloughing, erosion or instability were observed.
- (b) Several damp areas were observed just above the toe drain system along the entire berm. This condition was the same as mentioned previously under Pond 2 comments (1-b).
- (c) The toe drain system was operating satisfactorily and discharging seepage without observed tailings solids to the return water pond.
- (d) The return water pond was operating satisfactorily and the pond liner appeared to be in good condition.

Very truly yours,



John B. Berry, P.E.  
Manager - Industrial Division

JBB:sd

cc: Mr. T. Washburn  
Mr. J. Frost  
Mr. P. Rekemeyer  
Mr. R. Jones  
Mr. R. Brown  
Mr. E. Kantz  
Mr. D. Kapral