PDR RETURN TO 396-55 40-6940

KBI
A Division of Cabot Corporation
County Line Road, Boyertown, PA 19512 / Phone: (215) 367-2181

RECEIVED
Date 6/23/82
Log June-8
By Jacques
Orig To
Compl

40-6940
2D Amend

June 18, 1982

RECEIVED
JUN 24 1982
U.S. NUCLEAR REGULATORY COMMISSION
NMSS
Mail Section

Mr. William T. Crow, Section Leader
Mail Stop 55-396
Uranium Process Licensing Section
Uranium Fuel Licensing Branch
Division of Fuel Cycle and Material Safety NMSS
U S NUCLEAR REGULATORY COMMISSION
Washington, DC 20555

RE: Amendment #2 of Application for Renewal of Source Material License SMB-920 Docket No. 40-6940

Dear Mr. Crow:

In response to Dr. A. L. Soong's report of April 8, 1982, we are submitting the following additions and amendments to be made to the application that was originally submitted by us on September 15, 1977 for renewal of our Source Material License number SMB-920:

1. Correction of Form NRC-2 Item 2 -- Re: NAME
Our corporation name is now "CABOT BERYLCO INC." (KBI Division)

Reference: Dr. Soong's Trip Report, April 6, 1982 -- Item IV. Discussion

Item A: KBI request dated 3/5/79 for amendment to decommission Reading facility.

DOCKETED USNRC JUL 09 1982 NMSS MAIL SECTION DOCKET CLERK

Only the fenced area of the slag dump at the Reading, PA site should remain licensed. The remainder of the property should be released for unrestricted use.

Item C: Dr. Soong's report, Item C, KBI renewal application.

Item C (1) -- Maximum amounts of radioactive material to be licensed.

RECEIVED JUL 08 1982 U.S. Nuclear Regulatory Commission NMSS Mail Section

As I have stated to Dr. Soong, it is not under my authority to stipulate the maximum since that is a management decision. Our management would prefer to

FEE EXEMPT
refer to pending renewal.

Applicant
Check No.
Amount/Fee Category
Type of Fee
Fee Check Record
Rec'd By

20879

have the maximum amount of licensed radioactive material as it is stated in the application; however, we are trying to calculate what would be a suitable quantity to insure our operation over a long period of time.

Item C (2) Maps - Appendix 1 (A-C)

Maps and plot plans for each of the three facilities (Boyertown, Reading and Revere) are attached as Appendix 1A to 1C.

Item C (3) (a) Technical Qualifications

The minimum technical qualification for radiation safety officer (R.S.O.) and the assistant RSO are that they shall have successfully completed a 40 hour training program presented by technically competent professional instructors (e.g. certified health physicist or equivalent).

The RSO has the authority to shutdown an operation and to institute appropriate remedial measures anytime he or she believes that operation or practice poses a potential threat to the health and safety of employees or to the public.

See Appendix #2.

Item C (3) (b) Surveys

Radiation surveys are performed at least once every three months of all operations involving the use and storage of licensed materials. The frequency and extent of each survey shall be determined by the RSO. Air sampling and monitoring of surface contamination is an essential part of these surveys wherever source materials are used or stored. Further details are contained in Radiation Safety Procedures Manual.

Action levels have been set at 25% of the applicable MPC's for air and water; $\leq$ 200 dpm/100cm^2 of alpha activity on smears of exposed surfaces; . Any operation or practice that is suspected of being the cause of uncontrolled releases of radioactivity which results in air concentrations and/or smears in excess of double the action level(s) shall be investigated by the RSO or Asst. RSO without delay. The RSO may require the operation or practice to be halted temporarily until remedial action can be taken to reduce the risks to as low as reasonably achievable (ALARA). The frequency and extent of sampling will be increased at the discretion of the RSO to assure control measures are effective and reliable.

Item C (3) (c) - Audit Program

The report of the annual radiological safety audit that is performed by a CHP from Applied Health Physics, Inc. will contain an evaluation of workers' internal exposure trends and summaries of results of analyses of air and liquid released to unrestricted areas.

Item C (3) (d) - Occupational Exposures

Appendix 3A and B contain analyses and summaries of external radiation exposures of workers during 1980 and 1981. These data are reviewed as to origins of exposures, trends, and potential reduction in line with ALARA concepts.

Item C (3) (e) - Waste Management

The management of gaseous, solid and liquid wastes including licensed and non-radioactive materials has been described in Appendix 4 which contains a description of raw materials; processing and treatment of wastes.

The following action will be taken in the unlikely event that the company decides to terminate operations and/or decommission facilities that are currently licensed:

(1) All licensed materials including wastes containing licensed materials will be transferred to another licensed organization.

(2) All facilities and equipment involved in the use, storage or transfer of these materials will be monitored, decontaminated if necessary, and,

(3) certified by independent experts (CHP) to meet all criteria applicable at that time for release for unrestricted use including sale or lease.

(4) formal requests will be made to federal (US NRC/EPA) and state agencies to survey these facilities and to take appropriate action to terminate all licenses, permits and registrations.

We are currently evaluating the request for an environmental impact assessment that has been made in your letter of May 11, 1982 as a result of Dr. Edward Shum's visit to our plant on April 28, 1982. We plan to respond to your letter within the allotted time. In the meantime, we are drafting a revision of our

Radiological Safety Procedures Manual which will embody all of the items contained in this letter and be consistent with the changes to 10 CFR 20. When the manual has been cleared by our management, we will submit it in response to Item 12 (c) of Form NRC-2 that was originally submitted - September 15, 1977.

Please do not hesitate to contact me if you or Dr. Soong have any questions or comments concerning the information contained in this letter or if there is anything we can do to help expedite the renewal and consolidation of our NRC licenses.

Sincerely,

Francis T. Coyle

Francis T. Coyle, RSO
Mgr. Analytical & Testing Depts.

FTC/dja
attachments

APPENDICES

Appendix #1

A-1 USGS Map of Boyertown, Pennsylvania
A-2 KBI plot plan, Boyertown, PA

B-1 USGS map of Reading, Pennsylvania
B-2 Plot plan of dump site

C-1 USGS map of Revere, Pennsylvania
C-2 Plot plan of KBI, Revere, PA

Appendix #2 - RSO Authorization

Appendix #3 - Analyses of Occupational Exposures at KBI for the years 1980 & 1982

A Summary of External Radiation Exposures

1 Film badge data for 1980.
2 Film badge data for 1981.

B Summary of Internal Radiation Exposures

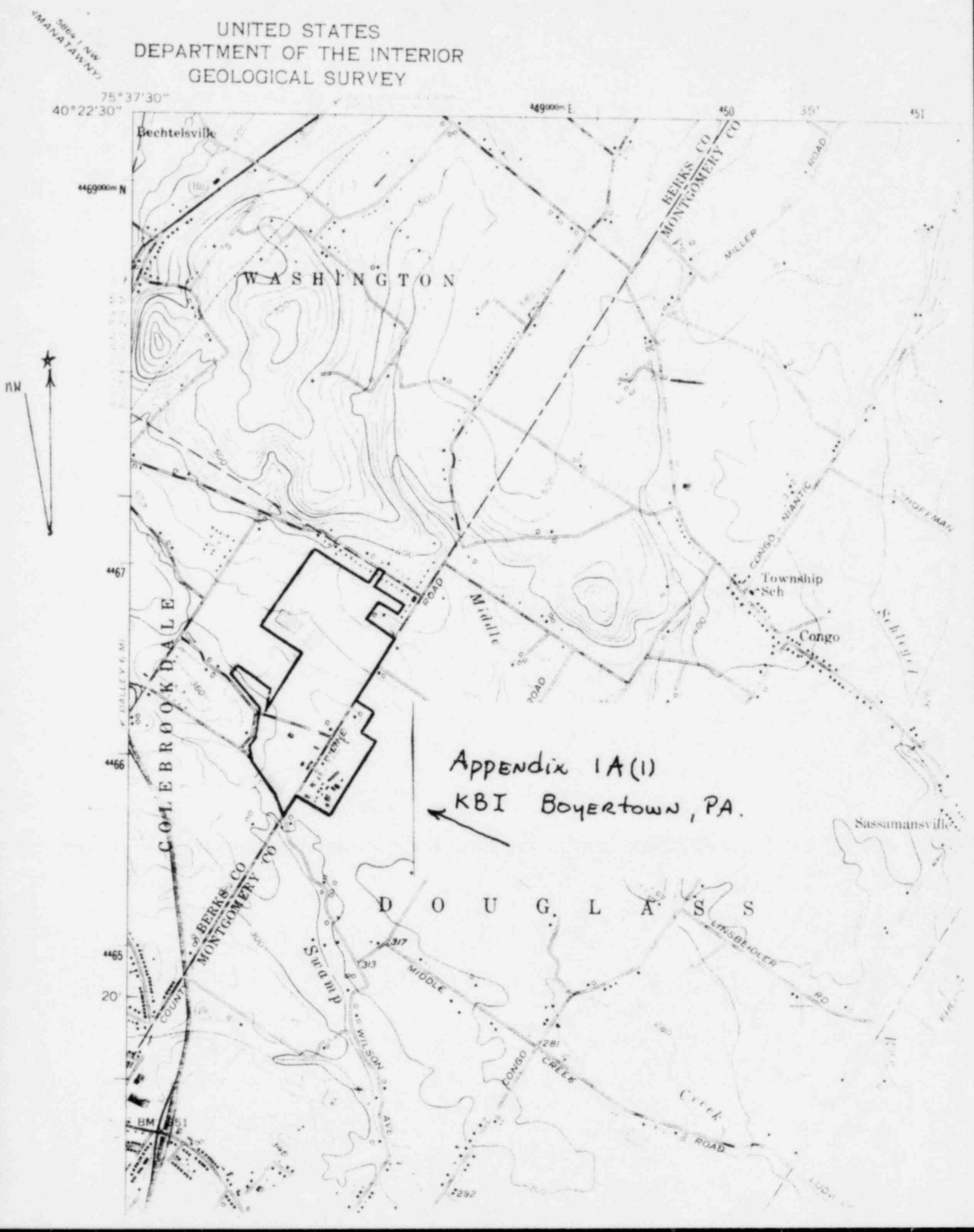
1 Air particulate monitoring data 1980-81
2 Smear sampling for removable alpha 1980-81
3 Urine bioassay data for 1980-81

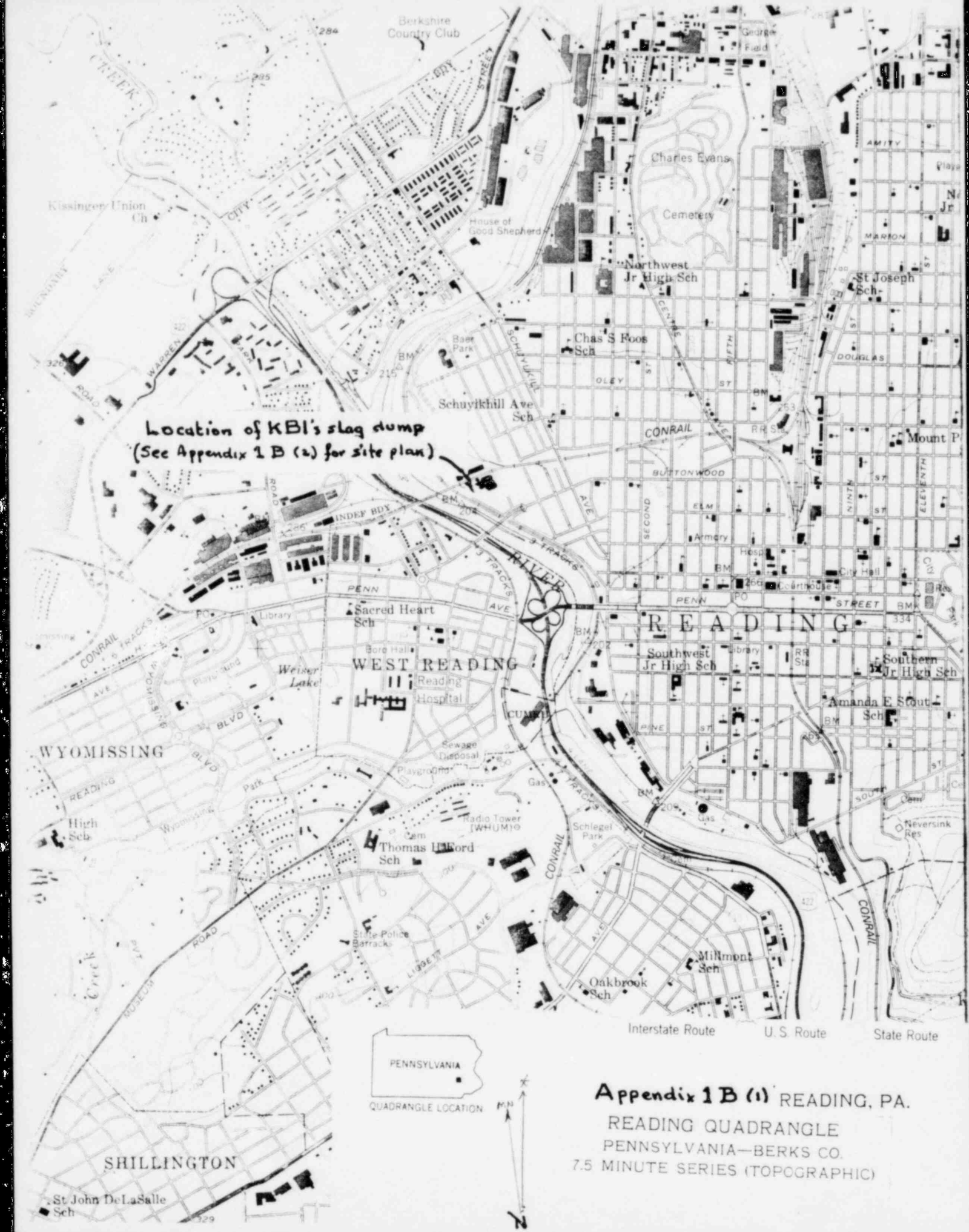
Appendix #4 - Water Management

A Gaseous Wastes
B Solid Wastes
C Liquid Wastes

Appendix #5 - NPDES Permit Covering KBI's Current Operations

Appendix #6 - Dr. Richard Gaines letter


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
75°37'30"
40°22'30"
Bechtelsville
WASHINGTON
COLEBROOKDALE
DOUGLASS
BERKS CO
MONTGOMERY CO
Township
Sch
Congo
Sassamansville
Swamp
Creek
ROAD
MILLER
MIDDLE
WILSON
CONGO
CREEK
LINSBEHOLER
RD
NW
Appendix 1A(1)
KBI Boyertown, PA.

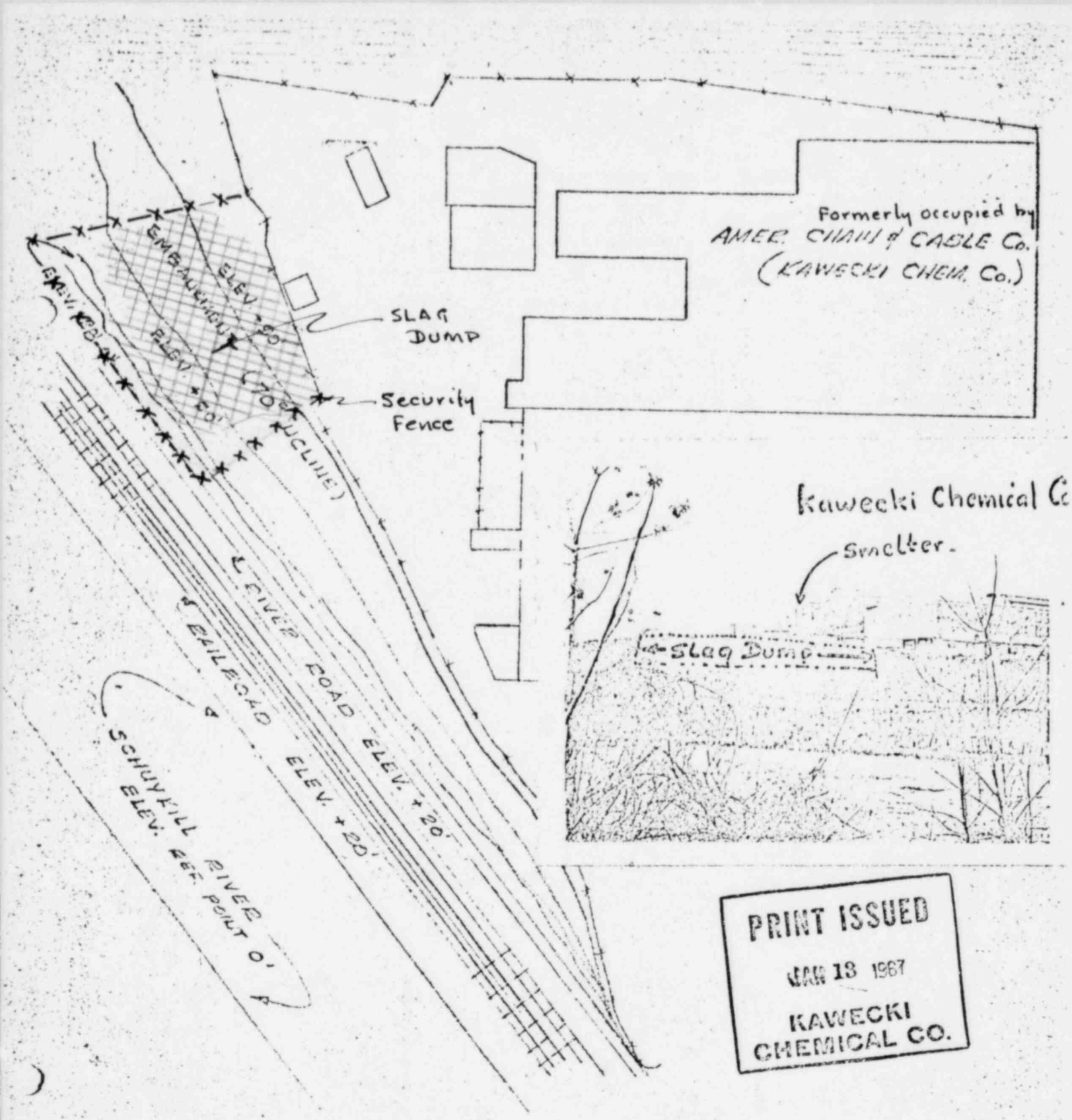


Appendix 1 B (1) READING, PA.

READING QUADRANGLE

PENNSYLVANIA—BERKS CO.

7.5 MINUTE SERIES (TOPOGRAPHIC)



PRINT ISSUED
JAN 13 1967
KAWECKI
CHEMICAL CO.

KAWECKI CHEMICAL CO
BOYERTOWN, PENNSYLVA

LIMITS UNLESS OTHERWISE NOTED:
FRACTIONAL ± 1/64" DECIMAL ± .010" ANGULAR ± ½°

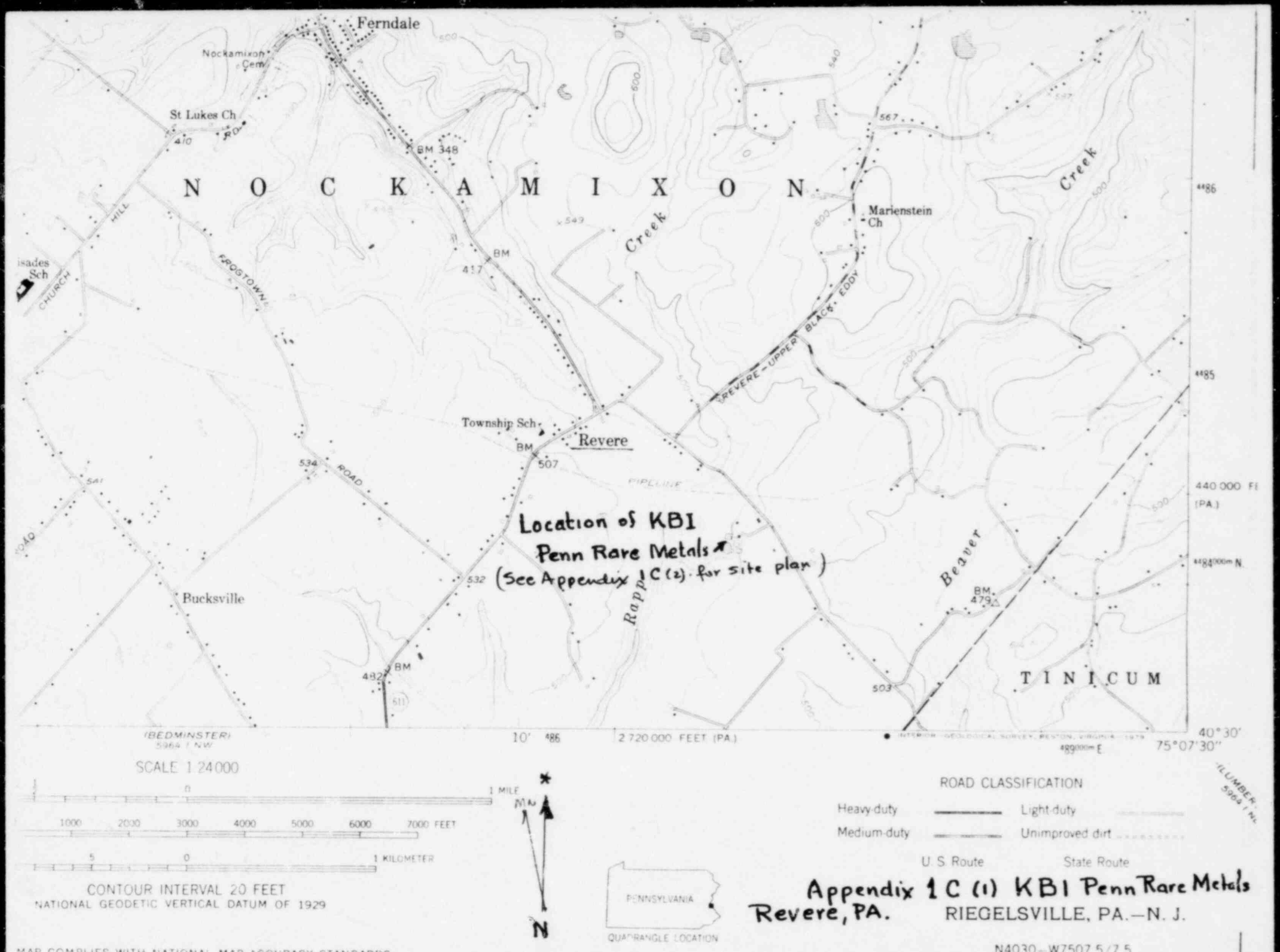
THIS DRA
IN CONN

SCALE	DATE
1" = 100'	1-13-67
DRAWN: R. Castellano	APPROVED
CHECKED	

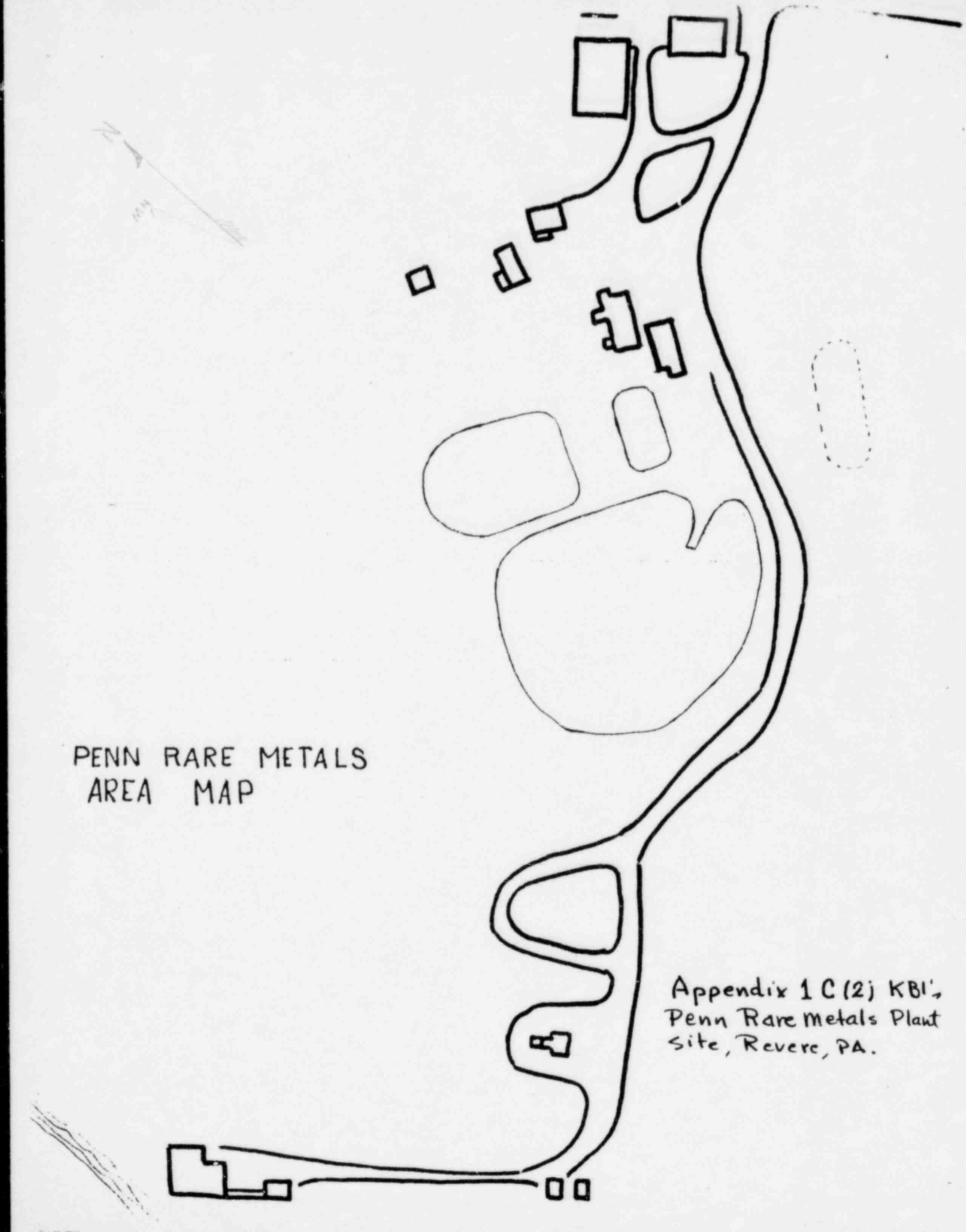
RIVER BANK

APPENDIX 1B (2)

Location of KBI's Slag Dump



Appendix 1C (1) KBI Penn Rare Metals
Revere, PA.



PENN RARE METALS
AREA MAP

Appendix 1 C (2) KBI,
Penn Rare Metals Plant
Site, Revere, PA.

Appendix 2

A Division of
Cabot Corporation

P.O.Box 1462, Reading, PA 19603 • Telephone 215/371-3600 • Telex (510) 651-0106

May 25, 1982

TO: A. J. ZABOROWSKI

FROM: L. S. O'ROURKE

RE: RADIATION SAFETY OFFICER

In conformity with the Rules and Regulations of the Nuclear Regulatory Commission, and the terms and conditions of Cabot's Radiation Safety Procedures, this will confirm that the Radiation Safety Officer (RSO) shall and does have the authority to shut down an operation if, in the opinion of the Radiation Safety Officer, the operation poses a threat to the health and safety of the employees or of the public.

L. S. O'Rourke

L. S. O'ROURKE
GENERAL MANAGER AND
VICE PRESIDENT

LSO'R/lfz

cc: J. A. Cenerazzo
F. T. Coyle
R. G. Gallaghar
W. J. Hetrick
B. E. Sacks

APPENDIX 3A

Summary of External Radiation Exposures of KBI Employees for 1980 and 1981

Results of personnel monitoring and radiation surveys of the Ta-Cb production work areas over the last 15 years have indicated that annual external radiation exposures of employees would not exceed 10% of the current annual maximum permissible exposure limit. The reasons for this are (1) beta/gamma radiation intensities rarely exceed 0.5 mR/hr at any point in the work area; (2) our processes are totally enclosed to optimize economics and safety; (3) the chemical processes are not labor intensive (only 9 people are employed for continuous processing). Thus, in accordance with 10 CFR 20.202, since it is unlikely for any employee involved in Ta-Cb processing to receive in excess of 25% of the applicable standards specified in §20.101 (a) and 20.104 (a) we do not require personnel monitoring to be worn.

During 1980 and 1981, film badges were supplied weekly to X-ray Fluorescense workers by ICN Dosimetry Service. Ring badges were provided on a monthly basis by Radiation Detection Company. Results of these badges are attached which indicate that external radiation exposures to employees was below the limits of photometric dosimetry techniques used by these film badge suppliers.

Attachment 3 A 1

MAR 1 2 1981

CODE NO 3880

NOTIFY

FOR: KAWECKI BERYLCO INDST INC
ATT FRANCIS T COYLE MGR
P O BOX 567
BOYERTOWN PA 19512
ANALYTI

COPIES

PAGE 1

ICN DOSIMETRY SERVICE
26201 MILES ROAD
CLEVELAND, OHIO 44128
TELEPHONE: 216/831-3000

RADIATION EXPOSURE REPORT

1980 SUMMARY
TYPE OF SERVICE- WEEKLY

PLEASE NOTE

DATE REPORT MAILED			DATE FILMS RECEIVED			NO OF FILMS SCHEDULED			
MO	DAY	YR	MO	DAY	YR	1ST QTR	2ND QTR	3RD QTR	4TH QTR
12	31	80							

CALENDAR QUARTERS			
1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER
TO	TO	TO	TO

LOT NO	PERSONAL IDENTIFICATION					CURRENT EXPOSURE IN REMS						CUMULATIVE EXPOSURE IN REMS												
												QUARTERLY EXPOSURE TO DATE							YEAR TO DATE		LIFETIME			
	BADGE NO	NAME		SOCIAL SECURITY NUMBER	BIRTH-DATE	BADGE DATE (LAST DAY OF EXPOSURE PERIOD) MO	DAY	YR	GAMMA & X-RAY	NEUTRON	BETA	TOTAL EXPOSURE		GAMMA & X-RAY	NEUTRON	BETA	WHOLE BODY			WHOLE BODY		WHOLE BODY			
	0004	METKA, W.	1			07		80													000	000	028	0260782
	0006	COYLE F T	1			01		79													000	000	000	0000463
	0008	QUIGLEY R	1			11		76													000	000	000	0000463
	0018	SANNON,W.	1			12		80													000	000	000	0000780
	0029	MUYSAN,S.R.	1			12		80													000	000	000	0000571
	0036	SPARE I	5			03		80													000	000	000	0000174
	0040	MACHEMER J	1			12		80													000	000	000	0000974
	0042	FRANCKOWIAK	1			12		80													000	000	000	0001175
	0043	FOSTER J	1			01		79													000	000	000	0000578
	0044	MARCH H F	1			11		76													000	000	000	0000578
	0045	TORONEY C	1			12		80													000	000	000	0000578
	0047	OVERHOLTZER H	1	191146975		12		80													000	000	000	0000578
	0048	TEST 1	1			05		77													000	000	000	0000577
	0049	TEST 1	1			05		77													000	000	000	0000577
	0050	TEST CONTROL	1			05		77													000	000	000	0000577
	0051	TEST 2 WRIST	2			07		77													000	000	000	0000577
	0052	TEST 2 WRIST	2			07		77													000	000	000	0000777
	0053	TEST 2 CON. WR	2			07		77													000	000	000	0000777
	0054	BRENDLINGER R	1			12		80													000	000	000	0000777
	0055	HUNTER L	1			12		80													000	000	000	0000677
	0056	LEHMAN G	1			12		80													000	000	000	0000176
	0057	CASARELLA J	1	210280642		04		79													000	000	000	0000578
	0058	BEAN N	1	175362071		12		80													000	000	000	0000878
	0059	KLINE M	1	194309451	0602381	12		80													000	000	000	0000679
																					030	030	030	0300260
	(1)	(2)	3	(4)	(5)	(6)			(7)	(8)	(9)	(10)	11	(12)	(13)	(14)	(15)	(16)	17	18	(19)	(20)	(21)	(22)	(23)

Filed 3/17/81 dg

COLUMN REF.
SEE REVERSE SIDE FOR COMPLETE REPORT DETAILS

CODE KEY
1 BODY BADGE
2 WRIST OR FINGER BADGE
3 TLD BODY BADGE
4 TLD WRIST OR FINGER BADGE
5 OTHER

(9) INCLUDES NON PENETRATING X AND GAMMA RADIATION

CODE KEY
A LIGHT STRUCK
B DAMAGED (HEAT, WATER, FUMES)
C CONTROL EXPOSED OR DAMAGED
D CONTROL NOT RETURNED
E OVEREXPOSED FILM (IMMEDIATE INVESTIGATION REQUIRED)
F FILM DROPPED
G CONTAMINATED
H DEFECTED FILM
I FILM NOT PROCESSED
J UNUSUAL EXPOSURE PATTERN
K EXPOSED CONTROL SUBTRACTED

ENTRIES IN THIS SECTION AT CUSTOMER'S OPTION PROVIDED THAT COMPLETE PRIOR EXPOSURE RECORDS ARE FURNISHED

Attachment 3 A 2

CODE NO 388D

FOR KAWECKI BERYLCO INDST INC

P O BOX 567
BOYERTOWN PA 19512
ATTN F T COYLE

ICN DOSIMETRY SERVICE
POST OFFICE BOX 28050
CLEVELAND, OHIO 44128
TELEPHONE: 216/831-3000

RADIATION EXPOSURE REPORT

PLEASE NOTE

DATE FILM RECEIVED	01/15/82		
DATE REPORT PREPARED	02/02/82		
CALENDAR QUARTERS			NO. OF FILM SCHEDULED
1st	DEC 29	to MAR 29	13
2nd	MAR 30	to JUN 28	13
3rd	JUN 29	to SEP 27	13
4th	SEP 28	to DEC 27	13
EXPOSURE PERIOD	WEEKLY		
NOTIFICATION LEVEL			PG. OF

CUMULATIVE EXPOSURE IN REM

PERSONAL IDENTIFICATION					EXPOSURE TO FILM IN REM FOR PERIOD(S) INDICATED BELOW				QUARTERLY EXPOSURE TO DATE					YEAR TO DATE				LIFETIME		
									WHOLE BODY	SKIN OF WHOLE BODY OR EXTREMITIES				WHOLE BODY	SKIN OF WHOLE BODY OR EXTREMITIES			WHOLE BODY		
LOT NO.	FILM PACKET NO.	NAME	SOCIAL SECURITY NUMBER	BIRTH-DATE	FILM DATE (LAST DAY OF EXPOSURE PERIOD) Mo. Day Yr.	DEEP	SHALLOW	NEUTRON	Total Deep	Penetrating	Non-Penetrating	Total Shallow	NO. FILM RECEIVED	Total Deep	Penetrating	Non-Penetrating	Total Shallow	Total Deep	Total Shallow	Mo. Yr.
R154	CTRL	CONTROL BADGE			122881															
R154	18	CANNON W			122881	*	*		0	0	0	0134		0	0	0	0	0	0	00766
R154	29	MOYSAN S R			122881	*	*		0	0	0	0134		0	0	0	0	0	0	00571
R154	40	MACHEMER J			122881	*	*		0	0	0	0 74		0	0	0	0	0	0	00975
R154	42	FRANCKOWIAK			122881	*	*		0	0	0	0134		0	0	0	0	0	0	01175
R154	45	TORONEY C			122881	*	*		0	0	0	0134		0	0	0	0	0	0	01076
R154	47	OVERHOLTZER H	191146975		122881	*	*		0	0	0	0 84		0	0	0	0	0	0	00577
R154	54	BRENDLINGER R			122881	*	*		0	0	0	0 84		0	0	0	0	0	0	00877
R154	55	HUNTER L			122881	*	*		0	0	0	0134		0	0	0	0	0	0	00178
R154	56	LEHMAN G			122881	*	*		0	0	0	0134		0	0	0	0	0	0	00578
R154	58	BEAN N	175362071		122881	*	*		0	0	0	0134		0	0	0	0	0	0	00679
		FEB - 8 1982																		
		filed 2/16/82																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23

COLUMN REF.
SEE REVERSE SIDE FOR COMPLETE REPORT DETAILS

CODE KEY

1. BODY BADGE	4. TLD—WRIST BADGE	7. RING
2. WRIST BADGE	5. OTHER	8. TLD—RING
3. TLD—BODY BADGE	6. ROOM MONITOR	9. NEUTRON

CODE KEY
SEE REVERSE SIDE FOR EXPLANATION OF CODE LISTED

APPENDIX 3B

Summary of Internal Radiation Exposures of KBI Employees for 1980 and 1981

The potential for internal radiation risks to employees is evaluated by analyses and interpretation of results of monitoring of air particulates, removable surface contamination and urine.

Air and smear samples are collected and analyzed as part of the quarterly surveys. Bioassay (urine) sampling of certain employees is performed at the discretion of the RSO. These data are reviewed and interpreted as part of the annual audit of our radiation protection program.

Results of the analyses and interpretations of these data are contained in the following attachments:

Appendix 3B (1) Summary and Interpretation of Air Particulates Monitoring for 1980 and 1981 (attachment 1)

Appendix 3B (2) Summary and Interpretation of Smear Sampling for Removable Radioactive Contamination during 1980 and 1981 (attachment 2)

Appendix 3B (3) Summary of Urine Bioassay of Employees for 1980 and 1981 (attachment 3)

Urine Bioassay Data for Employees Sampled during 1980 & 1981

Results of air sampling and surface contamination monitoring of the areas in which source materials are stored or used at KBI have not exceeded 50% of the currently accepted MPC's for air and our self-imposed limit of 1000 dpm/100cm² for removable alpha.

We forbid any smoking, eating or drinking in the Ta-Cb work areas, thus we do not consider injestion of U/Th bearing materials to be a significant risk to our employees. Inhalation of radioactive airborne particulates has not proven to be a risk, based upon past sampling data. However, we have required certain employees to submit periodic urine samples to verify that our assumptions are valid and that routine bioassay (urine, lung scans, etc.) are not required. Results of urine bioassay analysis obtained during the last 2 years has been summarized in the following table:

Appendix 3-B 1
Attachment 1

SUMMARY OF AIR PARTICULATE MONITORING 1980/1981

Date	Location	Volume (in^3)	Concentrations Gross Alpha in u Ci/ml Highest	Lowest	Average
1980	073 Grind	7.7	3.3×10^{-12}	0.3×10^{-14}	1.6×10^{-12}
1981	073 Grind	7.7	1.1×10^{-13}	2.3×10^{-15}	5.6×10^{-14}
1980	073 Digest	7.7	1.1×10^{-12}	2.0×10^{-14}	5.6×10^{-13}
1981	073 Digest	7.7	2.0×10^{-12}	0.7×10^{-13}	1.35×10^{-13}
1980	007 Ore Store	7.7	7.0×10^{-14}	2.0×10^{-14}	4.5×10^{-14}
1981	007 Ore Store	7.7	7.0×10^{-15}	2.0×10^{-15}	3.6×10^{-14}
1980	026 Drying	7.7	1.2×10^{-13}	1.9×10^{-14}	6.95×10^{-14}
1981	026 Drying	7.7	7.0×10^{-14}	1.2×10^{-14}	4.1×10^{-14}

Maximum permissible concentration (per 10 CFR 20 Appendix B);

	Table I	Table II
Natural U	1×10^{-10}	5×10^{-12}
Natural Th	6×10^{-11}	$2 \times 1-^{-12}$
Our Action Level Total	1.5×10^{-11}	5×10^{-13}

Appendix 3-B 2
Attachment 2

SUMMARY OF SMEARS u100cm² as uCi/cm²

Date	Location	Results of Alpha Analyses of Smears High Reading	Low Reading	Average	dpm/100cm²
1980	073 Grind	4.8×10^{-10}	3.1×10^{-9}	2.5×10^{-8}	5.5
1980	073 Digest	3.9×10^{-7}	5.9×10^{-9}	1.9×10^{-7}	42.0
1980	007 Ore Store	2.9×10^{-8}	3.1×10^{-9}	1.6×10^{-8}	3.5
1980	026 Drying	1.1×10^{-7}	8.7×10^{-9}	5.9×10^{-8}	13.0
1981	010 Bubble	2.9×10^{-8}	0.0	1.4×10^{-8}	3.0
1981	073 Digest	4.9×10^{-8}	2.4×10^{-8}	3.6×10^{-7}	7.9
1981	007 Ore Store	1.2×10^{-8}	0.0	6.0×10^{-9}	1.3
1981	Various	(reported in d/m; beta-)			
	Ore House to Lunch Room	45.9	0.0		17.0

Maximum permissible (gross alpha removable) 1000 dpm/cm²
Action Level: $\geq$ 200 dpm/100cm²

Appendix 3B
Attachment 3

NATURAL URANIUM AND NATURAL THORIUM IN URINE

	Persons Tested	High Th	Low Th	All U
1980	13	≤0.99 dpm	≤0.33 dpm	≤5 µg/L
1981	10	≤0.44 dpm	≤0.20 dpm	≤5 µg/L

Appendix 4 A

WASTE MANAGEMENT

Waste Management of gaseous, solid, and liquid wastes at KBI is implemented by various permits administered by Pennsylvania Department of Environmental Resources (PA DER).

Gaseous: Ambient Air Quality Standards
Chapter 131, Section 131.3

Solid: Industrial Wastes Treatment Facility
Permit #4670203, EPA identification #PAD002335545

Liquid: NPDES Permit Pa-0011266 (see attachment 1)

The bulk of the wastes are generated by hydrofluoric/ sulfuric acid digestion of Ta, Cb, Ti and Zr ores. The press cake from TaCb operations is stored in concrete vaults. The liquid acidic waste is neutralized with lime. This slurry is then filtered with the solid waste cake, mainly $CaF_2/CaSO_4$ disposed at a permitted landfill. The waste water is pH adjusted to 6-9 for subsequent discharge to either Berks Montgomery Municiple Authority (BMMA) or West Swamp Creek authorized by NPDES permit.

Approximately 70-100 tons waste cake (50% H_2O) are landfilled daily (360 x 100 = 36K tons per year. About 100,000 gallons of waste water are generated per day (360 x 100,000 = 36M gal/yr.

Gaseous waste HF from scrubbers is sampled twice monthly and reported to Pa. DER. Waste water is sampled weekly, data composites are reported monthly to Pa. DER, with copies to EPA and BMMA. Composition of waste cake to landfill has been fairly consistent over many years, and analyzed as needed.

Waste water is stored in a 12 million-gallon lagoon (#6). Discharge pH is monitored, with a control to shut-off flow if outside 6-9 range, to both BMMA and West Swamp Creek. Fluoride and ammonia are monitored in West Swamp Creek, with a recording fluoride probe, and grab samples for ammonia - reported as N.

Ralph Sarla
5/18/82

RMS/dja

Appendix 4A
attachment (1)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
1875 New Hope Street
Norristown, PA 19401
215 631-2405

March 18, 1980

RECEIVED
MAR 24 1980
KBI CENTRAL
ENGINEERING

Kawecki Berylco Industries, Inc.
P.O. Box 567
Boyertown, PA 19512

Attention: Mr. Alfred J. Zaborowski
Vice President

Re: Industrial Waste
Kawecki Berylco Industries, Inc.
NPDES Permit No. PA 0011266
Douglass Township
Montgomery County

Gentlemen:

Above referenced permit is enclosed.

Please study the permit carefully and direct any questions to the Facilities Section of this office.

Very truly yours,

C.T. Beechwood

C.T. Beechwood, P.E.
Regional Water Quality Manager

Enclosures: Permit
Master Discharge Monitoring Report

cc: EPA
Ce Re 30
LL67

CTB:smc

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

WATER QUALITY MANAGEMENT PERMIT - PART I

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NO. PA 0011266

In compliance with the provisions of the Clean Water Act, 33 U.S.C. 1251 et. seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et. seq.,

Kawecki Berylco Industries, Inc.

is authorized to discharge from a facility located at
Douglass Township
Montgomery County

to receiving waters named West Swamp Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B, and C hereof.

This permit shall become effective on October 31, 1979.

This permit and the authorization to discharge shall expire at midnight, March 31, 1981.

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the standard or special conditions, the standard or special conditions shall apply.

2. Failure to comply with the rules and regulations of the Department or with the terms or conditions of this permit shall void the authority to discharge given to the permittee by this permit.

PERMIT ISSUED

DATE 3-18-80

BY C.T. Beechwood

TITLE C.T. Beechwood, P.E.
Regional Water Quality Manager

LL66

LAT 40°20'39"
LONG 75°37'00"

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS, OUTFALL 001
WHICH RECEIVES WASTE FROM: Lagoons V & VI

During the period beginning issuance and lasting through expiration the permittee is authorized to discharge.

Such discharges shall be limited, and monitored by the permittee, as specified below:

Effluent Characteristic	Discharge Limitations* (mg/l)		Monitoring Requirements	
	Daily Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow-m^3/day (MGD)	N/A	N/A	Continuous	measured
Suspended Solids	20	40	1/week	24 hr comp.
Net Soluble Phosphate (PO_4)	0.5	1.0	1/week	24 hr comp.
Ammonia-Nitrogen (as N)	N/A	N/A	1/week	24 hr comp
Fluoride	N/A	N/A	1/week	24 hr comp.
Total Dissolved Solids	N/A	N/A	1/week	24 hr comp.

The pH shall not be less than 6.0 standard units, not greater than 9.0 standard units and shall be monitored 1/day by grab sample.

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

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s): at outfall 001

*Unless otherwise indicated, these are gross discharge limitations.

KK51

PART A

LAT 40°20'39"
LONG 75°37'00"

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS, OUTFALL 002
WHICH RECEIVES WASTE FROM: Cooling & Boiler

During the period beginning issuance and lasting through expiration the permittee is authorized to discharge.

Such discharges shall be limited, and monitored by the permittee, as specified below:

Effluent Characteristic	kg/day(lbs/day) Daily Avg.	kg/day(lbs/day) Daily Max.	Discharge Limitations* (mg/l) Daily Avg.	Discharge Limitations* (mg/l) Daily Max.	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow-m^3/day (MGD)	N/A	N/A	N/A	N/A	1/week	measured
Suspended Solids	9.1(20)	18.2(40)	20	40	1/week	24 hr comp.
Net Soluble Phosphate (PO_4)	0.23(0.5)	0.46(1.0)	0.5	1.0	1/week	24 hr comp.
Temperature	See other requirements Part C-1				1/week	i-s
Ammonia-Nitrogen (as N)	N/A	N/A	N/A	N/A	1/week	24 hr comp
Fluoride	N/A	N/A	N/A	N/A	1/week	24 hr comp.
Total Dissolved Solids	N/A	N/A	N/A	N/A	1/week	24 hr comp.

The pH shall not be less than 6.0 standard units, not greater than 9.0 standard units and shall be monitored 1/day by grab sample.

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

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s): at outfall 002

*Unless otherwise indicated, these are gross discharge limitations.

KK52

PART A

LAT 40°20'39"
LONG 75°37'00"

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS, OUTFALL 003
WHICH RECEIVES WASTE FROM: Water Treatment Filter Backwash

During the period beginning issuance and lasting through expiration the permittee is authorized to discharge.

Such discharges shall be limited, and monitored by the permittee, as specified below:

Effluent Characteristic	Discharge Limitations* (mg/l) Daily Avg.	Daily Max.	Monitoring Requirements Measurement Frequency	Sample Type
Flow (MGD)	N/A	N/A	1/week	estimated
Total Suspended Solid	20	40	1/week	Grab
Soluble Phosphate (PO_4)	0.5	1.0	1/week	Grab

The pH shall not be less than 6.0 standard units, not greater than 9.0 standard units and shall be monitored 1/wee grab sample.

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

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s): at Outfall 003

*Unless otherwise indicated, these are gross discharge limitations.

KK53

PART A

Page 3 of 13

1. IN STREAM LIMITATIONS AND MONITORING REQUIREMENTS, RECEIVING STREAM: WEST SWAMP CREEK.

During the period beginning issuance and lasting through expiration, the rate of discharge from Outfall 001 shall be regulated to achieve the following in stream limitations.

Characteristic	In Stream Limitations* (mg/l)			Monitoring Requirements	
	Daily Avg.	Daily Max.	Instantaneous Max.	Measurement Frequency	Sample Type
Ammonia-Nitrogen (as N)	N/A	N/A	1.5	1/week	Grab
Fluoride	N/A	N/A	2.0	Continuous	measured
Total Dissolved Solids	500	N/A	750	1/week	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s): Approximately 350 feet upstream of County Line Road.

*Unless otherwise indicated, these are gross discharge limitations.

KK54

PART A

PART A

2. MONITORING AND REPORTING

a. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

b. Reporting

Monitoring results obtained during the previous 1 months shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. T-40), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on 5/28/80 . Duplicate signed copies of these and all other reports required herein, shall be submitted to the Department and the EPA Regional Administrator at the following addresses:

BUREAU OF WATER QUALITY MANAGEMENT
[illegible] FULTON STREET
NORRISTOWN, PA. 19401

Pennsylvania Section 3EN22
Enforcement Division
U.S. Environmental Protection Agency
Region III
6th and Walnut Streets
Philadelphia, PA 19106

c. Definitions

(1) The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the daily average discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

(2) The "daily maximum" discharge means the total discharge by weight during any calendar day.

(3) The "daily average" concentration means the arithmetic average of all the daily determinations of concentration made during a calendar month. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average of all the samples collected during that calendar day.

(4) The "daily maximum" concentration means the daily determination of concentration for any calendar day.

(5) The "instantaneous maximum" concentration means the concentration not to be exceeded at any time in any grab sample.

(6) Composite Sample - A combination of individual samples obtained at regular intervals over a time period. Either the volume of each individual sample is proportional to discharge flow rates or the sampling interval (for constant volume samples) is proportional to the flow rates over the time period used to produce the composite. The maximum time period between individual samples shall be two hours.

(7) Grab Sample - An individual sample collected in less than 15 minutes.

(8) "i-s", = immersion stabilization - a calibrated device which is immersed in the effluent stream until the reading is stabilized.

(9) The "daily average" temperature means the arithmetic mean of temperature measurements made on an hourly basis, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar month, or during the operating month if flows are of a shorter duration.

(10) The "daily maximum" temperature means the highest arithmetic mean of the temperatures observed for any two (2) consecutive hours during a 24-hour day, or during the operating day if flows are of shorter duration.

(11) "Measured Flow" - Any method of liquid volume measurement the accuracy of which has been previously demonstrated in engineering practice, or for which a realtionship to absolute volume has been obtained.

(12) "At outfall XXX" - A sampling location in outfall line XXX downstream from the last addition point or as otherwise specified.

(13) Estimate - To be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

(14) Non-contact cooling water means the water that is contained in a leak-free system, i.e. no contact with any gas, liquid, or solid other than the container for transport; the water shall have no net poundage addition of any pollutant over intake water levels.

(15) The term "cyanide A" shall mean cyanide amenable to chlorination.

d. 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.

e. Recording of Results

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

(1) The exact place, date, and time of sampling.

(2) The dates the analyses were performed.

(3) The person(s) who performed the analyses.

(4) The analytical techniques or methods used.

(5) The results of all required analyses.

f. 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. T-40). Such increased frequency shall also be indicated.

g. 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 Department or the EPA Regional Administrator.

3. SCHEDULE OF COMPLIANCE

a. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

N/A

b. 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 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.

N/A

PART B

1. MANAGEMENT REQUIREMENTS

a. 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 Department of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

b. Noncompliance Notification

If, for any reason, the permittee does not comply with or will be unable to comply with any effluent limitation specified in this permit, the permittee shall provide the Department and the EPA Regional Administrator with the following information, in writing, within five (5) days of becoming aware of such condition:

(1) A description of the discharge and cause of noncompliance; and

(2) 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.

c. Facilities Operation

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.

d. Adverse Impact

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

e. Bypassing

Any diversion from or bypass of facilities used to maintain compliance with the terms and conditions of this permit is prohibited. Where malfunctions, breakdowns, or other unforeseen events cause a disruption of these facilities, the permittee shall first make an effort to halt, reduce, or otherwise control production so that a discharge in excess of the effluent limitations does not occur.

In the event that diversion or bypassing occurs to prevent loss of life or severe property damage, or where excessive storm drainage or runoff would damage these facilities, the permittee shall promptly notify the Department and the EPA Regional Administrator, orally and in writing, of each such diversion or bypass, together with a full and complete explanation of the event as noted in Par. 1.b(1) and 1.b(2) above.

f. Removed Substances

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

g. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

(1) In accordance with the Schedule of Compliance contained in Part A.3, provide an alternative power source sufficient to operate the wastewater control facilities;

or, if such alternative power source is not in existence, and no date for its implementation appears in Part A.3,

(2) Halt, reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

2. RESPONSIBILITIES

a. Right of Entry

The permittee shall allow the head of the Department, the EPA Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

(1) To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

(2) 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.

b. 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 controlier of the existence of this permit by letter, a copy of which shall be forwarded to the Department and to the EPA Regional Administrator.

c. Availability of Reports

Except for data determined to be confidential under 25 Pa. Code, Section 92.63, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and the EPA Regional Administrator. 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 penalites as provided for in Section 309 of the Act or applicable State law.

d. 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:

(1) Violation of any terms or conditions of this permit;

(2) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

(3) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

(4) A change in applicable water quality standards or treatment requirements.

e. Toxic Pollutants

Notwithstanding Part B.2.d 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, then this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

f. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

g. 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.

h. 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.

i. Other Laws

Nothing herein contained shall be construed to be an intent on the part of the Department to approve any act made or to be made by the permittee inconsistent with the permittee's lawful powers or with existing laws of the Commonwealth regulating industrial wastes and the practice of professional engineering, nor shall this permit be construed to sanction any act otherwise forbidden by any of the laws of the Commonwealth of Pennsylvania or of the United States.

j. 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.

PART C

OTHER REQUIREMENTS

1. The discharge of cooling water from Outfall 002 shall be conducted in accordance with the Rules and Regulations of the Department of Environmental Resources which pertain to heated wastes, namely, Chapter 97 (Section 97.81 through 97.86). In addition, the discharge of cooling water from Outfall 002 is assigned a 5°F maxing zone, in West Swamp Creek with the dimensions of 20 feet downstream and 4 feet across from the point of discharge.

2. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C), and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

   Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   Controls any pollutant not limited in the permit.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

3. Effluent limitations, monitoring requirements, and other standard and special conditions which relate to the discharge(s) of pollutants authorized by this permit and which are contained in Water Quality Management Permit(s)

   No. 4670203 issued on March 31, 1970.

   No. 4673210 issued on January 30, 1974.

   No. 4674211 issued on December 12, 1977.

   are superseded by the terms and conditions of this permit, unless specifically noted otherwise herein.

G149

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
DISCHARGE MONITORING REPORT

Form Approved
OMB NO. 158-R0071

Kawecki - Berylco Industries, Inc.

Douglass Township, Montgomery County

ST	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE
PA	00'1266	001	3339 2819	40°20'39"	75°37'00"

REPORTING PERIOD FROM [YEAR | MO | DAY] TO [YEAR | MO | DAY]

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. *(e.g., "3/7" is equivalent to 3 analyses performed every 7 days.)* If continuous enter "CONT."
5. Specify sample type ("grab" or "___ hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.

PARAMETER		QUANTITY (3 card only) MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	QUANTITY UNITS	QUANTITY NO. EX	CONCENTRATION (4 card only) MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM	CONCENTRATION UNITS	CONCENTRATION NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow	REPORTED				MGD					–			
	PERMIT CONDITION	–	–	–			–	–	–	–		Cont	Measured
Suspended Solids	REPORTED					–				mg/l			
	PERMIT CONDITION	–	–	–	–		–	20	40			1/week	24 hr Comp.
Net Soluble Phosphate(PO_4)	REPORTED									mg/l			
	PERMIT CONDITION	–	–	–	–		–	0.5	1.0			1/week	24 hr. Comp.
Ammonia - Nitrogen as N	REPORTED					–				mg/l			
	PERMIT CONDITION	–	–	–	–		–	N/A	N/A			1/week	24 hr. Comp.
Fluoride	REPORTED					–				mg/l			
	PERMIT CONDITION	–	–	–	–		–	N/A	N/A			1/week	24 hr. Comp.
Total Dissolved Solids	REPORTED					–				mg/l			
	PERMIT CONDITION	–	–	–	–		—	N/A	N/A			1/week	24 hr. Comp
pH	REPORTED												
	PERMIT CONDITION	6.0	–	9.0	std unit		–	–	–	–		1/day	Grab
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER (LAST, FIRST, MI) | TITLE OF THE OFFICER (TITLE) | DATE (YEAR, MO, DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

T-40 (4-74)

ORIGINAL

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
DISCHARGE MONITORING REPORT

Form Approved
OMB NO. 158-R0073

Kawecki - Berylco Industries, Inc.

Douglass Twp. Montgomery Co.

(2-3) ST	(4-10) PERMIT NUMBER	(11-13) OUTFALL	(14-17) SIC	LATITUDE	LONGITUDE
PA	0011266	002	3339 2819	40°20'39"	75°37'00"

REPORTING PERIOD FROM (18-19) YEAR (20-21) MO (22-23) DAY TO (24-25) YEAR (26-27) MO (28-29) DAY

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "___ hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.

(32-37) PARAMETER		(3 card only) (38-45) QUANTITY MINIMUM	(46-53) QUANTITY AVERAGE	(54-61) QUANTITY MAXIMUM	QUANTITY UNITS	(62-63) NO. EX	(4 card only) (38-45) CONCENTRATION MINIMUM	(46-53) CONCENTRATION AVERAGE	(54-61) CONCENTRATION MAXIMUM	CONCENTRATION UNITS	(62-63) NO. EX	(64-69) FREQUENCY OF ANALYSIS	(70-75) SAMPLE TYPE
Flow	REPORTED				MGD					--	-		
	PERMIT CONDITION	-	-	-			-	-	-			1/week	measured
Suspended Solids	REPORTED				lbs/day					mg/l			
	PERMIT CONDITION	-	20	40			-	20	40			1/week	24hrcomp
Net Soluble Phosphate (PO_4)	REPORTED				lbs/day					mg/l			
	PERMIT CONDITION	-	0.5	1.0			-	0.5	1.0			1/week	24hrcomp
Temp.	REPORTED				°F					-	-		
	PERMIT CONDITION	N/A	N/A	N/A			-	-	-			1/week	i-s
Ammonia - Nitrogen as N	REPORTED				lbs/day					mg/l			
	PERMIT CONDITION	-	N/A	N/A			-	N/A	N/A			1/week	24hrcomp
Floride	REPORTED				lbs/day					mg/l			
	PERMIT CONDITION	-	N/A	N/A			-	N/A	N/A			1/week	24hrcomp
Total Dissolved Solids	REPORTED				lbs/day					mg/l			
	PERMIT CONDITION	-	N/A	N/A			-	N/A	N/A			1/week	24hrcomp
PH	REPORTED				Std. Unit					-	-		
	PERMIT CONDITION	6.0	-	9.0			-	-	-			1/day	Grab

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE	
LAST FIRST MI	TITLE	YEAR MO DAY	I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

T-40 (4-74)

ORIGINAL

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

DISCHARGE MONITORING REPORT

Form Approved
OMB NO. 158-R0073

Kawecki Berylco Industries, Inc.

Douglass Twp. Montgomery Co.

(2-9) ST	(10-18) PERMIT NUMBER	(17-19) DIS	SIC	LATITUDE	LONGITUDE
PA	0011266	003	3339 2819	40°20'39"	75°37'00"

REPORTING PERIOD FROM (20-21) YEAR (22-23) MO (24-25) DAY TO (26-27) YEAR (28-29) MO (30-31) DAY

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. *(e.g., "3/7" is equivalent to 3 analyses performed every 7 days.)* If continuous enter "CONT."
5. Specify sample type ("grab" or "___ hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.

(32-57) PARAMETER		(3 card only) QUANTITY (39-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(62-63) NO. EX	(4 card only) CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(62-63) NO. EX	(64-65) FREQUENCY OF ANALYSIS	(66-70) SAMPLE TYPE
Flow	REPORTED				MGD					-	-		
	PERMIT CONDITION	-	-	-			-	-	-			1/week	Estimated
Suspended Solids	REPORTED				-					mg/l			
	PERMIT CONDITION	-	-	-			-	20	40			1/week	Grab
Soluble Phosphate (Po_4)	REPORTED				-								
	PERMIT CONDITION	-	-	-			-	0.5	1.0	mg/l		1/week	Grab
Ph	REPORTED				Std Unit					-	-		
	PERMIT CONDITION	6.0	-	9.0			-	-	-			1/week	Grab
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE		
LAST FIRST MI	TITLE	YEAR	MO	DAY

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

T-40 (474)

ORIGINAL

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

DISCHARGE MONITORING REPORT

Form Approved
OMB NO. 158-R0073

Kawecki - Berylco Industries, Inc.

Douglass Twp. Mont. Co.

ST	PERMIT NUMBER	DIS	SIC	LATITUDE	LONGITUDE
PA	0011266	*	3339 2819	40°20'39"	75°37'00"

* In stream limitations

West Swamp Creek

REPORTING PERIOD FROM (YEAR / MO / DAY) TO (YEAR / MO / DAY)

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "__ hr. composite") as applicable. If frequency was continuous, enter "N.A".
6. Appropriate signature is required on bottom of this form.

PARAMETER		QUANTITY (3 card only) MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	QUANTITY UNITS	NO. EX.	CONCENTRATION (4 card only) MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM (Instantaneous)	CONCENTRATION UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Ammonia - Nitrogen as N	REPORTED				mg/l					mg/l			
	PERMIT CONDITION	-	-	-			-	-	1.5			1/week	Grab
Fluoride	REPORTED				mg/l					mg/l			
	PERMIT CONDITION	-	-	-			-	-	2.0			cont.	measured
Total Dissolved Solids	REPORTED				mg/l					mg/l			
	PERMIT CONDITION	-	-	-			-	500	750			1/week	Grab
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER (LAST / FIRST / MI)	TITLE OF THE OFFICER (TITLE)	DATE (YEAR / MO / DAY)	I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

T-40 (4-74)

ORIGINAL

Appendix #4B

Review of Radioactivity in Raw Materials and Wastes Associated with the Production of Tantalum and Columbium:

A. Raw Materials:

Uranium and Thorium are present in varying concentrations (0.05 to 15%) in Tantalum-bearing slags and ores as unwanted contaminants. The following types of raw materials are essential to the production of Ta and Cb:

1. Slags

Eastern Tin Slags - contain natural Uranium and Thorium in the form of silicate glasses. The U and Th are uniformly distributed in the black glass-like slag that is imported from Malasia. Typical concentrations of 0.02% U and 0.02% Th can produce gamma radiation levels of about 0.1 mR/hr at contact.

Thaisarco Tin Slags - are similar to the above and can contain 0.09% U and 0.21% Th which may result in radiation levels of 1.2 mR/hr at contact.

2. Ores

KBI is a wholly owned subsidiary of Cabot Corporation which is engaged in the production of metals, alloys and chemicals. Two of the principle products are Tantalum and Columbium metals, alloys and chemicals.

The starting raw materials for these products currently being used are ores, concentrates, slags and residues. These materials contain unwanted small quantities of natural Uranium and Thorium. Some of the typical materials are listed below along with their Uranium and Thorium concentrations and the radioactivity measurements on contact.

Type of Material	% U	% Th	Contact Radiation mR/H
* Tin Slag (Malayan)	.11	.35	1.2
TaCb concentrates	.02 .019	.04 .2 .024	0.1
Tantalite	.04 .07	.05 .30	1.5

Type of Material	% U	% Th	Contact Radiation mR/H
Pyrochlore	.55	.88	1.5
	.09	2.04	
Tanco Ore	.06	.12	1-4
	.52	.05	
	.088	.024	
	.12	.10	
Columbite	.06	.25	.2
	.2	1.2	
Thairsarco Tin Slag	.09	.21	1.2

* Type of material which was processed at Reading Tulpehocken St.

Since some of these materials contain in excess 1/20th of 1% Uranium and Thorium separately or combined, they are required to have a Source Material License under Title 10 Part 40 of the Code of Federal Regulations.

While processing and extraction are proprietary, these materials are ground and digested in Hydrofluoric acid. The Ta & Cb are solubilized in the form of fluotantalic acid (H_2TaF_7) and fluocolumbic acid (H_2CbF_7) and processed into the company's products. The unwanted Uranium and Thorium precipitate along with some of the gangue in the digestion sludge. This sludge is about 40% moisture. The average percent U & Th is 1% and typical radiation on point of contact is 2 mR/H. This sludge is stored in concrete buildings on our property.

We asked our geologist, Richard V. Gaines, how the Thorium and Uranium occur in the ore we process and a copy of his letter dated April 30, 1982 is attached. (Attachment 1) In the past our work has shown that all of the Uranium and Thorium portion of the ores is extremely insoluble in the hydrofluoric acid digestion. These elements remain insoluble as UF_4 and ThF_4 in the sludge. X-ray diffraction of our sludge material shows it to be a mixture of $CaAlF_5$; $KMgAlF_6$; CaF_2; $CaMg_2AlF_{12}$ with smaller amounts of SiO_2 and SnO_2 which describes the solid portion of our waste.

To our knowledge nc gaseous waste material is generated or released to unrestricted areas. The waste solution remaining after the Tantalum and Columbium extraction is treated in our waste plant with lime. The major constituent of these solutions being fluoride and sulfate we get a precipitate of CaF_2 + $CaSO_4$ and the resultant filtrate is transferred after clarification to a lagoon previous to discharge. Our lagoon waste is always well below the MPC for U and Th. (See attachment 2, Lagoon #6 uCi/ml data.)

Appendix 4B
Attachment 1

CABOT MINERAL RESOURCES

April 30, 1982

F. T. Coyle
KBI
Division of Cabot
County Line Road
Boyertown, PA 19512

Dear Frank:

In reply to your query about the node of occurrence of uranium and thorium in tantalum-bearing slags and ores, I can say the following:

1. Slags - U and Th are in the form of silicate glasses. Hence they are uniformly distributed in the slag.

2. Ores:

   A. Tantalite - columbite ores. Here the uranium may be in discrete grains of uraninite mixed with the tantalite/columbite, as a constituent in such complex oxide minerals as samarskite, euxenite, or fergusonite; as minute blebs of the forgoing minerals within tantalite/columbite crystals; and it is thought by some that U and Th can enter into the crystal lattice of columbite/tantalite, although I am not sure that such a mode of occurrence has ever been proven.

   B. Samarskite - euxenite - fergusonite etc. ores: These minerals are always high in U and/or Th. However, because of their complexity and the problems of processing, they are not normally used as ores of Ta and Nb.

      Concentrates of columbite tantalite which also contain monozite, zircon or xenotime will also contain a little U or Th which can enter into the lattice of these minerals.

   C. Microlite or microlite-containing ores: In some regions microlite constitutes an important source of tantalum (and pyrochlore of niobium). Both microlite and phrochlore can take substantial amounts of U and Th into their lattices, and it is rare to find microlite or pyrochlore completely free of radioactive elements.

(More) . . .

220 EAST FORTY SECOND STREET, NEW YORK, N.Y. 10017, U.S.A. TEL. (212) 949-0888, TELEX 645 757 CABMIN-NYK

D. "Tanco" Ores: The Tanco concentrates invariably contain several percent, up to 20% or more, of microlite, and it is believed that this mineral accounts for most of the radioactivity associated with these concentrates.

Richard V. Gaines

Richard V. Gaines
Geologist

RVG/dja

cc: RABrumwell
RBGrabowski
MJIan

Appendix 4B (cont.)
Attachment 2

EFFLUENT #6 LAGOON

Date	uCi/ml
3-30-77	$(0.0 \pm 6.9) \times 10^{-9}$
5-17-77	$(0.0 \pm 2.5) \times 10^{-10}$
7-13-77	$(0.0 \pm 6.3) \times 10^{-10}$
10-20-77	$(0.0 \pm 2.8) \times 10^{-10}$
3-28-78	$(3 \pm 6.9) \times 10^{-10}$
7-23-78	$(0.0 \pm 4.6) \times 10^{-10}$
2-2-79	$(0.0 \pm 6.7) \times 10^{-13}$
5-4-79	$(0.0 \pm 7.94) \times 10^{-10}$
8-5-80	3.6×20^{-10}
6-2-81	$(0.0 \pm 3.1) \times 10^{-10}$
10-21-81	$(0.0 \pm 3.1) \times 10^{-10}$
1-15-82	1.505×10^{-9}